Are you sure you want to be a brain surgeon?
My story.

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The Author in 2020 (above) and 1942 (below), some 4 years after the Oxford Department of Neurosurgery was founded.

PREFACE.

There are several, excellent, books that describe the drama of surgery to the general public. These tell about the operations but perhaps less about the people doing them and how they learnt their art and craft. This account records my neurosurgical journey.

The first part describes the training I received and the remainder shows what it is like being a neurosurgeon warts and all. During this journey I have met many people, mostly admirable and remarkable, but a few possibly less so. I have painted for the reader brief portraits of many of these people. Sometimes I have been critical but I hope at all times fair.

I tell of my struggles at school and university; struggles arising from what is now called dyslexia but this condition or diagnosis had not been invented when I was young. The book relates how I overcame this word difficulty. 'Overcame' is perhaps rather too optimistic. At least I learnt to have a relatively peaceful co-existence with this problem so that I was able to pass all the exams I needed to pass, as well as to hold down a challenging and satisfying job. Furthermore and to my surprise, I found there were some advantages to being dyslexic.

My teachers at university and medical school were an eclectic group of people each deserving a pen portrait which I have attempted to provide. All were intelligent. Some were wonderful doctors, surgeons, and teachers yet others were in the wrong job. Some even showed the vanity that seems to be occasionally associated with being a surgeon. I also describe my interactions with colleagues and administrators at Oxford which were inevitably a large part of my job. These relationships were perhaps the source of much that was, at times deeply frustrating, yet at other times also extremely satisfying. This sums up being a consultant neurosurgeon in the NHS .

The rest of the book is rightly about patients; particularly patients that still, so to speak, live with me. A few still haunt me especially little Ian and young Jane.

I mention my efforts to research better methods of treatment even though my main task was to treat patients. Nor can a practising surgeon ignore lawyers these days. I describe how the failure of my first marriage introduced me to the legal profession and how I then used the knowledge acquired to become a so-called expert witness in various medico-legal disputes. I found this work intellectually very stimulating.

Looking back I received an intensive apprenticeship training which is now perhaps a thing of the past. I was an apprentice to many clever, sometimes eccentric, but occasionally even beloved master surgeons and physicians. I was trained as a general surgeon then as a neurologist and only after several years a neurosurgeon. Nowadays the training is truncated and sadly, in my view, neurosurgeons no longer are trained as general surgeons and neurologists before becoming neurosurgeons. For this reason alone it is perhaps worth recording my journey.

My hope is that the reader will come to realise that there are two aspects that determine the outcome of a neurosurgical operation, indeed probably any operation. Obviously the skill and care of the surgeon during the operation is paramount. But just as important, or possibly even more important, is the careful analysis required of all the various factors relevant to that particular patient. This must be done before a scalpel is picked up. I have recorded some accounts of individual patients and I hope at least some will reveal this aspect which, for me, is such an important and appealing part of neurosurgery. These patients may not have undergone 'exciting' or dangerous operations but most have required thoughtful preoperative analysis and it is this aspect of surgery that is often unappreciated by the public. Such analysis is not always sufficiently emphasised in the more dramatic accounts of surgical operations described for public consumption.

Nowadays the importance of the surgical team is emphasised but the preoperative assessment depends on the knowledge, experience, and the thoughtfulness of one person---the operating surgeon. Furthermore it is

unfortunately true that some individual surgeons are more skilful than others. This is important in a specialty like neurosurgery where there is sometimes a fine line between success and disaster. No operation can be done by a committee and, unfashionable as it is, it is the operating surgeon who must lead and who will always remain the most important person, apart from of course, the patient.

Chapter 1

HOW IT BEGAN

It was not a good start. I failed the 11 plus exam. This is the exam 11 year old pupils need to pass in the UK to go to a good secondary school. Without such a pass the outlook is somewhat grim. But looking back perhaps I was fortunate to have failed this exam. As I later discovered one learns so much more from failure than success. Dyslexia had not been invented then. Indeed I did not know I was dyslexic until I had children of my own. What I did know was that I had to work harder than my friends at school and university because I also had a poor memory for words as well as appalling spelling. I still think that the 'spell check' is indeed a wonderful invention.

My childhood is encrusted with memories of being told how stupid and how very thick I was. But finding a way round this curious condition was extremely satisfying. It was especially motivating to demonstrate that the teachers were wrong; I was not as stupid as they had predicted with such certainty. Yes, maybe I was different but not stupid. It was as if another, different, door had opened. I had to work things out rather than rely on a swift brain which absorbs material like a sponge only to release it effortlessly when an exam is taken. I had to understand before I could remember. Even so I not only had to understand and then learn but I had to constantly go back to revise what was needed for an exam. I believe in order to learn I needed to think more deeply and from a different perspective.

Maybe this different perspective was why others thought I was disruptive. Just as, 'four legs are good, two legs are bad' in Animal Farm, being different or two legged, is perhaps good. Maybe only disruptive children learn to circumnavigate dyslexia. We dyslexics care not for popularity. We do our own thing and travel to some extent along our own path even if this is considered to

be disruptive. Principles and rigid rules are for others. We come to our own conclusions and regard with deep suspicion anybody else's views. For this reason I have always found 'rules' difficult and 'principles' with one exception, impossible. Just maybe this is why I have found 'NHS management' so irritating. Initiative or doing your own thing in your own way, is certainly not encouraged in the NHS.

For instance I offered at my own expense to provide a beautiful fountain for the new neurosurgical building to replace the iconic 'Triton' fountain in front of the Radcliffe Infirmary. My offer was refused. No reason given nor any thanks. I suspect the reason for the refusal was that individual initiative is no longer appreciated in NHS. Of course Dr John Radcliffe's original donation to build the original Radcliffe Infirmary was much appreciated. But times have clearly changed.

Operating must be different for every surgeon. When I swing the operating microscope into place and look along a beam of light while maintaining binocular vision I enter a bright and magnified country of sublime and exquisite anatomy, I am told, akin to deep sea diving. At the same time I enter a personal zone which I have always felt to be similar to that which athletes strive to enter. I become completely relaxed both physically and emotionally. I speak sparingly if at all and discourage all extraneous noise especially chattering by onlookers. They are asked to go outside. I have never wanted music in my operating theatre.

The actual operation is done quickly but never ever hurriedly. Linda the experienced 'scrub' nurse knows which instrument I need. She becomes an extension of the surgeon and I often liken our co-operation and liaison to that of two ballet dancers doing a pas de deux. The operation is done quickly for two reasons. There are no unnecessary movements. Just one cut of tissue rather than multiple cuts which quite apart from anything else is much kinder and gentler to the body. Secondly prior to the operation I have studied the relevant anatomy from the scans or angiograms depicting the blood vessels and nerves. I have

made a plan A and also a plan B should events turn out differently to that expected. So during the operation I not only see the anatomy down the microscope but I can also visualise the anatomy of the, as yet, unexposed brain, blood vessels and nerves adjacent to the unexposed tumour.

I now realise that to have a dyslexic brain can be an advantage for a surgeon. It compensates the sufferer for the agony of not understanding and remembering words, by allowing him or her to remember pictures vividly. Possibly this is a form of compensation which occurs naturally when one particular ability becomes a relative disability. Hence a blind person walking down a street appreciates noise or perhaps vibration, or lack of it from the trees forming 'shadows'.

For me operating at the highest level is a form of intense concentration but sublime relaxation. An unusual state of being which in itself is quite unlike anything one experiences elsewhere in life and therein is why operating can become almost addictive.

So how did this story begin?

A few years ago some of my eleven children wondered about this man who had entered their lives perhaps rather later than most fathers. What did he do? Why was he away so much? At their behest I wrote a brief account of my life. I also circulated this account to a few close friends who also found it of interest and even amusing. Some of these friends then attempted to persuade me to expand these jottings into a book feeling that it would be of interest to a wider audience. Initially I dismissed these suggestions possibly from slothfulness on my part but the suggestions became more numerous and more insistent. Brain surgery and brain surgeons attract general interest. Why? Perhaps it is the thought of someone delving into the seat of the mind and consciousness which promotes wonder. Equally I suspect others wonder about the sort of person who is prepared to perform such operations. Do these surgeons possess superior qualities of intellect, patience, courage, and manual dexterity combined with 'nerves of steel' which place them apart? Some might like to think so but I am

not convinced. Why are some doctors themselves attracted to this demanding and sometimes depressing specialty?

For some doctors this choice of specialty is a mistake. Perhaps they are themselves initially attracted by the mystique and the real or imagined kudos that is sometimes conferred on neurosurgeons but they eventually find that they do not have the inclination or qualities that are needed to be successful. I feel sorry for these doctors because they become trapped in a life-long career in a demanding specialty with which they cannot cope and from which they cannot easily escape.

Every neurosurgeon will tell a different story; I can only tell my story but perhaps in the telling I will reveal the reasons why I became a brain surgeon. The reader will find that there are positive and negative reasons. Just as many captains of industry have had sad and challenging childhoods that make them strive in order to compensate for some emotional and physical deprivation in childhood, so it will be perhaps the case with many that become neurosurgeons. Why else would anyone put themselves through the stress of the necessary training in order to carry out operations that can last many hours and require intense concentration? Are there any emotionally well rounded but successful neurosurgeons? Yes perhaps there are a few, very few, but I suspect those that are too well rounded often find it difficult to meet the challenge posed by this work. Are neurosurgeons somewhat psychopathic? Perhaps there is a streak of psychopathology in most surgeons. Maybe just being 'disruptive' helps. Neurosurgery is a demanding mistress and there is also a requirement to put the patient always first and these two demands often result in unsurmountable stresses, often fatal to conventional marriage.

So what attributes does a neurosurgeon need? First and foremost he needs to be able to work for a sustained period of time maintaining patience and calmness even in the face of difficulties. An observer may have heard me mutter 'discretion is the better part of valour' yet at other times 'luck favours the bold'. How does one know (and teach) whether to be bold or to have discretion?

Judgement, knowledge, and experience are your guides.

One needs manual dexterity but above all one needs judgement. Just because an operation can be done does not mean it should be done. In these days of wondrous MRI (Magnetic Resonance Imaging) and CT (Computer Tomographic) scans there is still need for judgement.

Perhaps the most difficult thing for a surgeon to do is to terminate an operation once started. The difficulty is psychological because the patient, the relatives, and the theatre staff are all expecting the operation to be done. However if unexpected difficulties arise and it is apparent that one is going to do more harm than good then one must stop the operation. One can always go back another day but if one has the courage and judgement to stop then to paraphrase Kipling, 'you have become a man, my son', or more prosaically the surgeon has acquired mature judgement.

These days one can also use the 'gamma knife' or 'proton beam therapy' to irradiate that last difficult remaining tumour stuck to vital structures, such as major arteries, nerves, or the brain stem. These forms of irradiation can be precisely focussed thus sparing the adjacent brain. It is an important advance and is best used for that dangerous last remaining 'nubbin' of tumour, having already removed the majority of the (benign) tumour. Removing this last little fragment of tumour is often the most difficult and dangerous part of the operation. Efforts to remove it have, sadly, too often converted what was going to be a successful operation into a disaster. Judgement yet again is needed.

Most of the brain operations I did lasted no more than 4 or 5 hours. One lasted 20 hours. This patient had a tangle of abnormal blood vessels in the brain. Once I had started this sort of operation, one cannot stop until the tangle is out and the bleeding stops. The patient made a good recovery but nowadays one would treat this abnormality differently and ask a radiologist to inject 'superglue' into these abnormal vessels before surgery. In general the brain does not like being exposed to fresh air and a bright light for more than about 6 hours. Any operation lasting longer should not perhaps be embarked upon without very

serious consideration.

The neurosurgeon must be able to communicate with patients and also with the surgical and nursing staff. Surgeons are sometimes remiss at this especially in these days of scans which may immediately show the answer thus apparently precluding the need to spend much time with the patient. But the abnormality shown on the scan may not be the cause of the patient's symptoms. The only way to know if symptoms and scans match up is to take a 'history', that is to say, talk and find out which symptoms are bothering him or her. Only then can one ascertain if these symptoms and abnormalities found on examination ('signs'), are indeed caused by the abnormality seen on the scan. There is thus a real danger of treating, especially with people with back problems, scans and not patients. That is very bad news and the reason why many patients fail to be relieved of the pain after an operation; an operation that probably should not have been done.

One needs patience and empathy. Patients will know if you are not paying full attention to them. He or she needs to trust the surgeon and the only way to gain this is to spend time talking and examining. I have always tried to give simple but clear explanations. This engenders trust. Possibly being dyslexic has encouraged me not to be too discursive.

Which is the sole principle I embrace? It is the KISS principle, that is to say, 'Keep It Simple and Safe'. By simplicity I mean clarity of thought. I have often noticed when interviewing candidates for research grants that the candidate who really knows the subject is the one who can make his research understandable to me or a first year medical student. Those who have not thought enough about their project try to impress by making their work complicated and, for me anyway, incomprehensible.

Principles in general are too rigid and inflexible. I become worried when I hear someone is doing something for the principle of the thing. People employ lawyers to sue for the principle of the thing. Lawyers themselves particularly love people to have principles. I wonder why?

In general I much prefer rules which can be bent broken or even replaced. These rules are much less rigid, more adaptable, and delightfully dyslexic that is to say, 'disruptive'.

An important task for the surgeon is to obtain consent to do an operation. The surgeon needs to explain what is wrong as clearly as possible. He or she needs to explain what risks there are from doing the operation or indeed from not doing it. One must also describe the relative chances of any complications and indeed success. A small risk of a devastating complication must be discussed as well as the more common risks.

I feel strongly that everyone is in charge of their own body. I never ever persuade anyone to have an operation if they do not want one. That remains the case even if I personally feel that there are compelling reasons to having an operation. I never say, 'if I was you, I would have the operation'. When asked if I would have the operation I refuse to answer saying that, 'I am not you'. I would never tell anyone that they might land up in a wheel chair if they do not have this or that spinal operation. Amazingly this is not infrequently said by some surgeons, especially it seems, orthopaedic surgeons. I do not know why they tell people that they might land up in a wheel chair but it does seem very unwise. I feel such a statement is not only usually untrue but also exerts excessive pressure on somebody to have an operation.

I remember having to write a report about a man who had such a severe kyphosis (forward bend) of his spine that he was bent forward to a right angle. He could only look down and such patients often use an angled mirror to allow them to look ahead. A passing nurse in the street stopped him to say she worked in an orthopaedic spinal unit which could correct this very distressing spinal curvature. He had the operation.

Very sadly after the operation he was completely paralysed.

It is better to allow somebody to seek help when he or she feels that the symptoms have become so intrusive that something has to be done. Only the person concerned knows when that time has come. It is different for everybody.

Perhaps the most difficult job for a neurosurgeon is to see somebody each day who has not done well after an operation. It is too easy to walk past the door of the room and I know some surgeons, unfortunately, who tend to do that. But to offer encouragement compassion and empathy is essential, although emotionally draining for the surgeon. In my opinion to be able to offer and sustain such emotional support is a sign of a good surgeon and doctor. What goes on at the bedside is just as important, if not more important, than what passes in the operating theatre.

Most people, including indeed other doctors not working in neurosurgery, do not realise the powers of recovery of the brain. As a rough rule, 70 percent of recovery occurs during the first 6 months while the remaining recovery that is going to take place, happens over a further 18 months.

Let me tell you about my friend and colleague, Peter. He was a consultant paediatric cardiologist. His job was to insert tiny catheters (tubes) into tiny babies in order to assess the babies suitability for heart surgery. Peter suffered a devastating bleed into the left frontal lobe of his brain. He was paralysed down the right side of his body and could not speak because the 'speech centre' is situated in the left frontal lobe of the brain in right handed people. The cause of this bleed in this middle aged person was an 'arterio-venous malformation'. This was an abnormality he was probably born with and is due to an artery feeding directly into a vein which becomes elongated and tortuous like a bunch of varicose veins one occasionally sees on the back of legs. These can rupture at any time of life.

I operated on Peter within a few hours of the bleed and removed both the large blood clot as well as the malformation in order to prevent this stroke happening again. He made an excellent recovery, clearly much to his surprise. His power of speech returned as did the use of the right arm and leg. He eventually got back to work inserting tiny catheters into tiny babies. Yet Peter told me that in the immediate post operative period he saved up his sleeping tablets in order to commit suicide. So a clever, talented paediatric cardiologist did not realise the

considerable powers of recovery of the brain. This shows how compartmentalised doctors have become. We know more and more about less and less. This is called 'specialisation'. This ignorance is common and that is why a good neurosurgeon must be prepared to encourage and guide any patient during the post operative period. Being a neurosurgeon is not just about doing operations.

A neurosurgeon needs to be passionate about his subject. 'Can an operation be done better?' must be a constant refrain. Yet I have seen surgeons who never try anything new and do the same operations in the same way they were trained to do. The neurosurgeon needs to be self critical and honest. He or she needs to love the art of neurology which is the art of 'taking a history' from the patient and relatives as well as the skill or art of carrying out a careful neurological examination. Sadly it is often thought that these aspects are not needed in these days of scans but if omitted the surgeon will land up treating scans not patients; once again, a recipe for disaster.

Nowadays young doctors have to choose a specialty soon after they have qualified. I first became a doctor, then I did several years of general surgery, then became a neurologist and finally a neurosurgeon. Furthermore I was able to perform all aspects of neurosurgery when I became a consultant.

Today neurosurgeons are trained in a relatively small area of neurosurgery which limits their repertoire when they become consultants. I can see the logic of this from the economic point of view, but it must be somewhat stifling to do such a small range of operations in one's professional life. I think a broad knowledge of one's subject can only be for the good.

Françoise illustrates this well.

Françoise, aged 10, was referred to me from Cameroon. She had been shot. The bullet entered the left side of her brain. I operated and removed this large bullet. She made a good recovery except a few days later she started to have a swinging temperature. At that time I had an Egyptian senior house officer. I asked him if he, a doctor from the African continent, thought that she might have malaria.

He was adamant that she did not. I was less convinced and persuaded him ('just for me') to send off a blood smear to test for malaria. She did in fact have malaria. Françoise taught me that operations can light up previously acquired, but dormant, malaria.

Indeed I had another similar patient, this time from the UK, who again developed malaria follow an operation I performed on his trigeminal nerve for the terrible pain called trigeminal neuralgia. He had travelled abroad a lot as part of his job but did not recall ever having being diagnosed as having malaria. I mention these two patients to emphasise the need for a neurosurgeon to have a broad knowledge of medicine as well as a deep knowledge of neurosurgery.

I do not claim to have or to have had all the attributes that I have described. I can only tell my own story. I will tell this story interspersed with the stories of some of my patients to allow the reader to understand why we neurosurgeons challenge ourselves to tread this sometimes stoney and tortuous path. Some of these stories have happy endings. But some have unhappy endings. This, I fear, is the story of neurosurgery.

Chapter 2

EARLY LIFE

There were two things in my early life that perhaps conferred some advantage to my subsequent neurosurgical career. The first is that we were a family of manual workers. In fact many members of my family were skilled manual workers. My great great grandfather, George Adams was a renowned maker of Victorian flatware silver which is still collected by those interested in solid silver. Sadly his firm went bankrupt when stainless steel was invented in Sheffield. Another forebear was a clockmaker—FB Adams. He made beautiful carriage clocks of outstanding beauty and with amazing technical expertise. Most of my more recent family were engineers either marine or civil. My paternal grandfather and my father were marine engineers. My grandfather and two of my uncles on my mother's side were civil engineers. Also my mother was a wonderful seamstress and embroiderer.

My great grandfather on my father's mother's side opened a shop in Newcastle. He was called 'Binns'. He was a Quaker and a good shopkeeper and it became in time a department store called 'Binns of Newcastle' and later of the North East. I only mention this to explain that having failed the 11 plus exam, my father could just about afford to send me off to boarding school, thanks to the Binns shop. Binns shops have sadly succumbed to the internet age.

There is debate whether or not one can inherit acquired skills and attributes –is it nature or nurture? Does the blacksmith's son have large muscles because his father has developed large muscles? Perhaps acquisition of acquired characteristics known as 'epigenetics' is true. I do not know whether or not it is both nature (inherited) and nurture (environmental) that confer skill. All I do

know is that I personally found the technical aspect of operating enjoyable and indeed free from stress.

I was lucky because I have seen many surgeons who have found this aspect of the work to be the most stressful. I remember one surgeon, a truly nice, decent person, called John . He was awarded the Military Cross for bravery during world war 2. Reputedly he often said a prayerful prayer before making an incision. 'Dear God please help me to do this operation successfully'. Unfortunately he had a somewhat disrespectful registrar (that is a junior surgeon in training) who said behind his surgical mask in a deep voice 'No, I will not help you'! Needless to say this trainee failed to get a job in the teaching hospital and was banished to a peripheral hospital but he at least gave the rest of us some amusement. In general appealing for the Almighty's help preoperatively does not go down well in an operating theatre although there may be calls for such help in a more frenzied and less prayerful fashion at some point of the procedure.

The second thing was that I failed the 11 plus exam. My primary school headmaster, called Mr Savage, thought I was very thick and unintelligent. Mr Savage was tall and intimidating. He drove an open top sports car into which he also managed to squeeze a rather imposing wife. He did not believe in being 'touchy-feely'. Indeed the only feeling done was with the end of a wooden springy cane. I was beaten 19 times at this school, with trousers down, in the confines of his study. This was normal practice and these beatings all seemed to be for very minor offences. Perhaps he thought beating might improve my ability to spell.

I do remember feeling sorry for a boy called Peter. His mother had unwisely sewn underpants into his games trousers in order to provide some additional warmth. These were discovered and paraded for all to see by Mr Savage during a school assembly. I suppose it was a warning to other mothers.

Mr Savage thought that I was a troublemaker and ascribed complaints from his neighbours about his pupils' behaviour, to me personally because I also lived

near the school. He managed to convince my father that his only son was exceptionally stupid.

There were however two aspects, indeed only two aspects, of the school which I enjoyed. There was a very old lorry which was used to collect the grass cuttings and the twelve year old boys were taught to drive this vehicle and were awarded 'school' driving licences. So despite our tender years we learnt to start steer change gear and stop! The second benefit was that I was taught to do carpentry and indeed made a tuck box which survives to this day.

My father decided to teach me maths and this was done by stick rather than by carrot. My mother used to hide behind the door tearing her tender heart out at hearing my tears. However the carrot came into its own during Saturday morning school during my last year. There was a monetary reward at this school for the best Saturday morning maths tests. Then I was grateful to my father for his tuition.

At that school I enjoyed the holiday work which often resulted in my getting a 'holiday' prize. Invariably one had to make a map of a particular country and the neatest map won the prize. I believe I became rather good at making neat diagrams.

I was awarded a gold star just once during the term time and my over exuberant celebration resulted in the gold star being removed within a few moments of it being awarded by Miss Meek, the geography teacher. Miss Meek was red haired, tall, thin, and languid. I never trusted a lady teacher after Miss Meek. It would have been delightfully ironic if Miss Meek had married Joe Savage, the headmaster's son, but this much anticipated event did not come to pass and Miss Meek remained unmarried all her life while Joe Savage replaced his father as headmaster.

This aversion to and distrust of lady teachers resulted in my being expelled from the boy cubs; I do remember feeling that it was very wrong that we had a cub mistress rather than a cub master so I probably deserved my expulsion for expressing this view.

I now know that dyslexia runs in families. Looking back my mother must have been very dyslexic. She was removed from her school, Birkenhead Grammar School, because she had a 'nervous breakdown' which is what I presume dyslexia was then labelled as. However she was a wonderful seamstress and made all our clothes and curtains during the war. She was also a particularly talented painter, pianist, milliner, gardener, and cook. She indeed had good manual skills. She also had good social skills and could put people at ease in any situation. Her spelling remained difficult all her life and, despite strenuous efforts, she never managed to learn to speak French fluently. Nor have I despite making tediously persistent efforts.

My mother had one other attribute which was that she was unfailingly optimistic. I am extremely pleased that she passed this optimism onto me. Perhaps this went with the dyslexic gene; if so, it not only helped coping with dyslexia but it was also very helpful coping with a neurosurgical career.

I did not learn to read until I was 8 or 9. Eventually I did read for pleasure but never more than 'Just William', 'Biggles', and the Beano or Dan Dare comics. It was when I moved to my secondary school that I found a solution to my word difficulty. I 'found' chemistry. I also found that if I (and it had to be myself) made a diagram summarising the lesson then I could remember it. Indeed I could 'see' it and so remember it. This required extra work after the lesson to read around the subject and so construct a diagram. I realised that I had a visual memory and this was the breakthrough. I could see and remember and understand my own diagram but words, especially poetry--were a nightmare for me and have remained so all my life. Using diagrams and the understanding gained by making my diagram, I found that instead of coming bottom of the class, I started to come top. Indeed rather satisfying.

Dyslexics often have a poor word memory and I was no exception. I found using a pocket notebook very helpful so that I could list bullet points and learn these by visualizing the page rather than the words. Having a pocket book meant I could revise at any spare moment and this taught me efficient time management.

Languages were impossible but I passed latin by one mark which was, in those days, essential for those wishing to do medicine. French defied me until I retired when I decided I would try to 'beat' this language.

I did physics, chemistry, and biology and was able to get to Pembroke College, Cambridge to do 'Natural Sciences' which was the first stage of becoming a doctor. I took what was called the '1st MB' (First Batchelor of Medicine) exam and was required to dissect a poor earthworm. I remember thinking my whole career depended on this dissection. An earthworm's gut is extremely tortuous. When I think how difficult it is to get into Cambridge these days to do any subject yet alone medicine, I feel more than a little guilty getting in largely on the recommendation of my science teacher who had done his PhD at Pembroke. Possibly the earthworm dissection was also a rather good method of assessing our manual dexterity.

I have found that many surgeons are dyslexic. But they too have no doubt an excellent visual memory. This of course means that learning anatomy is such a delight. Anatomy requires one to learn a series of pictures of the human body. But knowing the human anatomy extremely well is essential for a surgeon. Furthermore having a visual memory means one can visualise the anatomy (such as nerves and major blood vessels) on, for instance, the other 'blind' side of the brain tumour that one is gently and patiently removing from the brain. Having been told how very stupid I was when younger it was wonderfully motivating to have found a way round my 'stupidity'. It gave me great satisfaction to disprove my former primary school teachers. All children who struggle with the primary school syllabus, which is mainly 'words', should maybe learn by drawing pictures or diagrams instead. With diagrams and hard work they will succeed.

I now give a prize for the hardest working pupil at my secondary school. Not for the brightest but for the hardest worker. 'Brightness' is inherited. Those apparently lucky children who inherit a quick brain and retentive memory find school work easy. A lawyer friend of mine has noticed that they do well up to

their first year at university and then fall behind because of a failure or inability, to have learnt to work hard. Einstein said 'genius' was one percent inspiration and 99 percent perspiration. Whether or not this is true, I found that the work becomes much more interesting the more one learns and the deeper one delves into the subject.

Another boyhood hobby was making model aeroplanes out of balsa wood. I became obsessional about model making and once I had started a model I found it extremely difficult to stop. I was amused to see that in the film of 'The King's Speech' the then young Valentine Logue was clearly a fanatical model maker. His father—speech therapist to King George 6 ---called the teenage Valentine, 'the doctor' so he had clearly decided to become a doctor while still quite young. In fact Valentine Logue became a greatly respected neurosurgeon at the National Hospital for Nervous Diseases and he became my chief for a year while I carried out some research there under his aegis. Perhaps model making helps manual dexterity. Some teachers of young surgeons have noticed that modern trainees have less manual dexterity than previous generations. Sewing is apparently more difficult for them. Computer gaming may help hand-eye co-ordination but this is not the same has manual dexterity.

Chapter 3

BECOMING A DOCTOR: CAMBRIDGE

The popular myth is that being a medical student entails 5 or 6 years of disrespectful fun. Not for me, nor as far as I could see, for most of my friends. Medical training is hard work, albeit satisfyingly hard work. There are a lot of facts to learn. It is done in two stages. First one learns the normal structure (anatomy) and function (physiology) of the human body then one learns about the abnormal; that is to say one learns how to make a diagnosis and how to treat somebody (the clinical part). So I went to Cambridge for 3 years to learn the normal before moving to Guys Hospital in London to learn the abnormal or to do the 'clinical' part during the next 3 years.

Going to Cambridge changed my life. Why? The most important thing I learnt there was to be sceptical and curious. We were encouraged to ask 'why' and indeed to express our own view as long as we could back this up with good reasons. I found being sceptical to be so important.

This sceptical, curious attitude prevented me making mistakes on many occasions in later life. Instead of believing the radiologist's report on a scan or Xray I would insist on seeing the scan or Xray myself. Sometimes the report was incorrect. Radiologists were extremely defensive when their reports were challenged. No doubt they thought I was being disruptive but I do remember some reports being torn off X Ray folders and replaced by revised reports after our discussions! I had had of course the advantage of having seen the patient so I knew where to focus my attention when examining the pictures. Also I had to

understand the anatomy shown by the scans and X-Rays before operating or advising an operation so I became fairly expert at examining the scans and X-Rays.

I believe that this by now well embedded questioning attitude has allowed me to make some improvements and indeed, even advances, in neurosurgery in my own career. I will mention these later.

However this questioning attitude did not endear us to the registrars (junior doctors) who taught us when we arrived at Guys. 'It is because we say it is', was often the answer we received. There were four memorable registrars not all memorable for the right reasons. Robert, left wing by repute, changed sides, married advantageously, became a Professor and Lord after suggesting to Mrs Thatcher that he could sort out the NHS. He tried but he could not. Indeed who can? But he really did appear to dislike us and seemingly did not bother to hide it. Another, John, reputedly with latin blood in him, stabbed a driver on the Kingston bypass; he happened to have a scalpel available and became infamous for being involved in this dramatic and early episode of road rage. The third, Paddy Boulter failed his pre war exams at Guys, was expelled but then was allowed back after the war. He was a wonderful teacher and later became a much loved and respected Professor of Surgery at Guilford. Apart from surgery he was passionate about climbing mountains. The fourth, Randy , was tall, dark and handsome. He had a winning smile with very white teeth, unusually so in those days. While a registrar he was happy to be called, 'Randy'. When he became a consultant at Guys he announced that he was to be called, 'Randolph' from then on.

It seems that it is difficult for doctors of all ranks and seniority to say, 'I don't know'. Perhaps doctors feel they must know everything and to achieve this they often manufacture an explanation of very doubtful veracity. But of course there are many unknowns in medicine and by expressing ignorance one is at least offering a challenge to continue to question, to think and maybe even to find out the answer. I learnt that honesty, curiosity and questioning are desirable traits

for any student of medicine to have. Being sceptical and curious does appear to be 'disruptive' especially if the teacher is bereft of confidence.

When I went to Cambridge in 1957 I had not done the obligatory 2 years National Service. All the other students had done National Service and so were 2 years older. Medical students were allowed to defer National Service until they were medically qualified and then do it as a doctor. This 2 year age difference does not sound much now but at the time it seemed enormous particularly as the others had often been posted abroad. They considered themselves to be men of the world compared with us, 'fresh out of school', medical students. In fact National Service had been abolished by the time I qualified.

At Cambridge we were taught by a series of lectures and practicals arranged by the University but also by 'supervisions' (called tutorials at Oxford) arranged by our own College. The supervisions consisted of about 3 students meeting with one teacher so it was an intensive personal interaction between student and teacher. This remains the bedrock of Oxbridge teaching. It is expensive for the Colleges to provide but it means there is no place to hide for the student. The lectures were in the morning while part of each afternoon was taken up by going to the dissecting room.

Some lectures are still memorable. Professor Hodgkin, a Nobel prize winner, gave an outstandingly clear lecture on how nerves work. Giles Brindley once produced a bowl of water which he placed in the corner of the lecture theatre. He then proceeded to do a handstand in front of 300 medical students and drink from the bowl in order to show how we humans can swallow water 'uphill' rather like a horse.

The dissecting room consisted of about 50 marble slabs on which human bodies, injected with formalin, lay for us to dissect. I think we were all shocked at this sight most of us having never seen a dead body before yet alone fifty. The acrid smell of formalin added to this rather extraordinary sight. The initial view and smell of the dissecting room was enough to convince some new students that medicine was not for them but at least it was better to find this out sooner than

later. I remember 3 or 4 students changing subjects rather rapidly. I think all of us retain that vivid initial view that assaulted our senses and emotions. I certainly do. On the whole we treated these bodies with great respect and we were very aware of our gratitude to those people who decided to donate their bodies after death. There were regrettably some who had to be reminded of their gratitude. Actually this short lived disrespect really represented their difficulty coping with the sight of death. A sort of gallows humour. The modern approach of using computer generated images is no substitute to the discipline of doing a dissection oneself.

Our dissections were supervised by young doctors wishing to become surgeons, so spending a year teaching anatomy while working for their primary FRCS (Fellow of the Royal College of Surgeons) exam, an exam that requires a very complete knowledge of anatomy.

My anatomy supervisor at Pembroke was Vernon Pennell a recently retired senior surgeon at Addenbrookes Hospital. He was a short, rotund and balding. A man who indeed put the fear of God into us. Reputedly people returning from the war with decorations for bravery found Vernon's supervisions as daunting as anything they had previously experienced. But he was a wonderful teacher of anatomy. He used a series of simple diagrams which of course suited my dyslexic brain. 'Buy an old edition of Greys Anatomy to study the pictures', was his advice but, 'do not bother read it'. Vernon believed that anatomy should be learnt by clear simple diagrams which served as 'hooks' onto which we should hang our anatomical knowledge. I agree with him absolutely; and his teaching was excellent. Perhaps he too was dyslexic. It was definitely Socratic teaching at its most formidable but we certainly worked hard in order to avoid Vernon's invective and allusions to our ignorance and stupidity. Only Adrian Hobart, Vernon's favourite, was spared his wrath but the rest of us learnt our anatomy rather better than Adrian!

Looking back we not only learnt anatomy but a surgical attitude. Most surgeons see things in terms of 'black' or 'white'. 'Grey', in any shade, is not usually

allowed to interfere with the surgical thought process. I have often wondered if this was something we were born with or something we acquired but I think on the whole we acquired it by being taught by people like Vernon Pennell. For him it was only the very blackest black or whitest white that counted. He used to teach us in his rooms just above the Porter's Lodge at Pembroke which was near a road junction with the traffic invariably controlled by a policeman. On one occasion he asked us, 'what was above the neck'? We took rather too much time wondering what on earth he wanted. In a show of irritation he flung open the window and asked the policeman on point duty the same question. 'Me 'ead Sir', came the answer which precipitated a stream of invective about our stupidity and ignorance and how much more superior the policeman was in all ways. I did just wonder if this was an annual performance and that the policeman on duty had been forewarned. Anyway we learnt to think the obvious and not to try to be too clever. Indeed I became a staunch advocate of the KISS principle--'Keep It Simple and Safe' probably as a result of Vernon's supervisions. This is the only principle I believe in.

Our physiology supervisions were taken by a tall, quiet, kind, and gentle physiologist, Bill Keatinge, who later became a professor at The London Hospital Medical School. His research involved dipping 'volunteer' sailors into cold water; he found that hypothermia was the chief cause of death by drowning and his recommendations on adequate clothing for naval ratings was a great advance.

During my first term I developed a red, swollen right ankle and my very good GP (general practitioner) sent me into Addenbrookes Hospital with a provisional diagnosis of rheumatic fever. This illness has become rare. It affects the joints and sometimes the heart valves. I spent 6 weeks in the old Addenbrookes swallowing aspirin until I had ringing in the ears. I had to take enough aspirin until this happened. This was then the standard treatment but I have no idea why it was meant to work. Maybe it did not.

However being in hospital as a patient was an amazing educational experience

for me. I remember that the gentleman in the next bed defied all attempts at diagnosis. But he had confided to me that his wife had just died and he had lost the will to live. He did indeed die without the consultant physician and his team ever making a diagnosis. It taught me the power of the mind over matter. Death from a broken heart is increasingly recognised and accepted now days.

Another patient, a delightful elderly man used to whisper, 'CYK' whenever a nurse did anything for him. It was only when he was discharged from hospital that he revealed that CYK meant, 'consider yourself kissed'!

My stay taught me what it was like to be a patient. This was something I never forgot and I think it made me a better doctor than I would have otherwise been. My predecessor at Oxford, Sir Hugh Cairns, once wrote that, 'a surgeon should not be too proud to rearrange a patient's pillows.' Quite so.

Unbeknown to me my parents had been told by the doctors at the hospital that I was unlikely to live longer than the age of 40 or so. There in lies another lesson concerning the dangers of trying to predict the future.

The consultant who looked after me was Dr Dick. He was short in stature but grand in allure. He would peer at me through half moon glasses. He used to swing his stethoscope incessantly while waiting for his team to supply him with answers to his questions. Ward rounds were done in absolute silence. There were no televisions to cause sound pollution. Patients were ordered back to bed before the round started and all conversation ceased.

The nurses were wonderful of course. They were dressed in starched white uniforms and wore starched white hats. They all seemed very pretty which was either a reflection of my youth or that being a university city full of bright young men, truly intelligent and pretty girls were attracted to work there.

While at Cambridge I found a book by Ranson and Clark on the anatomy of the nervous system. In the back of this book were a series of 'case studies' showing how a basic knowledge of anatomy of the brain and spinal cord would allow a fairly precise location of the disorder affecting the patient. I still remember being very excited by this. I knew I wanted to be surgeon but this book made me

realise that my future career had to be that of a neurosurgeon. This was very motivating and induced me to study anatomy, especially neuroanatomy of the brain, even more intensively than ever.

There were four other medical undergraduates in my year at Pembroke. I got to know them well. David, from Berkshire, later Wolverhampton; John Hunter, from Scotland; Chris Hall from Colchester and Adrian Hobart. In fact John's father was a GP in Spalding, Lincolnshire. His Scottish accent was such that I had great difficulty understanding him. I have always wondered how his patients managed. Adrian was older than the rest of us. He was tall, rather introverted and kept himself to himself. He boxed for Cambridge in the heavy weight division. The psychology department were anxious to assess the (bad) affects of boxing so would assess Adrian's memory and other functions before and after his boxing matches. Adrian made sure that the results were better after his boxing bouts rather than worse! Adrian was definitely Vernon's favourite. He eventually emigrated to Canada and I lost touch with him. David, who followed me to Guys, became an anaesthetist, while John Hunter, a future professor of dermatology at Edinburgh, and Chris Hall, a future GP and cycling Mayor of Colchester, have remained life long friends perhaps a friendship moulded and sealed in the cauldron of Vernon's supervisions.

It was not all work at Cambridge; I found a daily dose of sport (hockey, squash, tennis and the occasional punting along 'the backs') maintained a sense of well being and even, I felt, allowed my dyslexic brain to work better. I did work hard but it did not feel like hard work especially as I had discovered something relevant to my future career.

We were of course allowed to roam around Cambridge. But on leaving the College we had to wear our gowns so we could be identified. We had to be back by 10.30 pm. Discipline was imposed by a senior Procter (a don) who would parade around Cambridge armed with two 'bulldogs' who were in fact two College porters. Anyone out after 10.30 pm would be pursued by the porters. They could be heard to mutter, 'hurry up Sir, I am catching you up'. The

famous runner from Oxford, Dr Roger Bannister, once paid a visit to Cambridge and was persuaded to incite a race with the bulldogs who found they had joined in an exhausting, lengthy, and ultimately futile race around Cambridge.

I got to know Roger Bannister reasonably well when he retired to Oxford. At one time we lived on the same road. Like many talented people he was delightfully modest. His wife was very artistic. His artist-daughter painted my 'leaving portrait' which is probably hidden away out of sight and out of mind, somewhere in the Oxford department of neurosurgery.

The final exams at Cambridge resulted in obtaining the 'Natural Science Tripos' and Batchelor of Arts degree. The 'BA' could be promoted to 'MA' Cantab. (Master of Arts of Cambridge) after a delay of 3 years and payment of £5. I do not remember much about the exams except for two things. One question in the anatomy exam concerned the functioning of the cerebellum or balancing part of the brain. I had just read about the comparative anatomy of the cerebellum so took great delight in describing the difference between this structure in aquatic animals such as dolphins and seals compared with man who required skilled manual dexterity rather than sinuous body movement. My anatomy viva or oral exam, concentrated on the need for a 'carrying angle' that the forearm makes with the upper arm. The term 'carrying angle' is fairly self explanatory if one looks at somebody's arm while carrying a basket.

After 3 years it was time to do the clinical part of my training. This we could not do at Cambridge because at that time there was no clinical medical school at Addenbrookes. Most of us therefore went to a London Medical school. I applied to go to the Middlesex Hospital and went for an interview. After a while a grey haired lady called me in, 'for a chat'. She was in her 60s, with her grey hair neatly coiled in a bun on top of her head. She looked like everyone's favourite spinster aunt. She eventually asked me if I had any questions. During this time I had been silently rehearsing my interview questions with Professor Sir Brian Windeyer, the Dean of the Middlesex Hospital medical school. I asked, 'when is

my interview going to happen'. It had apparently just happened. Furthermore I had 'had it' in both ways and was rejected. Apparently the Dean's secretary did all the interviewing.

I then went to Guys Hospital where I was interviewed by the Dean, Dr Jock Houston, and a panel of impressive looking consultants sitting round a shiny mahogany table. I was accepted. A few years later I became Dr Houston's house physician together with Dr Tony Roberts who had been at Oxford. We found that we had both been rejected by the Middlesex Hospital despite both of us getting first class degrees at our respective universities. Jock Houston roared with laughter and said it was well known the Dean's secretary did all the interviewing at the Middlesex Hospital.

This rejection did not bother me too much but generally I have always learnt much more by failing than by succeeding. In later years an operation that had not gone as well as expected or which had not produced a satisfactory result provoked much more thought and self criticism, usually in the twilight hours of the night, than an operation that had been a great success.

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Chapter 4.

LIFE IN LONDON .

I did not enjoy London. But I did have a wonderful education at Guys. I found life in London very difficult after Cambridge. I found a room in Balham which was quite a distance from Guys Hospital. In those days Balham did not have a particularly salubrious reputation. I had a very battered car which I intended to use in order to commute to Guys. It broke down on the first attempt. I resorted to public transport after that and I sold the car (with a new battery) for £50.
I found clinical work was a mixture of excitement and fear. The excitement arose from the feeling that I was at last doing clinical work and becoming a proper doctor. The fear came from the realisation that I knew nothing about patients or diseases. We did initially have a short, 6 week, course with Dr George Scott on how to take 'a history' and examine the patient. After that we were thrown into the deep end going onto the wards to 'clerk in' patients. There were lectures but most of the teaching was done by the student clerking a patient then presenting the findings to a consultant or registrar, a registrar being a consultant in training. 'Presenting a patient', entailed reciting the story or history of somebody's's illness and then describing the physical signs one had found on examination while the rest of us all stood around the bed. This is 'bedside teaching', much beloved in London, but I believe has been long since replaced by systematic lectures in Scotland. The student was cross examined by the registrar or consultant and then followed a discussion about the 'differential

diagnosis' leading to the final diagnosis. Lastly the available treatment options were considered. All this was done at the bedside around the bemused patient. The Socratic method was used which I suppose to put it bluntly was designed to put the student on the spot and to not spare his feelings. Effective but somewhat brutal.

There were no systematic lectures covering what one needed to know. Consequently I used the evenings and weekends to work my way through textbooks of medicine and surgery.

The students did a week 'on call' every few weeks. This meant living in the hospital student accommodation and seeing every emergency that was admitted either on the surgical or medical side. The senior registrar also lived in the hospital for his (they were all male) week on call. Much of the evening or night time involved presenting patients to the registrar and being taught about those who had been admitted and their medical or surgical problems. Of course we went into theatre to watch or assist at the emergency operations. This was immensely valuable training.

However during my first week on call I found that I had to stand and watch an operation that went on all night. The next morning I had swollen ankles. I saw the in-house doctor and the concern was that I had developed heart failure subsequent to my alleged rheumatic fever. I was admitted to the ward for a few days and then released. Looking back I think the swollen ankles reflected no more than a lack of standing up for any length of time in my life, certainly not all night, prior to that time. It never happened again but one good outcome from my point of view was that it was decided I should live in the nearby Guys student hostel down Long Lane. I had only a short walk to the hospital for the rest of my student days.

Actually I am not at all sure that I ever had rheumatic fever and I do wonder in hindsight if my red swollen right ankle was not my first attack of gout which certainly affected me later in life. I have on many occasions given thanks to the doctor who introduced Allopurinol, a drug which entirely prevents attacks of

gout, if taken regularly. Sir George Pickering, the then 'Regius' (senior) professor of medicine at Oxford used to say that only the most intelligent get gout. Not surprisingly it transpired that Sir George had gout.

Looking back the area around London Bridge in 1960 was surrounded by a good deal of poverty. Yet for the most part the inhabitants of the 'Borough' were decent, usually honest, and sturdily uncomplaining. At least they put up with us medical students. In fact the truth is that I saw very little of London or even of the 'Borough' despite spending 6 years or more of my life there. My life then was one of incarceration in Guys.

I did not have much money as a student and certainly not enough to go to the 'hot' spots of London. In fact I cannot remember ever going into central London and was entirely happy being totally immersed in the hospital life and the patients. For supper I used to frequent a small cafe near London Bridge station. Invariably I had 'chicken' curry but I do recall that on several occasions the cafe was prosecuted for serving cat meat instead of the alleged chicken. I could not tell the difference. Both tasted good.

The students had to take blood from the patients to send to the laboratory. I found this very daunting. Eventually I learnt how to the 'feel' the vein under the skin even if it was not particularly visible. So much of surgery, even taking blood, depends on learning the 'feel'. So taking blood was a good introduction to this. The needles were not the modern disposable needles but re-useable needles which were invariably blunt and occasionally bent at the tip. To minimize the patient's pain required one to enter the vein on the first attempt. This was not always easy to do especially with large overweight patients. It was a great relief to master how to do this but in a way 'taking blood' was the first surgical hurdle to surmount.

There was a very fair method of student assessment at Guys. We were attached to each 'firm' (either medical or surgical) for 3 months. At the end of the 3 months we were given marks by both the consultant and senior registrar for attendance and also for knowledge. After 3 years the students were ranked

according to their marks. The students with the top marks were allowed to choose which consultant's firm to join as a houseman. Competition was very fierce for the best jobs.

We also were allocated time in the specialties such as dermatology, psychiatry, paediatrics, anaesthetics, and infectious diseases. The latter was held in a 'fever hospital' and it was there that I caught german measles whilst a medical student. I remember being totally confused by dermatology (skin diseases) but fortunately this did not prove a barrier to becoming a neurosurgeon.

Somehow I avoided doing any psychiatry. I think I had taken a holiday when I should have done the two weeks of psychiatry with Dr Stafford-Clark. This reflects the rather short time allocated to this subject in those days. I got the worst mark in anaesthetics which I did feel was rather unfair. I am not at all sure the anaesthetist even knew who I was. However it removed any possible desire to become an anaesthetist which in fact I cannot ever remember having considered.

One could go on any ward round one wished. I remember being very impressed witnessing Lord Brock, the pioneering cardiac surgeon, analysing a patient on a ward round. He went back to basics and using simple but logical argument he built up a diagnosis and the reason for the surgical treatment. The patients offered this pioneering surgery were invariably very sick. Not surprising therefore that the mortality was high.

It was a tough specialty to follow. I was never tempted to become a cardiac surgeon mainly because I could never hear the heart sounds. I had had a lot of otitis media (middle ear infection) as a child and was consequently fairly deaf in my left ear. I remember my mother being incensed because Mr Savage made me box as a young boy with pus streaming out of my left ear. My father muttered on this occasion, 'savage by nature and savage by name'!

One memorable physician was Maurice. Intellectual and gentle. There is a tendency for keen students to show off their knowledge on ward rounds and suggest the most obscure diagnoses. One such student, Donald, was guided to the

window of the ward by Maurice and asked, 'what sort of birds can you see?' He correctly answered, 'pigeons'. 'Exactly', replied Maurice, 'so when I ask a question tell me first about pigeons rather than about canaries'. I believe Donald became a neurologist in Canada, while his older brother Roy, later Sir Roy, became a very well regarded transplant surgeon, professor, and amateur painter.

Indeed it was rightly drummed into us that, 'common things commonly occur'. That is pigeons not canaries.

I did not gain much exposure to neurology as a student but I would go on the neurology ward rounds when I could. Dr McArdle was the senior neurologist and I later became his House Physician at the National Hospital for Nervous Diseases, called 'Queen Square' for short, for that was where it was based in central London. He was a truly amazingly dedicated neurologist and taught several generations of neurologists in the UK. Neurosurgery at Guys was based several miles away at the Maudsley Hospital which prevented any exposure to neurosurgery for any Guys students.

The general surgeons were an eclectic group. Each senior consultant surgeon had a 'firm' consisting of a junior consultant, a senior registrar, junior registrars, housemen (rarely women in those days), and of course students attached to his firm. The senior surgeon carried out a formal ward round once a week. This was followed by an equally formal tea party in the Ward Sister's office, without the students, but with the best china. Cake was provided. The Ward Sister, Jean, ran Dorcas ward with a rod of iron. She was very experienced and much respected.

Sadly the disastrous Salmon report ended this golden period of nursing. This report stated that senior and experienced nurses could only receive annual increments of pay by becoming 'nurse administrators'. Most left not wishing to walk around with a clipboard. Sheer madness because an annual increment while running a ward would have retained them as ward sisters who not only taught the nurses but also the medical students, as well as ensuring the patients

got the best possible care.

Rex Laurie was a newly appointed surgeon who did indeed look very young. He was tall and athletic looking. When he first visited the ward to see his patients he was shooed out by the Sister being told that medical students were not allowed in the ward at that time. His wife was medically qualified and, by reputation, formidable. She ran the Women Doctors Federation and did not look young for her age. This was rather unfortunately emphasised when she was asked to present the Guy's Athletic Prizes. The captain of athletics, Chris Boothby, then thanked Mr Laurie's MOTHER for presenting the prizes; not a good career move.

Rex Laurie did not want the patients that he had performed gastric surgery on to be given blood. He regarded this as a slight on his surgical skill. Consequently a ridiculous farce ensued after Mr Laurie left the operating theatre having finished the operation. The anaesthetists would suddenly produce blood from nowhere and started pumping blood back into the patient in order to preserve Mr Laurie's self esteem. Despite this sensitive self esteem Mr Laurie would often be heard to mutter, 'silly me'. But he was a good surgeon.

Such words and sentiments were never heard to pass Mr Blackburn's lips with whom Rex Laurie wrote a textbook of surgery. Guy Blackburn was a surgeon who trained at St Bartholomew's Hospital and it was said he 'had had a good war' whatever that meant. He was large and imposing, silver haired and wore the almost obligatory half moon glasses. I am sure he was a loving husband and also a loving father to his children.

Guy Blackburn unfortunately had the reputation of being one of the most difficult surgeons certainly at Guys if not in all London. He was also an examiner for the Fellowship of the Royal College of Surgeons (FRCS). One could not be surgeon in the UK without passing the 2 parts of the exam—the 'Primary' in Anatomy and Physiology, then the 'Final' in clinical surgery. These exams were also carried out in a large examination hall at Queen Square. Blackburn was the one examiner that all candidates wished to avoid. His

standard advice to failed candidates was to come back when the leaves dropped or appeared ie Autumn or Spring.

Blackburn expected his theatre ('Scrub') nurse to know, without being told, what instrument he wanted. The wrong one was held up and ceremoniously dropped on the floor. I saw him drop every instrument on the floor until there were no more available instruments in the tray of surgical instruments. This resulted in the theatre nurse running out in tears; completely unacceptable behaviour.

On another occasion I saw him mistakenly join the small bowel to the large bowel. His response was to say, 'what an interesting complication, I have never seen that done before'. Perhaps some would say this was rather admirable chutzpah. I think I would have perhaps reacted differently; actually I am not sure what would have been the best response in those rather embarrassing circumstances. At least Guy Blackburn was being openly honest except one could quibble about him using the word 'complication' when 'mistake' would have been perhaps more appropriate.

Nils Eckoff was a plastic surgeon. He came from Scandinavia. He was large, and I suppose some would say, 'cuddly'. On arrival at Guys he was asked what cake he would like during the formal 'after teaching round' tea party in Sister's office. He thought for awhile and said, 'little cakes with pink icing would be very nice'. Consequently he had little cakes with pink icing every week for the rest of his career rather to his chagrin. I never worked on his 'firm'.

Hedley Atkins was the Professor of Surgery. He was ambitious and openly said he could never become President of the Royal College of Surgeons (a gateway to a knighthood) until Brock, the cardiac surgeon, had become President. He did eventually get his presidency and knighthood. He was a breast surgeon. He was known as 'Deadly Hedley' by the students not because of his personality or surgical results but because 'deadly' rhymed nicely with Hedley. I was never on his 'firm'. He was the Professor of Surgery at Guys and in those days one was almost commiserated on becoming a surgical professor. Being a 'Mr' (which

meant one had passed the FRCS exam) seemed then to have more kudos and be associated with more surgical skill; probably true today.

Sam Wass was the best surgeon at Guys. He was the surgeon's surgeon. He was respected by all for his diagnostic skill and clinical judgement. To be his house surgeon was the aim of all would-be surgeons. I was lucky enough to become his house surgeon and he became my surgical mentor. Sam's approval was essential if one wanted to become a consultant at Guys. He was the surgeon other surgeons went to if they needed an opinion or operation. He taught the importance of 'surgical judgement'. Sadly judgement is not talked about enough these days but a surgeon without judgement is a menace.

Sam smoked most of the time and was once reprimanded for smoking in the operating theatre. He was able to roll a cigarette from one corner of his mouth to the other while talking; a feat which was often, but usually unsuccessfully, attempted during the Christmas play put on by the housemen at Guys.

When I was a houseman, Tony, later a professor of ophthalmology and brother of a well known actress, produced the play. It is the only time I have sung solo in public; one song that I had to sing was romantically entitled, 'the Bufo Bufo'. This happens to be the name of the toad used for pregnancy testing. I forget the title of the second song except it contained the immortal words, 'bash me black and blue'.

Sam Wass, rather short almost rotund, walked sedately around the hospital swinging a large brief case. I never saw him rush. His lectures were the best at Guys and the lecture theatre was full to overflowing. Students sat on the floor if there were no seats. Sam never used slides but just chalk and a blackboard. His lectures were a model of clarity and logic. He used to say, 'I classify' which seemed to the basis of his teaching. Actually his teaching was much more than just 'classifying'; there was a lot of clarity and logic as well.

There were two textbooks of surgery we were encouraged to use. 'Blackburn and Laurie' was available but hardly ever used. Most of us used 'Bailey and Love' which was a large book full of photos with a pale yellow cover. It was

written by various specialists concerned with different parts of the body. But there was no logic or correlation between different chapters and I found it a confusing book to try to learn from. When it was first published Sam Wass was asked to review it. Sam likened the book to the stools of a person with a bowel disorder called steatorrhea ('steato', meaning 'fatty'; 'rrhea', meaning 'flow') or malabsorption syndrome-- the stools in this condition being, 'pale, bulky and offensive'. For 'offensive', think smelly. The authors wanted to sue but the publishers thought (rightly) that the publicity would not help their sales. Rather surprisingly this book is still used.

Book reviews can be biting but also amusing: Two well known physicians at Guys wrote a textbook of medicine. They were Sir John Coneybeare and Dr William Mann, the latter being Physician to the Queen. An American reviewer did not think much of this book and ended his review rather tellingly with, 'God save the Queen'.

While a student at Guys I won a grant to go to Chicago in order to do 3 months of neurosurgery. The hospital was called the 'Research and Education' hospital of the University of Illinois in Chicago. It was in fact next door to the large 'Cook County Hospital'. The head of Department was Eric Oldberg who I believe was Harvey Cushing's last resident or trainee. Harvey Cushing was the 'father' of American neurosurgery. Originally most neurosurgery was done by general surgeons who had 'an interest' in this work. Cushing was one of the first surgeons to become a full time, specialist, neurosurgeon. He introduced a fastidious but slow technique of operating on the brain with subsequently much improved results compared with those of the part time 'general surgical neurosurgeons'.

In those days one sailed to New York which took 5 days. I went on a french boat called La Falaise. I still remember sailing into New York with the statue of Liberty emerging through the mist. A Greyhound bus took me to Chicago. The bus trip took about 18 hours as far as I remember. We had frequent stops at the Howard Johnson Guest Houses. I still recoil with horror at the thought of their

cold scrambled egg which seemed to be the default menu. This was cold, solid, and cut into rectangles.

On arrival I stayed at the Alpha Kapper Kapper fraternity house. I was spared the usual initiation ceremony which fraternity houses impose on new members.. I do remember having, there being no other option, peanut butter and apple jelly every day for breakfast for 3 months. I have avoided peanut butter ever since.

However I was treated with immense kindness and the experience was quite unlike anything I could have had at Guys as a student. I was treated like a young doctor or houseman. The senior resident was Lyle Wacaser and the next senior was John Hubbard. In the USA you join a residency programme and work up the ranks, usually over 5 years, so that during your last year you became the senior resident. The senior resident does all the routine surgery and only calls in the 'attending' (or consultant) when necessary. One 'attending' was called Oscar Sugar and he later became a very well known and respected neurosurgeon. The pathologist was called Ben Lichenstein; I can still see his eyes bulging when he wanted to emphasise a point. He taught me a great deal.

There was a certain reluctance to call in the 'attending'. I remember being rather surprised watching Lyle operating on the trigeminal nerve for neuralgia. He had not done this operation before so John Hubbard held up the operating manual for Lyle to follow. After the initial incision was done, John turned over the next page, and so on. The operation was successfully completed.

Eric Oldberg, tall and distinguished, liked to hear English spoken properly so I had to present a patient each week. Mid west American patients have, or at least had, a tendency to say, 'I wanted to lay down'. Eric Oldberg would immediately stop the patient saying, 'we have an Englishman in our presence; hens lay eggs and then lie on them. You Madam, wanted to lie down'.

He was chairman of the Chicago Philharmonic Orchestra and I was given a free seat at the Philharmonic every Friday. He very kindly invited me to his house for Thanksgiving, as well as offering me a place on his neurosurgical residency

programme after I had qualified.

Apart from clerking the patients, I watched or assisted at all the surgery. I even was helped to remove a prolapsed lumbar disc which is not an easy operation and not something I would ever let a student do in the UK.

I carried out the air encephalograms which was a standard way of investigating disorders of the brain in those days. This entailed doing a lumbar puncture and replacing the cerebrospinal fluid with air. The air went into and around the brain but to ensure satisfactory distribution of air it was necessary to somersault the patient. Somersaulting required four people to lift the patient off the table and turn them around rather akin to doing a cartwheel. One could see the skull and the air but not the actual brain with this test. This investigation is no longer needed thanks to CT and MRI scans which show in addition, the brain, tumours and blood. Scans are a great advance because air in the head induces a rather unpleasant headache quite apart from being much less informative.

I remember being very worried about what to give patients intravenously after an operation. 'A bottle of water and a bottle of salt', (saline) was the answer from Lyle. I was taken aback by seeing one patient having an operation for Parkinson's disease, with a needle deep in her brain, being asked if another X-Ray could be done but that it would cost her 25 dollars. Thank goodness for the NHS even with all its imperfections!

While I was there Lyle Wacasser, who had a private pilot's licence, took me up in a small two seater plane to show me Chicago from the air. I sat behind him and I remember all too vividly that he pointed the nose of the plane up some 45 degrees until it stalled and then flipped it on it's side. It fell like a stone before the stalled engine burst back into life. He asked me how that felt and not wishing to show anything but a stiff British upper lip I replied, 'fine'. 'Right I will do it again', which he proceeded to do. Not something I relayed home.

John Hubbard gave me two books when I left. One was a very useful book on neuroanatomy and the neurological examination. The other I have treasured all my life. It was the neurosurgery section written by Walter Dandy, for the

surgical series edited by Lewis. Walter Dandy was an inspirational neurosurgeon who carried out incredible surgery without the modern advantages of magnification and lighting. His surgery within the brain cavities (ventricles), opened my eyes to the scope of this surgery. There was mutual antagonism between himself and his erstwhile teacher, Harvey Cushing, the doyen of world neurosurgery. Cushing did not tolerate competition.

I went to Chicago in 1962 from September until December. This coincided with the Cuban missile crisis. I remember the Americans were stocking up with tinned food and buying even more guns; these were to protect themselves from their neighbours, for fear that they might take their provisions, rather than from the Russians.

My time in Chicago cemented my desire to do Neurosurgery.

The final exams were twofold. We took London exams and Cambridge exams. The London exams were LRCP (Licentiate of the Royal College of Physicians) and MRCS (Member of the Royal College of Surgeons). These exams were held at Queen Square and consisted of written papers, oral exams, and short and long 'cases'. 'Cases' meant patients , the short variety being shown patients with fairly obvious problems, while long 'cases' required one to take a history and exam the patient. Most of these latter patients had fairly static conditions and came back for their paid day out to Queen Square every 6 months. If the candidate 'connected' with patient, the patient was usually delighted to inform the candidate of the relevant symptoms and signs together with the diagnosis and treatment. It was more a test of how one got on with people—which was probably a more important index of what sort of doctor you were going to be.

We also went back to Cambridge for our final exams in order to have the University degrees of MB (Batchelor of Medicine) and B.Chir (Batchelor of Surgery , spelt Chirurgiae in latin). The exams were much the same as the London exams. For my medical 'long case' I was shown a poor man bent to a right angle from his ankylosing spondylitis. I was asked if I thought he was able to hold down a job. I answered that I thought this would be impossible. I was

wrong and he turned out to be a champion cutter of Norfolk reed, the best reed available for thatching roofs.

So armed with a BA, MB ,B.Chir, LRCP and MRCS I became a doctor with a head full of facts but very little practical skill. The later comes working as a 'houseman' which really is part—an important part—of one's training.

Chapter 5

BEING A HOUSEMAN

A doctor at last! The term houseman (a term applied to men or women) was appropriate because one was not expected to leave the hospital during this job. One did not take a holiday. One lived in the hospital which was not a burden. After 6 years one had become a proper doctor. One was being paid, albeit not much, particularly after your living expenses incurred in the hospital had been deducted. But one was no longer a down trodden student and even the Ward Sisters regarded you as a slightly important, albeit very minor, cog in the system.

The first thing one had to do was to get insurance against been sued. I joined the Medical Defence Union (MDU). When I qualified it cost £5 per year or £50 for life. Well, actually 'life' meant to the age of 70 when doctors no longer became insurable at least with the MDU. I had just £50 in my bank so I decided to blow this on the life membership. This proved to be the best financial deal of my life. I think it was the year after I qualified that life membership was abolished. The growing annual cost of MDU membership reflected the growing propensity to sue doctors and by the time I retired the annual cost for a neurosurgeon was in the region of £100,000 and even a non operating GP had to pay £8000 per year. I am sure the MDU was hoping for my early death as predicted by Addenbrookes Hospital but I am glad to say I have thwarted the MDU so far, no doubt due to my cussed disruptive personality.

But the MDU has been a wonderful support throughout my career. I remember especially consulting them over various difficult ethical dilemmas for example whether or not to give blood to the child of parents who were Jehovah's witnesses.

Would-be surgeons chose to split their 12 months as a houseman into 3 months as an 'assistant' house physician, 3 months as a casualty officer and finally 6 months as a (full) house surgeon. I was fortunate to obtain my first choice of becoming house surgeon to Sam Wass.

I learnt humility very early. I was travelling by car near Guys at night when I passed a pedestrian lying in the road having been knocked over by a taxi. I felt I should stop to help and as I got out the ambulance arrived. I proudly stated I was a doctor at Guys with the implication everything was now going to be alright. The patient was shouting abuse at the top of her voice in a fashion that only local Borough ladies can. 'You bloody bastard', was aimed at the taxi driver who had knocked her down. I fumbled around in the dark trying to be sure there were no broken bones. It was noticeable that when the ambulance backed onto the scene they were able to illuminate the area probably in more ways than one. They duly took the patient to Guy's casualty (or A and E) department. I was horrified to learn the next day that she had died of a ruptured aorta which is the major artery from the heart. In those days this was virtually impossible to diagnose and treat. Very humbling.

My time as an assistant house physician to Dr Jock Houston has faded into the mists of time except for my panic during my first weekend on call when an orthodox Jewish patient died. The family wanted the patient to be buried before the sun went down. This was not in the textbooks. I had to obtain an emergency death certificate on a Saturday afternoon. Fortunately I was able to achieve this thanks to a lot of helpful hospital colleagues.

The casualty department as it was then known, was run by Mr Patrick Clarkson. Again he had had 'a good war', like Guy Blackburn. He was very affable, rather large, invariably wearing a carnation flower in his button hole

which perhaps betrayed the fact he was a Harley Street plastic surgeon when not at Guys. Patrick Clarkson was a thoroughly nice man. There is an apocryphal story concerning Patrick discussing his fee with a private patient that wished both breasts to be enlarged. Patrick would state, 'that will cost £500'. If the patient did not blink there would be a pause and he would add, 'each'.

I found this job very daunting as anybody with anything could be carried in through the doors. In many ways we also practised 'General Practice'. The local single handed Chinese doctor, Dr Chin, shut his surgery at 6 pm. The prospective patients would collect one of the bundle of letters left outside his surgery door for the patient to take to Guy's casualty stating, 'please see and advise'. I suppose in those days the department was 'casual' allowing people to attend at all hours with any condition. That was the nearest I came to ever doing any general practice.

On a lighter note I remember one Saturday evening one of the Rolling Stones rolled in with toothache. Guys also taught dentistry so there was always a dentist on call, hence coming to Guys. I confess I did not know who the Rolling Stones were. Looking back I realise that I had lead a very monastic life working most of the available hours in order to become a doctor. During this time most of ordinary life had passed me by. Do I regret this? No. I suspect I had to work harder than most to compensate for my dyslexic brain which I always regarded to be equivalent to a Ford car rather than a Rolls Royce.

Patrick Clarkson once took me to Harley Street to assist him giving an Iranian lady more African looking nostrils. The objective was to be able to look directly into her nostrils. I have no idea why this was desirable but I gather anything goes in cosmetic surgery. This was a culture shock and I then and there decided this form of surgery was not for me, nor did I find the Harley Street way of surgical life, particularly appealing. Sadly the Clarkson family had an appalling family history of early and fatal heart attacks and Patrick was not spared this familial, genetic Damocles sword.

Becoming Sam Wass's houseman was a cause of much pride and personal

satisfaction. It was the best job in the hospital—or so I thought. In those days one was an apprentice to your master. You were expected to know all the patients. You were required to live in the hospital and to take any calls from your consultant at any time of the day or night. One was also expected to meet the consultant after he had parked his car in his allocated space in the carpark. In those days most of the consultants had Rolls Royces. The houseman would then escort 'him' around the hospital. The consultants were all male of course. How things have changed. These days consultants have no allocated parking space and have to pay a percentage of their salary in order to be able to park his or her small economical car, that is, if he or she can find an available space. And the Department of Health wonder why the profession feels denigrated and de-professionalized. As I have indicated one gives up much normal life to achieve consultant status and it is these small irritating measures imposed by management that do little to improve the regard or lack of it, that consultants often feel towards hospital managers.

I greatly admired Sam Wass. He taught me surgical judgement and much else. He had interesting patients one of whom was Maurice Lambert, the famous sculptor. I got to know Maurice Lambert fairly well and was very struck by his modesty and humility. I have since discovered that really clever people are often the most modest. I used to have lunch not infrequently with Professor Hans Krebs at my College in Oxford. He had escaped Nazi Germany in 1933 by accepting an invitation to work in the biochemistry department at Cambridge. In 1935, he moved to Sheffield later becoming the professor of biochemistry there. He discovered the "Krebs cycle'. This important 'cycle' elucidates how plants change carbon dioxide back into oxygen, a function rather vital to our existence.

Krebs retired to Oxford to be near his family and was awarded the Nobel prize in 1953. Yet I cannot recall a more delightful and modest man than Hans Krebs. Perhaps more surgeons should learn humility; their excuse---and it is a rather unconvincing excuse-- is that surgeons need self confidence. Unfortunately this

sometimes manifests itself as arrogance. There is a fine but important line between self confidence and arrogance.

Sam taught me how to talk 'with' patients not 'to' patients. One also learnt so much by 'osmosis'. I remember we had a 40 year old man in the ward with a bad stomach cancer. Sam drew the curtains round his bed and beckoned me in. He said to the relatively young man, 'the pathologist had seen some cells that they did not much like the look of and I cannot guarantee the future'. 'So if you wish to make any arrangements I suggest that you do so'. Thus Sam Wass told the patient he would die in all probability soon and to make any necessary arrangements. But it was done gently kindly and did not completely remove hope. I have tried to follow this method of giving bad news. These days of course patients may well want more precise information. This can be given according to the circumstances. In general I have been appalled by the unfeeling way that some doctors, especially oncologists, give bad news. As I often tell patients, statistics are meaningless for the individual. Any attempt to give a length of survival is almost certainly going to be wrong.

The houseman in those days looked after the waiting list and decided who to bring in for an operation and when. During my time I reduced the waiting list by quite a lot which I think Sam appreciated. Nowadays management have decreed that there should be a centralised waiting list run by managers who are not medically qualified and do not know which patient is urgent nor who can safely wait awhile. Again another source of irritation and inefficiency.

I was very flattered that Sam encouraged me to take up general surgery rather than neurosurgery but my mind was already made up to do neurosurgery. But Sam remained my mentor and surgical father. I learnt the vital importance of judgement from him. I acquired a logical approach to surgical diagnosis and treatment. I learnt the surgical principles of how to operate which apply of course as much to general and abdominal surgery as to neurosurgery.

I kept up with Sam throughout my surgical training. Each year he sent a Christmas card asking me to keep in touch until one year he wrote a note saying,

'keep in touch with Peter Schurr' who was a neurosurgeon at the Guys-Maudsley Neurosurgical Unit. I was worried and then heard that about 6 weeks after Christmas, Sam had died. He had developed vertigo (a spinning sensation) and he realised that he had brain cancer emanating from lung cancer. This was not surprising considering his persistent smoking. He refused all investigation and treatment showing shrewd judgement to the end.

Why do I describe my relationship with Sam Wass in such detail? Simply it does not happen any more. Junior staff no longer have that intense 'master-apprenticeship' relationship. They no longer are allowed to work all hours. They work in shifts so that a consultant never gets to really know his juniors. Indeed juniors no longer are so essential for a lot of the service which is trying to become a 'consultant only' service. Is the teaching of young surgeons any better? Of course not.

One of Sam's sons became a professor of endocrinology at St Bartholomew's Hospital. He then saw the light. He migrated to Oxford and there looked after the patients with pituitary tumours including those that I had operated upon. This gave me particular pleasure because it allowed me to maintain contact with the Wass family. The master-apprentice relationship between myself and Sam Wass was amazingly strong and there were, and still are, few days that I do not think of him with great affection and gratitude. By a strange coincidence I later operated on one of Sam's sons. Furthermore I called one of my older sons 'Sam' after Sam Wass and it is fitting that my Sam is now also a much respected reconstructive surgeon.

In 1964 after my time as a houseman I married. This relationship had subsided somewhat while I was at Cambridge. My father engineered a rapprochement. With the advantage of hindsight this was a pity. Subsequently I have always been extremely careful never to interfere with my own children's relationships; except once. And my lips are sealed about that.

The housemen at Guys lived in a comfortable and ramshackle building. There was a sitting room and bar. Dr Charlie Baker, a silver haired, slightly stooped,

unmarried, chest physician was the warden. One evening he came into our sitting room about 10 pm saying, 'come and see the monkeys playing'. We were non plussed but we piled into his old jaguar. He took us to the Houses of Parliament and we watched a debate. Part of our education!

Another memorable physician at Guys was John Butterfield. He was indeed charismatic. He was the professor of experimental medicine at Guys but called himself the experimental professor of medicine. He had gone to Oxford and obtained blues for three major sports---rugby, hockey and cricket. He had great charm and one always wanted to do what he wanted. He once asked me, out of the blue, to give him a lift in my car the very evening my eldest son had been born (at Guys). I had never spoken to him before but of course I did. One could not say 'no' to him. He was that sort of person. Indeed, he could talk an angel out of heaven which was, no doubt, why he became the Regius professor of medicine at Cambridge as well as the Master of Downing College and eventually the Vice Chancellor of Cambridge University. Real charm can get you along way in life and I have always regretted not having any. Fortunately charm does not make you a better surgeon; indeed I would find too much charm in a surgeon rather off putting.

Chapter 6

TEACHING ANATOMY AND MAKING FRIENDS.

I had what seems like, a year off in 1965. Every surgeon in the UK needs to become a Fellow of the Royal College of Surgeons. (FRCS). The first part of this two part exam is in anatomy and physiology or 'basic science'. Traditionally the anatomy exam is rigorous to say the least and most people find the best way of passing the exam is teach anatomy to medical students. So I applied and was accepted to teach anatomy at Guys for one year as an 'anatomy demonstrator'. This was, for me, an enjoyable interlude after a very intensive time as a medical student and houseman. I had the advantage that anatomy had been incredibly well taught at Cambridge and this anyway was a subject I loved. There were also some unexpected pleasures. The first was the group of would-be surgeons I found myself with and second after quickly passing the exam in anatomy and physiology (the 'primary') I had time to learn and understand what clinical surgery was really all about.

Two people became life long friends amongst the anatomy demonstrators. Rick Watson was from Adelaide; a thoughtful, quiet Australian who became a plastic surgeon at Adelaide. His real love was history and he retired early to do an undergraduate degree in history at Christ Church (College), Oxford living as an undergraduate while in his early 50s. He found the dons rather defensive but his fellow undergraduates delightful. He enjoyed being treated like a favourite uncle and confessor by the undergraduates. He obtained a 'half blue' horse riding in some guise.

Terence English likewise became a staunch life long friend. He had a stellar

career as a cardiac surgeon at Cambridge as well as becoming President of the Royal College of Surgeons, a Knight of the realm and Master of St Catharine's College, Cambridge. Terence carried out the first successful heart transplants in this country.

Rick Watson decreed we should celebrate passing the primary exam by having lunch at Simpsons in the Strand. This we did at the additional cost of a parking ticket but we all felt it was important in life to celebrate successful events when they occurred; I certainly have continued to try to do this with my family.

Having had time to think about surgery was immensely valuable. I continued to find that there was no large book about surgery which was understandable and logical. The cause of this is because each chapter is written by a different specialist without recourse to the book as a whole. Indeed when a surgeon is asked to update a chapter he does not rewrite it but reads through 'his' chapter making the occasional revisions. 'Different chapters on different parts of the body by different surgeons'. I then had a revelation. Surgery was all about dealing with a comparatively few basic disorders. Furthermore the body consists largely of the same sort of material (called tissue) which reacts in the same way irrespective of where in the body.

So what are these few basic disorders? They are lumps (either a tumour, blood clot, cysts or abscess i.e. a bag of pus); obstruction of a tube; a ballooning out of a tube, called a 'diverticulum' (like a hernia or aneurysm of a blood vessel); an abnormal communication called a 'fistula' and finally a 'sinus' which is an abnormal blind ending track in the body. To this list one can add trauma leading to fractures, as well as bleeding and ulcers, and nowadays, transplanting organs and changing function, for instance, doing operations for Parkinson's disease.

I realised that if one learnt, for instance, the causes, features, complications, and treatment of an obstructed tube, then one could apply this knowledge to all the various tubes in the body whether they are blood vessels, the bowel, the bile duct, the brain cavities, or the bladder etc, etc. Much more satisfying and

logical. I can still remember the day I had this 'eureka' moment.

More recently at the insistence of my neurosurgical trainees I wrote about this and many other things, in a small book called 'a neurosurgeon's notebook'. I had always kept a 'disaster' book in my desk drawer into which I would record good and bad ideas, errors, and disasters. Neurosurgeons are only human and it is too easy to forget disasters and only remember one's successes. I based the 'neurosurgeon's notebook' on my 'disaster' book. I was very reluctant to write a book but I eventually had to agree with my trainees that I had accumulated a lot of experience, often bitter experience, which I was duty bound to share. This small book soon sold out, was advertised second hand by Amazon for several thousand pounds which I thought was ridiculous. It was meant to be bought by trainees so I digitized it and put it online for free as 'www.aneurosurgeonsnotebook.com' for young neurosurgeons to read and hopefully benefit from.

Professor Roger Warwick, Professor of Anatomy at Guys and editor of Greys Anatomy made noises about me becoming an anatomist. I consulted Sam Wass about this and he muttered in his dry sort of way but with a twinkle in his eye, 'I would have thought you could do better than that'. This comment surprised me very much having thought at that time that all professors were at the very pinnacle of success. I later realised that professors come in all shapes and sizes of scope and ability.

Certainly Sam Wass always thought that professors of surgery were not the best operating surgeons and should be avoided for any personal surgical treatment. This was not blind prejudice because the qualities needed to be a surgical professor are multiple; surgical ability, research, organisation, politics, and these days it also seems, networking, and of course, acquiring honorary degrees; I have always suspected that the number of honorary degrees often reflects the networking ability of the individual rather than his academic eminence.

Of course I met many medical professors while working in Oxford. Most were really excellent, yet some were excessively ambitious to the detriment of others,

including people in their own departments. Furthermore, a few (very few) professors seemed to spend an excessive time travelling abroad which no doubt helped them getting honorary degrees but did not seem conducive to personal research, clinical practice, or management of their own departments. The 'second in command' to professors are called 'Readers'. Many become very fed up, disillusioned, and embittered. Perhaps no more than their European counterparts but that is not a good reason for perpetuating this very pyramidal system. I think there needs to be more emphasis on having inspiring teachers in a department, not just clever researchers. It is difficult for an academic in Oxford to have a respected career by just being an excellent teacher.

I am glad I did not have an 'academic' university career. I was fortunate that I could do my 'own thing' as a NHS consultant although nowadays NHS consultants' time is much more regimented. In North America on the other hand the professorial chairmen are much more collegiate and regard incorporating others under their umbrella to be important. It is a shame we have not had a more collegiate system in Oxford.

Very few surgeons can be masters of all those professorial requirements particularly the operative aspects of surgery which, like playing a violin, needs near daily practise in order to maintain the skill level. The best operating surgeons are therefore those who perform most days, just like violinists.

Chapter 7

GENERAL SURGERY

I enjoyed my two year stint as a general surgeon. I learnt how to operate; one does a lot of operating at this 'general surgery stage', an opportunity not granted when one starts neurosurgery. However my next step was to become a senior house officer (SHO) in neurosurgery. It was necessary to do various jobs as an SHO in various specialties but it seemed sensible to test my undergraduate decision to do neurosurgery by actually doing some. A job as a SHO each lasts 6 months. I did two SHO jobs then a further year doing a lot of surgery at Pembury Hospital in Kent.

So I became an SHO at the Guys-Maudsley Neurosurgical Unit at the Maudsley Hospital which is the premier psychiatric hospital in the UK. The two consultants I worked for were Murray Falconer and Peter Schurr. Both had trained at Oxford under Sir Hugh Cairns and Joe Pennybacker. They thought highly of Oxford neurosurgery.

Murray Falconer was very dedicated and did much to foster the surgical treatment of epilepsy. He showed an interesting aspect of the master-apprenticeship relationship because he had inherited the humourless laugh from Hugh Cairns who had in turn acquired it from Harvey Cushing. Murray Falconer was a beautifully smooth surgeon to watch but he was of the pre-operating microscope era. Even though surgery was undoubtably generally rougher at that time, Murray impressed me as one of the best technical surgeons I had seen until then. He was the director of the neurosurgical unit. I am not sure 'people management' was his forte. Murray had a marked New Zealand accent. He was short and stocky and drove a grey Rover car, perhaps rather in character, for such cars had a reputation of being reliable but rather dull. I

never felt he had a real sense of humour; at least one was never revealed probably because he felt neurosurgery was far too serious a subject to be coupled with humour. Sometimes I had to call him in the middle of the night about a patient. He gave advice and then an hour or so later I would get a phone call back from him asking me, 'what did I tell you to do?' I can well understand this because many a time having been woken from deep sleep to give advice in the middle of the night, I would ruminate about my advice finding it often difficult to get back to sleep. But I never went as far as phoning back to check on what advice I had given.

I always felt Peter Schurr suffered somewhat from Murry's 'dictatorship'. Peter was a thoroughly nice and decent man. He was slightly humped in the spine having had tuberculosis as a young man. As often happens when there is a very dominant senior person, Peter moved slightly sideways and became sub dean of the medical school as well as a consultant neurosurgeon. I remember once rather cheekily asking him while stitching up a wound, 'what do you like to do, Sir, on a Sunday afternoon'? His reply was, 'I wash the car'. I remember silently vowing that I was not doing all this work in order to wash my car on a Sunday afternoon. That is one of the only four vows I am proud to say that I have kept, three of which I mention in this account of my life.

My 6 months at the Maudsley confirmed my desire to do neurosurgery.

I then completed my quota of SHO jobs required before taking the final part of the FRCS exam and becoming a 'Mr" from being a 'Dr'. This included a stint of general surgery at Guys where I was called a junior registrar. The senior registrar was keen to do most of the operating so it was a relief to be posted down to Pembury Hospital as 'resident surgical officer' for a year. This was intensive but excellent experience. I cared for all the general surgical emergencies. Neville, the consultant, had been trained at Guys and took Guys' surgical trainees under his wing. He was calm and unflappable, characteristics much appreciated, at least by myself, at that stage of my career.

It was while I was at Pembury that I had my first plate thrown at me. We were

living in a hospital flat. Quite understandably my then wife found the stress of looking after two young children, one just born at Pembury Hospital, and having a husband away so much on call, increasingly difficult. I do not blame her. It was indeed a warning shot across the bows in more ways than one. I cannot remember if the plate actually hit me or if I had managed to dodge it. From that time on our life became rather difficult with frequent allusions about my work interfering with our lives together. She was right. It did, but I hoped there would be compensations in the future and that my wife would realise it would be worth putting up with the current difficulties for better times ahead. The resident doctors were looked after very well. We lived in a house in the hospital grounds when on call. Each evening a lady came in and cooked us a roast supper. When working at the Maudsley Hospital there was a free all night restaurant. While a houseman at Guys there were eggs available on the ward and if we were up all night the nurses would make us scrambled eggs. This now would be a sackable offence. The NHS managers who decided on these economies had, in all probability, never worked all night themselves and have no doubt wasted millions of pounds on ill thought out drug purchases or computer programmes that fail to live up to expectations. Nowadays if one is up all night one is lucky to find a curled up cheese sandwich which one has to pay a machine to release. Little wonder the NHS is no longer much fun to work in and staff morale is at a low point.

We were required to do a 6 months 'Casualty' or 'Accident and Emergency' job before taking our final surgical examination. This was a way of filling these posts. I chose to do this at St James Hospital, South London which is now St George's Hospital. It had the reputation of never refusing a patient from the London Emergency Bed Service. Working there was rather like being on a battle field but it was wonderful experience although a cause of frequent anxiety not knowing what was next going to appear through the doors.

For instance, tragically, one very dead patient was bought into the department in bits. And I mean in bits, in a sac, having been hit by a train. This was a

horrifying reminder to me that the energy released after a collision was related to the weight of the object and the square of the velocity; trains are well endowed with both.

This job was unique in those days in having a consultant, Mr Caro, working in the casualty department alongside us, so we were taught how to reduce fractures and pass a tube down the airway of unconscious patients. Those who had taken an overdose of drugs were ideal people to learn from, as they were nice and relaxed, at least physically. Norman Tanner, a very famous general surgeon, worked there and was renowned for performing gastric surgery. It is ironic that such surgery is rarely done now that gastric ulcers can be cured with antibiotics. Finally I had the FRCS qualification after my name. It was now time to become a neurologist.

Chapter 8

1800

TRAINING TO BE A NEUROLOGIST. QUEEN SQUARE .

At this time we trainee neurosurgeons were a very small, and hopefully select, group. There were only about 35 consultant neurosurgeons in the country when I started to train in neurosurgery. There are now 400. This meant that the neurosurgeons were a close knit community; any promising trainee was helped. Peter Schurr sent me to see Joe Pennybacker in Oxford. Joe felt a training in Neurology would be very advantageous for a future neurosurgeon. He himself had spent time at the National Hospital for Nervous Diseases ('Queen Square'
1810 **for short) doing neurology and recommended that I did the same. Joe Pennybacker's approval seemed an important step in my future career. Consequently I spent a year at Queen Square being a neurologist and doing research for a thesis.**

Neurology embraces all the diseases that can affect the nervous system (brain, spinal cord and nerves) whereas neurosurgery deals with just those diseases of the nervous system that can be helped by surgery. It was, and in my opinion still is, important that a neurosurgeon knows sufficient neurology to recognise non neurosurgical disorders as well as being trained in the art of taking a history from the patient as well as learning the 'craft' of examining the patient.

1820 **'Taking a history' means hearing the story of the patient's illness without prompting answers with leading questions or allowing the patient to be too discursive. This is indeed an art which takes time and sensitivity to master. The neurological examination is both a craft and an art. It requires a deep knowledge of neuroanatomy and human nature. Some patients, perhaps trying to be helpful, exaggerate the findings so one needs to learn how to establish**

reliable and reproducible 'physical signs'. A 'physical sign' is found on examination and may be numbness, weakness, changes of reflexes, a squint , memory loss, speech impairment, and poor balance as well as many others disorders.

So it was decreed that I should spend 6 months as an assistant house physician at Queen Square, then 6 months doing some research under the aegis of Professor Valentine Logue (the neurosurgeon at Queen Square) followed by 12 months as a neurosurgical SHO at the Radcliffe Infirmary at Oxford.

I became a house physician to Drs McArdle, Blau, and Zilka at Queen Square. Dr McArdle, I knew from Guys Hospital but he was in most people's view the premier neurologist in London. He had been taught by Sir Charles Symonds who was responsible for starting the Guys-Maudsley Neurosurgial unit and recruiting Murray Falconer from New Zeeland.

I got on very well with Dr McArdle because he appreciated that he had a trainee who knew his anatomy, which was not always the case. He spent as long as 2 hours testing the patient's sensation. This entailed seeing how far apart a patient could detect two prongs of a 'two point discriminator' in various parts of the body with their eyes shut. The curtains would be drawn around the patient's bed and a notice pinned to the curtains stating 'keep out, sensory testing'.

He was perhaps the most obsessive neurologist I ever came across but he was a truly wonderful teacher. Uniquely he never published a paper but as a young neurologist he suggested at a meeting of neurologists in 1946 that tingling fingers usually came from compression of a nerve in the 'carpal tunnel' at the wrist. Sir Francis Walshe was chairing the meeting and enquired not too politely if Dr McArdle had not realised that there was a whole chapter in his book on the cause of tingling fingers, the cause of which came from the neck. Dr McArdle was subsequently proved to be right and Sir Francis Walshe wrong .

Dr McArdle used to inject the trigeminal nerve with alcohol in patients with a painful condition of the face called 'trigeminal neuralgia'. The alcohol would numb the affected part of the face. He did this without X-Rays on the ward.

Unfortunately Dr McArdle had a natural 'intention' tremor which fortunately stopped with contact. However the patient would have the rather disquieting experience of seeing a large needle approaching his or her anaesthetised cheek in an extremely tremulous manner but this tremor would miraculously stop when the needle reached the skin.

The neurologists at Queen Square traditionally regarded surgeons as their serfs. Indeed there was a time when the neurologist would draw the incision on the patient's head for the benefit of the neurosurgeon. This tradition had largely finished by the time I arrived at Queen Square, the neurologists by then realising that the neurosurgeons for the most part were rather competent at knowing were to make the incision. I do recall on one occasion when Dr McArdle rather imperiously asked me to, 'fetch Logue', I rather cheekily asked if he, Dr McArdle, would care to draw the incision for Professor Logue. I can still see the look Dr McArdle shot me not quite knowing whether to take my suggestion seriously or not.

Dr McArdle had a twin brother who was a researcher. To avoid confusion the red haired researcher was called 'red McArdle' and the other one was 'black McArdle'. 'Black' McArdle was delightfully eccentric. He did a 'grand round' every Friday afternoon. Should a patient come who had originated from Ireland the proceedings would stop and a discussion of the Irish music and dance from that part of Ireland would then ensue. Actual dancing was occasionally performed much to the amazement of visiting neurologists.

During the outpatient clinic Dr McArdle found it more convenient to use the wash basin to empty his bladder into, rather than wasting precious time going to the lavatory. This was never done in the presence of a patient but I have a vivid picture in my mind of this first happening. I had not been warned about this scenario. I did not know what to do or where to look except avoiding the wash basin at all costs. It is strange how these embarrassing moments are seared into one's memory. Another such memory I can still feel rather than visualise, concerned a young Egyptian girl who had a massive tumour on the nerve of

hearing. I removed this entirely and when I told her father who had been waiting in the children's ward at the Radcliffe Infirmary, that all had gone well he embraced me with such enthusiasm that I can still feel his unshaven chin against my face. A lovely man and a loving father.

I do not know why we all found Dr Nat Blau difficult. But I suppose he was rather pedantic. He was trained under Lord Brain. Maybe it was asking too much for anyone to shine when they were a nearby colleague of Dr McArdle. Perhaps unfairly he was known as, 'Lord Brain's revenge on Queen Square'. Lord Brain, an eminent neurologist, based at the London Hospital, never managed to be appointed to Queen Square, much I suspect, to his chagrin and annoyance. But Nat Blau was amazingly artistic, musical and a world expert on migraine.

Queen Square was a wonderful place for a would-be neurologist to work. There was so much going on; George De Boulay and Dr Bull teaching neuro-radiology, neuropathology demonstrations, as well as lectures by eminent people from all over the world. Dr MacDonald Critchley used to demonstrate a visual field defect by holding up a £5 note in one hand and a shilling in the other, exhorting the patient to, 'take the money'. The £5 note was of course held on the side of the visual field defect so the patient took the only money he could see, which was the shilling. It is said that he, being a good Scot, always collected the shilling from the patient after the demonstration.

I made many good long lasting friendships at Queen Square. One particular friend was Ed Tarlov who later became a much respected neurosurgeon at the Lahey Clinic at Boston. I still keep in touch with Ed and his wife, Suzanne. Another was John Newsom-Davis who in time came to be the world expert on a muscle disease called myasthenia gravis, as well as becoming Professor of Neurology at Oxford after Brian Matthews retired. John looked amazingly young and in fact he had been a fighter pilot before becoming a doctor. Very sadly he died in a motor crash in Romania.

We had all been to the memorable wedding of Ed and Suzanne in a small church

near Cambridge followed by a delightfully informal reception in a nearby pub. They had the wedding they wanted by explaining to their American friends how it was done in England and to their English friends how Americans liked to be married when in America.

My next 6 months at Queen Square allowed me to do research leading to writing a thesis. A thesis is necessary in order to pass the Cambridge Master of Surgery exam, 'M.Chir'. ('Magister chirurgiae' in latin). Vernon Pennell, as senior surgeon at Addenbrookes had been chairman of the examiners. Fortunately he was no longer Chairman when I presented myself; Vernon Pennell himself had been unable to pass the M.Chir exam so made sure no one else passed it while he was the chairman. Originally the exam was a pure exam without the need to do a thesis. It was only when a friend of mine from Guys, passed the M.Chir exam, theoretically a more difficult exam, but failed the (easier) FRCS exam that Cambridge rightly decided to make the exam by thesis together with a short interview to be sure the candidate was a proper surgeon. I am not sure if this apocryphal story is true but it is recounted that one frustrated candidate for the M.Chir exam, feeling himself to being unfairly treated during the oral part of the examination, picked up a 'pot' containing a pathological specimen and struck Vernon Pennell with it.

All ambitious surgeons wish to get a Master of Surgery exam because it helps them to get a good job. Most, if not all, such exams are now by thesis with an interview. It has to be admitted that the research component seldom leads to an advance that 'changes practice'. On the other hand it does show to the candidate how difficult and time consuming it can be to do good research. It is also invaluable to learn how to write a paper or thesis. The choice of subject for research is crucial. I wanted to choose something that I could do myself rather than joining an existing research group and furthermore I wanted to do something that would remain an interest for the rest of my career.

I chose to investigate the (bio)mechanics of the neck or cervical spine. The neck has an amazing range of movement, over 100 degrees of movement when bent

forward and backwards. Wear and tear in the cervical spine is the cause of damage to the spinal cord and nerve roots traversing the neck. I felt, and still feel, that these movements must play and important role in the genesis of nerve and spinal cord damage. I set out to investigate what happens to the spinal cord (and its tough covering called the dura) and nerve roots when the neck is bent forwards and backwards.

I did this research in the post mortem room of the now defunct Middlesex Hospital under the aegis of Valentine Logue. The senior radiographer, Miss Franklin, was amazingly co-operative and joined in with great, almost excessive, enthusiasm.

Valentine was tall, polite, and obsessional. I sometimes looked after his patients and the rule was that we had to phone him at 8pm every evening to report on his patients. He was a slow, careful operator and took time to seal off the most minute vessels. He deserved more recognition than he received but he was modest and introspective. His fellow neurosurgeon at Queen Square, Wylie McKissock, was the opposite. He was a small and an aggressive extrovert. He was a fast operator and was known to sometimes use his finger to deliver a tumour which was on the nerve of hearing. He did not bother unduly about stopping bleeding. Closing the wound was left to his assistant. This closure often took longer than the tumour removal because of the need to seal the vessels Sir Wylie had left unsealed. Allegedly he liked to be home every day by 6pm to listen to the Archers (a farming 'soap') on the radio.

Valentine and Wylie were not on speaking terms. Wylie retired to Scotland to do occasional work behind a cocktail bar. They were very different personalities, indeed as different as it is possible to imagine. But I know who I would have chosen to do my operation.

My research was in reality, simple. It entailed inserting wires or pins into these various neck structures, bending the neck forwards and backwards and taking X-Rays in these extreme positions. I then analysed the effects of movement by studying the pins on the X-Rays. My thesis described my research, my results,

and of course included a literature search of what similar work had been done in the past. I managed to complete and submit this work before I went to Oxford.

Mr O'Connell, a legendary neurosurgeon at St Bartholomew's hospital, was chosen to read my thesis (a subject I knew to be of particular interest to him) and gave me a very gentle viva, or oral exam, at Cambridge. He was a slowly speaking Irishman. He wrote beautiful articles especially on problems concerning the spine. Occasionally he met with Joe Pennybacker for 'a fish lunch' on a Friday at the Atheneum Gentleman's Club. Those were the days when even hard working surgeons could squeeze in a fish lunch.

The day Mr O'Connell retired to Hampshire to fish on the river Itchen, he announced that he was going to marry a nurse who had worked with him for many years at St Bartholomew's Hospital. He felt his devotion to neurosurgery was such that he could not be married and do neurosurgery at the same time, nor indeed fish on the River Itchen. All that was probably true.

My research gave me a particular and long lasting interest in the effects of neck movement on the spinal cord and nerve roots, which subsequently has helped me in advising the most appropriate operation for patients. I still think present day surgeons need a better understanding of these spinal mechanics; perhaps this will come now that MRI scanning can reveal the nerves, spinal cord, and dural coverings whilst bending the head and neck forwards and backwards.

At this phase of my life we had moved to a small cottage outside Oxford, knowing that my next job was to be in Oxford. Whilst doing my research at Queen Square I was commuting by train; I remember finding travelling 5 days a week was tolerable but the additional Saturday sixth day commute was a killer. Just Sunday to recover my energy reserves was not enough. Son Sam was born at this stage of my life. The au pair dropped him down the narrow cottage stairs which made his right arm and leg floppy for a few months. Luckily this did not prevent him becoming a skilled and successful surgeon.

Having spent an intensive part of my life doing this thesis I decided to submit a copy of it for the top (Jacksonian) prize essay of the Royal College of Surgeons.

No names were to be put on the essay so I submitted it under the family motto which was, appropriately enough, 'where there is life, there is hope'.

2010

Chapter 9

JOE, EDWARD AND DICK ; OXFORD NEUROSURGERY.

I was very excited about going to Oxford in 1969. Oxford was one of the very best neurosurgical units in the country. It had a world wide reputation. I felt very fortunate. When I arrived I was the most junior doctor in the department. By then I had been a general surgeon, a neurologist as well as acquiring all the exams I needed including the 'Master of Surgery' degree. Shortly after I started
2020 **at Oxford it was announced that I had been awarded the Jacksonian prize of the Royal College of Surgeons.**

I received a gracious and delightful congratulatory hand written letter from Sir John Stallworthy. Sir John was the Nuffield Professor of Obstetrics and Gynaecology at Oxford. I had never met him. Indeed I never did meet him. These disciplines were far removed from Neurosurgery. I have never forgotten that kind and completely unexpected gesture particularly as Sir John had a fearsome, Pennell like, reputation amongst trainees in Obstetrics and Gynaecology. His son became a very well known poet and used to live in the house I now live in. Such gestures somehow make the world go round and I wish
2030 **I had done the same to other junior doctors in different specialties when I was in a similar position to Professor Stallworthy.**

Neurosurgery at Oxford was centred around Nuffield 1 ward. There were 21 beds and a 'fields room' where the junior doctors lived and wrote up the patients' notes. The term 'fields room' came from Cairn's time when the visual fields were obsessively plotted by the house surgeons, almost daily, in order to

assess if the pressure in the patient's head was getting worse or better by plotting the area of the 'blind spot' in the back of the eyes. This blind spot becomes larger if there is increasing papilloedema (swelling of the retina) from increasing pressure in the head.

There were two SHOs and a senior registrar. The senior registrar was a delightful man called John. There was not a nasty bone in his body. He eventually became a neurosurgeon at the Kings and Guys Neurosurgical unit which by that time had moved to Kings College Hospital across the road from the Maudsley Hospital. John did however have his enthusiasms and while I was at Oxford his over riding enthusiasm then was for 'Venn' diagrams. Mention of these did somehow induced a fleeting look of polite boredom from Joe Pennybacker. It is difficult to see how a series of overlapping circles that constitute a Venn diagram could have much relevance to neurosurgery but John managed!

So there were two consultant neurosurgeons.

The senior one was Joe Pennybacker who was considered one of the very best neurosurgeons in the country. He was a formidable neurologist as well as a very skilful surgeon. He was tall and elegant whose accent was a mixture of Virginian (USA) and Scottish which reflected his background. Generations of students never quite managed to master his accent in the annual Christmas play put on by the medical students each Christmas. Joe tended to blink at one over half moon glasses that did indeed give an impression of a wise old owl. He was indeed wise.

Joe was in fact the director of the department. He had come down to Oxford from the London Hospital with Sir Hugh Cairns in 1938. Cairns was a great organiser and was one of the prime movers persuading Lord Nuffield to endow the 'Nuffield Professorships'. Cairns, a neurosurgeon, was the first Nuffield Professor of Surgery. When Cairns sadly died in 1952 at the age of 56 from cancer the Nuffield Professorship moved to a thoracic surgeon. Pennybacker was made 'director' to compensate the department for the loss of the Nuffield

Professorship.

Joe Pennybacker was a wonderful teacher. He would come into the hospital at all hours of the day or night when he would assist the trainee to operate. This is a remarkably difficult thing for a surgeon to do; to spend hours watching a trainee taking three times the time that the consultant would take, especially in the middle of the night, requires very unusual reserves of patience. The trainees, not surprisingly, thought the world of him. Joe was a very shrewd neurologist having been indeed trained as one at Queens Square. He had the reputation of being the best neurologist in Oxford as well as an outstanding neurosurgeon.

Joe was very formal and would either address me as, 'doctor', or 'Christopher'. I was in awe of him and I later found out he felt I did not smile enough! Perhaps my awe was such that it inhibited my smile. A more likely reason however was that Joe spoke in a very quiet voice and by then I had increasing difficulty hearing out of my left ear and had to strain to pick up all he said; very smile inhibiting! During that winter my hearing became worse because of a further ear infection so I gave myself a two week course of intramuscular penicillin injections in an effort to hear what Joe said. Not particularly pleasant, intramuscular penicillin injections, nor in my case particularly helpful as far as my hearing was concerned. In those days we could go to the pharmacy and help ourselves to whichever medicines we needed.

It was always accepted, even by Cairns, that Pennybacker was a much better surgeon. Cairns followed the laborious neurosurgical technique promulgated by Harvey Cushing. Cairns was very influenced by Cushing having spent a year with Cushing in the USA. He respected him rather than liked him. Cushing was highly competitive ('he cheats at croquet', wrote Cairns to his wife) and for this reason Cushing fell out also with his trainee, Walter Dandy, who was a much more accomplished surgeon. Cairns in many ways was saved by World War 2; this allowed him to use his undoubted organisational skills for the British Army while Pennybacker did the neurosurgery at the Radcliffe Infirmary.

I never met Cairns but by complete coincidence I did unknowingly buy the same

house that the Cairns had lived in when I later returned to Oxford as a consultant. The garden was large, too large for me, but sufficiently large for Cairns to keep a pig in the garden during the war feeding it on scraps from the Balliol kitchen. We lived there for 20 years. The house was large, ugly, and extremely cold. But the children loved the space which allowed free range of expression to their inventiveness. Dressing up, dens, and personal fiefdoms were order of the day. It was a typical North Oxford house whose grandeur had rather faded. The Bhutan pine in the front dripped extremely viscid and irremovable resin on any car parked beneath it. Unfortunately the tree was legally protected which precluded me from chopping it down.

When Cushing retired the hospital staff of his (American) hospital formally resolved never to have another neurosurgeon on the staff perhaps indicating how difficult a colleague he had been. However Cushing's humourless laugh was copied by Cairns and from him by Murray Falconer but hopefully it stopped there. Sir Geoffrey Jefferson was a much respected neurosurgeon at Manchester who 'sniffed' and it was said that one could always recognise a Jefferson trained surgeon by this propensity to sniff. At that time the senior registrar rotated between Manchester and Oxford. I confess I have not come across a trainee who sniffed while laughing in a humourless fashion but these apocryphal stories do illustrate the power of the apprenticeship training.

Edward, not his real name, was the other neurosurgeon at Oxford when I arrived. He was a very bright man, a great raconteur, and a lover of his Oxford College and its traditions. However he should never have become a neurosurgeon. He found operating stressful and consequently he was fairly unbearable as a boss. His migraines stopped only when he retired. His wife was delightful and I became very fond of her.

Strangely, very recently, I met one of Edwards's sons in Cambridge. He asked me, 'what was my father like'? I replied, 'do you really want to know?' He said he did. I told him that in my opinion he should never have been a neurosurgeon. His son agreed and added that, 'he also was not an easy father'. This was no

doubt due to the stress of being a neurosurgeon which sadly affected his relationship with his children.

I always felt Joe Pennybacker protected Edward. As Pennybacker was the director of the department all the neurosurgical patients came in under Pennybacker who then 'gave' Edward some patients to look after. So Edward was never a truly independent neurosurgeon although he was put in charge of the head injury patients. These were cared for as part of the Trauma Service, in separate 'trauma' beds on a separate ward. The head injured patients did not, for the most part, pose an operative neurosurgical challenge although their general care was very important.

It so happened that Pennybacker did not enjoy operating on people with tumours on the nerve of hearing (acoustic neuromas) or with ruptured aneurysms. An aneurysm is a ballooning out of a blood vessel in the brain which may rupture causing a devastating stroke. Sometimes these people have a 'warning bleed' of a sudden unusual 'thunderclap' headache as if they had been hit on the back of the head by somebody else. If this is recognised for what it is and if the individual is admitted and investigated before a (second) major bleed, then the aneurysm can be 'clipped off' to prevent another bleed. More often these days aneurysms are sealed off by a radiologist feeding a fine catheter from an artery in the groin into the aneurysm in the brain.

The surgical treatment of an aneurysm in the operating microscope era was, and still is, an immensely satisfying procedure being akin to defusing a bomb. The walls of these aneurysms are so thin one can see the blood swirling around inside. It is essential to place the clip exactly at the junction of the aneurysm and the major artery from which it arises (the 'neck') having gently dissected the very important nearby branches of the artery away from the neck of the aneurysm. Rather akin to tying a piece of string around the neck of a balloon down a narrow 5 inch hole. Not all aneurysms can be treated by a radiologist these days and there is still a place for surgery on these occasions.

The operating microscope has transformed aneurysm surgery; even if the

aneurysm ruptures prematurely one can control the haemorrhage by judicious placement of a small sucker over the hole in the aneurysm, while the dissection is completed in order to allow careful and accurate placement of the aneurysm clip.

Edward did the 'aneurysm surgery' when I arrived in Oxford. He was always very reluctant to do this surgery. Any rather slight associated medical problem suffered by the patient was deemed enough to cancel the surgery. But when this operation was done, I have retained a vivid memory of the events. Almost invariably the aneurysm would rupture as soon as the dissection was started. A jet of blood would hit the operating light. There would be much shouting, even screaming, and Edward's home made clips would be applied to various structures until the bleeding stopped. Regretfully the important main artery was clipped more often than not with subsequent severe damage to the patient. I too would be reluctant to do this surgery if this was how it was done.

In July 1969, I arrived in Oxford to this scenario. I found I was put 'on call' my first weekend. My duty was to get to know all the patients but also to assess ('clerk in') all the new patients by taking their histories and examining them so I could present them from memory, without notes, on the Monday morning 'Grand Round'.

This grand round was a challenge for the neophyte and it was certainly a stressful introduction to Oxford neurosurgery for me. The grand round happened once a week in front of not only the neurosurgical team, but also neuroradiologists, neuropathologists, radiotherapists, neurologists and visitors, who not infrequently came from abroad to see Joe Pennybacker.

One lady—I will call her Mary—had an acoustic neuroma, a benign tumour on the nerve of hearing. I presented her (that is described her symptoms and signs on examination) and Pennybacker said to Edward, 'you take this case'. Edward asked me, 'what would I advise Mary to have done?' Having come fresh from Queen Square and Valentine Logue I did not hesitate. I replied, 'I would do a total removal of the tumour.' Edward then attacked me for this answer in front

of the grand round audience. I was non plussed to say the least but looking back it was clear Edward did not wish to undertake this surgery which undoubtably makes great demands on the surgeon. Of course it was easier but perhaps less honest, to attack me with doubtful reasons why not to operate, than to admit that the surgery I had advocated, total removal, was too difficult for him to do. A partial removal was subsequently done, that is scooping out the interior but leaving the outer rind or capsule with inevitable recurrence of the tumour. Rather like eating a boiled egg but leaving the shell and adjacent egg white. Interestingly when I returned three years later as a consultant, Mary came back with a large recurrence of this benign tumour which I then completely removed. However this second operation was made much more difficult because I needed to free the important surrounding nerves from the scarring produced by the first operation.

I enjoyed my time in Oxford. I was in awe of Pennybacker but in all honesty I thought his surgical technique was rather rough. I suspect he knew just how far to go when handling tissues and he was no doubt one of the best of his time. Good surgery requires being gentle with the tissues; not to make unnecessary cuts; the need to find and stay in the correct anatomical layer; this is particularly important. Good technique means on the one hand stopping bleeding so blood clots do not accumulate but on the other hand, not leaving too much dead tissue by using excessive diathermy. Diathermy is a method of sealing blood vessels using electric current. Cairns did not approve of this (then) new fangled method of sealing off blood vessels. Good surgery means not leaving spaces within the wound at the end of the operation into which blood can seep and accumulate. Blood is a good culture medium for infection to prosper in. The wound therefore must be sewn up in correct layers to eliminate any spaces.

It is important not to leave foreign bodies, like black silk, in the wound. At one time surgeons used black silk to sew up the interior of wounds which sometimes resulted in infection. This infection persists until all the black silk had been surgically removed. Black silk is not 'absorbed' by the body like modern suture

material. Murray Falconer, such was his regard for Oxford neurosurgery, continued to use black silk because he had seen it used at Oxford in 1940. It was only when I later told him in 1970 that black silk had been long abandoned at Oxford that he stopped using it. Again the power of the master-apprenticeship relationship even when it defied logic.

Edward had an expression that always induced a sense of dread in me. 'There comes a time in an operation when you have to throw your hat at the it'. This meant Edward had lost patience and would introduce a large sucker into the tumour which was subsequently removed quickly and roughly. The patient was invariably damaged.

When I was at Oxford I became very interested in the operating microscope. It was used by eye and ENT surgeons but not yet by neurosurgeons except by Gazi Yasargil in Zurich. Hugo Krayenbuhl was the chief of Zurich neurosurgery and had trained under Cairns and Pennybacker at the London Hospital before the latter two moved to Oxford and he had moved to Zurich.

I timidly knocked on Joe Pennybacker's office door to discuss going to spend a week with Yasargil in Zurich. Yasargil ran one week courses in microneurosurgery. Joe asked me what I thought of the operating microscope and I replied that I thought it would transform neurosurgery. Edward was in the room and said, 'operations will last much longer; the infection rate will go up'. 'No, operating microscopes will be no good'. I have learnt in life that there is a tendency for some people to denigrate a possible advance without in fact knowing anything about it or at least trying it out; rather like Cairns denigrating the diathermy method to seal blood vessels.

The operating microscope has indeed transformed neurosurgery. The surgeon looks down a beam of light. It is not just the magnification but also the illumination and maintenance of binocular, 3-dimensional, vision. It allows minimal retraction or distortion of the brain which of course is essential. Before the microscope was available, surgeons would squint by closing one eye, down a deep and dark hole not really being able to see the important structures

adequately. Brain retraction was rougher in those days in an effort to see the anatomy, which explains why aneurysms often ruptured early in the operation. Joe Pennybacker liaised with Krayenbuhl and arranged my week with Yasargil. I was fortunate to be one of the first, if not the first, neurosurgeon in the UK to embrace the operating microscope. When I came back from Zurich I managed to borrow an old microscope from the eye surgeons and to practice using it to sew together small blood vessels which I obtained from the pathology department. Use of the microscope does take a little time to master because one has to maintain binocular vision as well as mastering not looking directly at one's hands.

And Dick? While I was at Oxford, Dick came from Sydney, Australia. He was, by then, already a consultant neurosurgeon in Sydney and had been for about 12 years. He stayed working in the department at Oxford for about 6 weeks. I found him a delightful person. He was short and stocky and had the cheerful optimism one associates with the Australian character. He had previously trained at Oxford. I had no idea why he had come. But I later found out.

Chapter 10

BACK TO LONDON.

I am sorry to say that I was incredibly lucky at somebody else's expense. Towards the end of my year at Oxford I was asked to go back to the Guys Maudsley neurosurgical unit as a 'locum' (i.e. temporary) senior registrar. Unfortunately the consultant neurosurgeon at Swansea had had a stroke from a ruptured aneurysm. This was operated upon elsewhere but he had sadly died. The currant senior registrar from the Guys Maudsley went to Swansea as a replacement and I was asked to fill his vacated post. I only mention this to show how luck and indeed fate, plays a big part in one's advancement as does being in the right place at the right time.

Accordingly I became a senior registrar without ever becoming a registrar. Eventually I was made the substantive (as opposed to a locum or temporary) senior registrar with the prospect of spending a year at The Mausdley Hospital followed by a year at the Brook Hospital. The Brook Hospital was an original fever hospital but was greatly loved. Whereas the Guys Maudsley neurosurgical unit had the reputation of being rather selective and only taking 'interesting' patients, the Brook Hospital took everything from South East England extending down to Canterbury and beyond. It was busy but provided wonderful experience for young surgeons.

The three neurosurgeons at the Brook were all very different. Geoffrey Knight I hardly saw but he was also 'on' at The Hammersmith Hospital. He had a Rolls Royce car and had developed an operation for psychological problems. He had a full head of silver hair which gave him a distinguished look. His face was florid. He wore round gold glasses. He enjoyed being an expert witness for lawyers

which he continued to be well past retirement age. That must have helped to pay for running his Rolls Royce as well as the good life which I suspect he enjoyed. It was said the Judges got rather fed up with him as he thought his lengthy medico-legal experience allowed him to be not only an expert witness, but also barrister and judge.

The patients for this 'psycho-surgery' were chosen by the psychiatrists so I found myself implanting radioactive yttrium seeds through a needle into the front part of both sides of the brain once a week for a year. This operation was a form of 'mini lobotomy'. The psychiatrists assessed the patients post operatively and my role was to perform the operation only; a rather unsatisfactory business from my point of view.

George Northcroft was a charming, mainly 'spinal,' surgeon. I had the impression that the best time of his life was during World War 2 when he worked in one of Hugh Cairn's mobile neurosurgical units. Cairns had developed these in order to provide urgent treatment for head injured patients near the front line. Their job was to patch up the head wound to prevent infection setting in prior to evacuating the patient back to Oxford for more definitive treatment.

Cairns had set up an Army Hospital in what is now St Hughs College, Oxford. Cairns' administrative and organising ability came to the fore during the war. He built up a neurological and neurosurgical unit in Oxford which became the mother ship for a whole generation of neurologists and neurosurgeons. I suspect this was immensely exciting and I am sure that George Northcroft was not alone in finding post war life rather boring.

John Gibbs was the remaining neurosurgeon. He was tall, partially bald, with a slightly sallow complexion, and a small moustache. He had a husky voice and slightly clipped speech. Gentle humour was never far away.

He was one of the most wonderful men I have ever met. He had been a prisoner of war of the Japanese. I suspect he had had an awful time but he never spoke of it although I believe he still had tingling of his arms and legs from peripheral

nerve damage due to malnutrition. In fact he never spoke ill of anyone and I suspect he found the irritations and worries of life in south east London to be very petty and insignificant after his experiences during the war. He inspired me in many ways, not only as a person but as a thoughtful surgeon.

He was very interested in aneurysms and their surgical treatment. He invented 'twisters' which consisted of a wire loop placed around the artery from which the aneurysm arose. The patient was then sewn up and woken up. By twisting the loop in the awake person (rather like a loop of string around a finger), one could very gradually occlude the artery and thereby reduce the pressure within the aneurysm. If this was done slowly other blood vessels could open up and compensate for this occluded vessel or if the occlusion of the artery was not tolerated then the 'twister' could be untwisted and the flow down the artery restored. This did not become standard treatment for most aneurysms but there were some circumstances, for instance when there was no 'neck' to the aneurysm, when the use of the twister was the only method.

Charlie Drake was a wonderfully impressive Canadian neurosurgeon who in fact spent several months training in Oxford. Why was he wonderful? Because he went around talking about the problems rather than his amazing successes. He often emphasised 'there are many ways to skin a cat'. In other words there are many different ways to do operations.

In the hot house competitive arena of North American neurosurgery there was —and probably still is-- a tendency to use neurosurgical conferences as a platform to demonstrate one's unique, special, complication-free qualities in order to encourage referral of patients to the speaker. Charlie Drake did not go down that path but chose to talk openly and frankly about the difficulties and problems. It is too easy to show amazing pictures of an amazing operation but be economical with the truth as to how the patient was after the operation and, perhaps of more importance, the truth as to how the relatives found the patient after the operation.

Charlie Drake was interested in the twister method for these otherwise

inoperable aneurysms and it gave me much pleasure when I had moved to Oxford as a consultant to tell Drake of John Gibbs' work. Charlie Drake immediately telephoned him from my office and they had a long discussion about 'twisters'. Drake in a subsequent publication gave belated but very deserved recognition to John Gibbs for his innovative contributions to the treatment of aneurysms. I am so glad John received recognition from such an admired surgeon.

John Gibbs knew of my interest in the operating microscope. He had the courage to let me operate on all the patients with ruptured aneurysms under his care at the Brook Hospital. He would sit and patiently watch my first tentative steps using the operating microscope. I believe that very soon he saw the immense advantages of this advance and by the time I left the Brook Hospital I had successfully operated on about 30 patients. I think he would have loved to have embraced the operating microscope but felt that he was too old to adapt to this new technique.

I kept up with him long after I had left the Brook Hospital. He lived a long life, I believe to his nineties. I feel, despite Drake's accolade, he never received all the recognition he deserved in the UK. He was a man of great humility and gentle humour. He was indeed a great man to whom I owe a very great debt. I can still 'see' him now, sitting beside me when I first started to use the operating microscope.

One Saturday morning in late 1971 I was doing a back operation for a slipped disc at the Brook Hospital and I received a telephone message to talk to Dick. Dick said, ' I have just been appointed consultant at Oxford to replace Joe Pennybacker'. Apparently Joe had decided to retire early, aged 63. Furthermore Dick went on to say, 'that Edward has decided to retire as well to become the post graduate dean at Oxford'. He added, 'I would like you to apply for Edward's job'. Would I like to apply? Of course! I can still feel the excitement I experienced on receiving that phone call.

Now I knew why Dick had spent 6 weeks in Oxford in 1968 when I was an SHO

there!

I never quite understood what post graduate deans did but clearly it was an ideal job for Edward to allow him to cease doing neurosurgery. I still do not really know what they do except impressively increase the bureaucracy concerned with the training of young doctors. Obviously Dick had come over while I was an SHO for Joe to look at Dick and Dick to look at Oxford. We got on well at that time. It is another example of luck in one's surgical life and of being in the right place at the right time. The interviews took place in February 1972 and I was very delighted to be appointed to start as a consultant neurosurgeon on April 1st 1972 at the age of 32.

So once again the family, now living near Dulwich, was uprooted to move back to Oxford where our fourth child was born in 1972. But at least this was the final move having acquired a permanent consultant job. We could then, at long last, settle down as a family. Or so I hoped.

Chapter 11

TREVOR

He was a five year old boy. I shall call him Trevor. I will always remember Trevor. Why? Two reasons. First he had an extremely rare illness which I have never seen before or since. Second it was an incredible stroke of good fortune that I succeeded in inserting a needle into the cavity of his brain.

This happened when I was the senior registrar at the Guys-Maudsley Hospital in 1970. Trevor, aged 5 years old was admitted in coma. In those days we had no scans. The routine was to ask a radiologist to perform an angiogram. This entailed (in those days) inserting a needle in the carotid artery in the neck and injecting dye to outline the blood vessels. The next thing to do was to make a 'burr' hole in the skull. 'Burr' hole because the drill bit looks just like a burr from the countryside although of course bigger. The angiogram showed no obvious abnormality so I performed a burr hole and inserted a needle in the cavity of the brain (called the ventricle; i.e. a cavity or chamber) in order to inject air so to outline the brain on an X-ray. An X-Ray then shows the air in the cavities of the brain in contrast to the brain itself. Normally the ventricles are sizeable but this boy's ventricles were similar to the thinest crescent of the moon. I entered the ventricle at the first attempt by sheer luck. There was no neurosurgical cause for this very swollen brain compressing the ventricles to the merest slits. It turned out that he had lead poisoning, a rare cause of a swollen brain since lead soldiers and lead paint are no longer available. It is said that lead poisoning was one reason for the demise of the Roman empire due to lead in some form being added to sweeten the wine.

Chapter 12

ON BECOMING A CONSULTANT. 1972.

Yes, becoming a consultant is a big jump. By 1972 my training was finished. The buck now stopped at my feet. I was now wholly responsible for the patient's outcome. I was indeed responsible for everything including the need to provide an efficient and responsive service to 3 or 4 million people. So said the job description that came with my contract with the Governors of the Radcliffe Infirmary.

Of course I was elated. But there is a fine line between success and disaster in neurosurgery. Success is wonderful but be beware that it does not lull you into a false sense of security. One trainee of mine, possibly the best I ever had, who became an outstanding neurosurgeon, told me he thought he had mastered the difficult operation of removing an acoustic neuroma on the nerve of hearing. The next acoustic neuroma patient he operated upon died.

Be beware of hubris. Stay humble and thoughtful. Just as there is a fine line between success and failure there is a fine line between necessary confidence and unnecessary arrogance. As I have said, I always learnt more from my failures than successes.

I have already mentioned I used to keep a small notebook in my desk, into which I would jot down ideas and disasters. Ideas that work, as well as those that do not. It is too easy to forget our disasters and only remember our successes. This is human nature and in this neurosurgeons are no different to horse punters, fishermen and stock market investors. The 'disaster' book served as a challenge to me to do better. It also served, as I have recounted, as a basis

for a little book I wrote at the insistence of my then trainees, 'a neurosurgeons notebook'.

How does a neurosurgeon cope with disaster? I can only answer that question as to how I myself coped. I managed by knowing I had done my absolute best and that is all anyone can ask of anyone else. But the devil is in the detail which in this case is the word 'absolute'. That meant everything else including family and myself came after the needs of the patients. It was fortunate that I hardly ever became stressed operating. I cannot ever remember raising my voice while operating. I never threw instruments. I seemed to get 'in the zone' which, I suppose, was being transported to a state of intense but relaxed concentration. Indeed the operating theatre was a refuge from the outside world.

What did cause me stress? The need to telephone doctors or patients at the end of a long day. Dealing with hospital administration. The need to see more patients in outpatients than I could cope with. The need to see a person who had not done well. I always saw the preoperative patients the evening before an operation and told them that I would do my best for them. Of course I would do my best, but it helps the patient to hear it said by the surgeon who is about to operate on him or her. For the individual, the operation is perhaps one of the most momentous events of his or her life. I often likened this to Shakespeare's 'a touch of Harry in the night' referring to Henry 5th going round his troops the night before the battle of Agincourt.

The surgeon must avoid if possible becoming too tired. I have noticed that tired surgeons over operate; it is easier to say 'operate' than 'lets wait and see'. Junior surgeons over operate. It is the senior surgeon's task to say 'No' which again takes thought, judgement and experience.

When I arrived at Oxford on the 1st April 1972 I was welcomed by the House Governor who said, 'I am here to help you'. I was very touched by this but it was the first and last time I ever heard this sentiment expressed by a hospital manager. Too soon the aim of the administration was to stop us doing so much work because we, 'consumed too many resources'. But the Radcliffe Infirmary

itself was a friendly building. There was nothing of the concrete and glass of modern hospitals. The narrow, warm, Headington stone, corridors somehow embraced you as you entered and one certainly seemed to see everybody just walking down the main corridor.

The second memorable interchange on that day, April 1st, was that Dick said that he thought all the patients should come in under him and he would let me have a few to look after. This was following the Joe/Edward regime which in my view was one reason why Edward never quite coped on his own and indeed why he decided to retire when Pennybacker retired. This was a battle I had to fight on my first day. I replied to Dick that, 'we were both consultants and therefore we were of equal status'. In fact Dick was about 15 years older than me and more experienced but I felt it was essential to stick to my guns over this. He was not the 'director' of the department as was Joe Pennybacker. I therefore suggested we did alternate weeks on call. There were only the two of us for a population of 3 to 4 million. In fact Dick quickly agreed to my suggestion.

I got on very well with Dick and liked him enormously. We did have a problem with the existing senior theatre nurse, Jean, when we said that we wanted to use the operating microscope which the hospital had kindly bought for us. She felt that if Mr Pennybacker had not needed one then there was no reason for us to use one. In the end she moved sideways into the general surgical theatres, which then allowed us to wheel in the beautiful new operating microscope into the neurosurgical theatre. This also allowed Jean to avoid coping with this new fangled instrument as well as looking after the fine microsurgical instruments that were needed when using the operating microscope. Change can be very threatening.

Thanks to John Gibbs I was relatively experienced at clipping aneurysms by the time I reached Oxford. The operation took about 2 hours.

Dick had developed his own method which entailed cooling the patient; another surgeon would open the chest in order to temporarily occlude the blood flow to the brain while Dick opened the head to clip the aneurysm. This took all day. I

reluctantly promised to help with this procedure and became for a few months a part time chest surgeon. Fortunately the enthusiasm for this procedure rapidly waned and I reverted to the method I used at the Brook Hospital.

I did notice that Dick found this surgery stressful and he had a marked tremor when it came to placing a spring clip on the neck of an aneurysm.

Furthermore, Dick made frequent trips back to Australia and it transpired that he was away for 8 months during the 2 years he was at Oxford. This left me in charge of all neurosurgery. This required me to do operations that I had not done before. Fortunately I had wonderfully supportive colleagues especially Phillip in the radiology department. It was perhaps then that I got into the habit of thinking a great deal, as well as studying the anatomy in great detail, before carrying out any operation.

There was a further cultural problem. When a neurologist asked Dick to see one of his patients to provide an opinion, Dick took this to be an invitation to operate on the patient. The neurologists were unhappy to say the least to discover their patient had been rapidly transferred to a neurosurgical bed.

I had been trained at Queen Square and knew of course how to manage a Neurologist's sensibilities. The game, or dance, was played thus: I would see their patient take a history and exam the patient. I would then write a lengthy note in the notes giving my opinion as to the problem and whether or not there was an operation that might help. Of course the risks of operation were weighed against the risks of not operating and would be noted. After several days I would then receive a message, rather like a puff of Papal white smoke, inviting me (or not) to take over the patient and operate, if of course the patient agreed. In this way all sensibilities were respected.

Brian was the Professor of Neurology at Oxford at this time. Brian was a wonderful neurologist but was also blessed with a quiet but infective sense of humour. His father had been Dean of St Paul's cathedral in London. Brian had spent many a night during the war on the roof of St Paul's on fire watching duty. I greatly enjoyed his company. He claimed that his wife dreamt the winner of

horse races. Brian stated he had bet quite successfully on the horses as a result of his wife's clairvoyant abilities.

She was one of four daughters. Her mother successfully married them all off to four very successful medical men. One married, John, a medical researcher of renown; another married Dr, later Sir, John Badenoch who was very much a physicianly father figure to me when I first arrived at Oxford. John's son, James, became a successful barrister with whom I occasionally worked during the medico-legal phase of my career. I once played (bad) cricket with James. Clearly the Islip village cricket team must have been very desperate to have asked me. The fourth daughter married a successful New York obstetrician. I believe it was only Brian's wife amongst the four sisters who was actually clairvoyant. Perhaps the others were, but they never told anyone.

Unfortunately Dick thought this dance with the neurologists was ridiculous and refused to participate. The outcome was that patients were no longer referred to him by the neurologists. It is also a fact that a neurosurgeon cannot be away so much without losing some credibility; credibility needs availability. He decided to return to Sydney as Dean of the medical school which I am sure was the right decision for him and his family. As he was waving goodbye he said, 'by the way I have accepted that Oxford should host the next Congress of the European Association of Neurosurgical Societies (EANS) in 1975 and could I organise it'? .

Chapter 13

EUROPE. 1975.

This came like a bolt from the blue. That is the invitation Dick mentioned while he was waving goodbye. It came from Richard Johnson who was the President of the EANS (European Association of Neurosurgical Societies) as well as the senior neurosurgeon at the Manchester Royal Infirmary. Generally the congress is held in the President's home town but Richard felt Oxford would be a more memorable venue than Manchester. Hence the invitation.

Richard was someone I came to like enormously. He had the reputation of being a lucky and successful surgeon. I do not think it was luck but he was extremely skilful. I believe he enjoyed operating and so did not become stressed in the operating theatre. He was keen that we had no formal conference organisers but that the wives and daughters should be the organisers. He felt this would produce a much more relaxed and informal atmosphere. He was right. The congress turned out to be a great success and was still talked about many years after it had taken place.

From my point of view the timing was less than ideal. To be honest it was the very last thing I needed. I had just taken over running the department. I was coping with a huge work load. My wife was fed up and did not hesitate to tell me. I was very conscious of been handed the torch of Oxford neurosurgery whose reputation received world wide recognition in those days, albeit perhaps a little dated by the time I was appointed.

It was part of my job to teach and to foster research. I greatly enjoyed teaching; I did an early morning ward round with all the staff and saw all the patients. Since Dick was away so much I found I was seeing his patients as well as mine

and making decisions about whether further investigations and/or surgery should, or should not, be done. As these decisions were made on a continuous basis we were a very efficient unit. Once we had done what was possible we returned the patient to their local hospital with dire warnings that we could not admit their future neurosurgical patients unless they were cooperative in taking back their previous patients without delay. This was necessary having only 21 beds to serve 3 to 4 million population.

I very much enjoyed my dealings with the EANS. Richard Johnson was an ideal president being able to overcome the inevitable cultural differences by his charm and overt decency. I became very fond of him. He too had been in one of Cairn's mobile neurosurgical units during the war, his one being based in Burma as this country was then called.

The EANS committee was fascinating because the members reflected their countries of origin. The next President was from Paris; Bernard was short and prickly. The secretary, Jean ('I am the king maker') was from Belgium. Hans was Dutch and a most agreeable man. His wife was much loved for her warm personality ('La belle Helene'). There were two Germans, Hans and Fritz who I got on with very well although they were both rather forceful personalities. I particularly liked the Spanish representative, Sixto. He in fact had trained in Oxford and married his Oxford landlady's daughter who became in time a rather grand, and indeed rather expansive, Spanish lady wearing black lace outfits. What a story that must have been.

I well remember one committee meeting chaired by Bernard. Bernard was keen to push through a rather contentious issue. He asked for, 'hands up those against'! Sixto waggled his finger at Bernard and told him, 'No Bernard, in Europe we first ask for those in favour and then secondly ask for those against'. I then appreciated that membership of this committee would be certainly entertaining.

Following the success of the EANS meeting at Oxford, the committee very kindly asked me to join them. I was flattered. I greatly enjoyed their company and

would have enjoyed the travel around Europe that such a post would entail. However I soon realised that this would not be possible. I was running the department at that stage pretty much single handedly. Also my then wife had taken against neurosurgery and neurosurgeons in general and against me in particular. With great sadness and with complete honesty as to why, I resigned from the EANS committee.

European neurosurgical departments are each based on a University. The committee members were all professors who were all powerful. Their departments had a pyramidal organisation; indeed so pyramidal that they were almost needlelike. No one disagreed with the Professor. He had absolute power over the careers of all members of the department irrespective of their age and seniority. I remember a world famous, but second in command, in a Swiss neurosurgical department chaffing at the restrictions imposed on him by his Professor and that was the case in every European neurosurgical department and no doubt still is the case. So if the Professor wanted to have a few days away on EANS business, then that was no problem.

I confess it sounded wonderful. I had always felt that benign autocracy was the appropriate way to run a department but the professorial 'dictatorship' certainly seemed to have its attractions especially at that time of my very pressured life. This professorial way of life was not confined to continental Europe. It happened in most professorial departments in Oxford and I am, once again, reminded of at least one professor with a constant tan, who was away for a great deal of the of the time, armed with a bag that had an uncanny appearance to that of a golf bag.

Relations between NHS and university departments were sadly often strained in Oxford and I confess to often wondering how much of the research done by university clinical departments actually changed practice. Changing practice to me was the acid test of the efficacy of research, certainly clinical research, as opposed to 'basic science' research.

Chapter 14

MARRIAGE AND DIVORCE. 1977.

1977 was not a good year for me. Indeed it was my 'annus horribilis'. The interaction with my wife's lawyers started in August 1977 while I was still living with her. She had expressed displeasure about the demands of my work increasingly frequently and increasingly vehemently. Out of the blue I received a long letter from her obedient and compliant solicitor listing my many deficiencies. This was written on coloured paper but without the perfume. Indeed quite the opposite for it was soaked with venom. This letter arrived at my home and I proceeded to read it while she watched me do so. I was flabbergasted having had no idea that she had been to see a solicitor. I went to work that day feeling shell shocked.

The reader may recall that at that time of my life I was the senior, but very young and inexperienced, surgeon running the neurosurgical department. I was very upset by this letter which did not hold back in any way from avoiding hurting my feelings. I wondered if I should give up being a neurosurgeon but the thought of becoming a general practitioner and giving up operating did not appeal. I fully accepted that I had put my patients first. It was the only way I could cope with the inevitable problems to know that I had done my very best. At the same time I also did my very best to provide for my family.

I admit to my propensity, after a day of operating, to falling asleep at rather posh dinner parties. This infuriated my then wife and did little to facilitate her desire to have horses and frequent with the smart 'county' set. The sleep was not deliberate.

I was asked to remove myself from the family home. We had been there for 3 or 4 years. Previously it had been the Christ Church Kennels for their foxhounds. The house was dilapidated while the garden was much over grown with nettles and rusting dog runs. When we first moved there in 1974 there was much to be done in the house and the garden. I had worked hard at clearing the garden. I spent virtually all my money doing up this somewhat ramshackle house in the hopes that this, together with my efforts in the garden, would please my wife. Obviously my efforts had not.

By this time I felt pretty miserable and tired. I discovered how incredibly difficult it is to have a sensible conversation when somebody is screaming at you. There is nothing more likely to sweep all thought and words away, when one is being shouted at to, 'say something'. I felt rather like a dog's bone that had been shaken and tossed about. How much longer could I cope with my responsible job in this situation?

Looking back we were very different. Perhaps she should have gone to art college but her middle class parents wanted her become a physiotherapist because they thought art colleges were dens of iniquity. She never really used her physiotherapy. If she had been to an Art College she might have become fulfilled and things might just have turned out differently but I rather doubt it. She was very artistic. She had also an artistic temperament and a propensity to hit the children. I found this and their anticipatory wincing difficult to watch. Other times they would be sent to their rooms to await my return from hospital. I would be instructed to beat them. I remember doing this in an extremely half hearted fashion in order to maintain the notion of parental solidarity. I think my own school beatings had rather influenced me against corporal punishment and I was certainly less of a disciplinarian than my then wife. Seeing people dying of inoperable brain tumours somehow made me less inclined to inflict physical pain on my own children.

Ironically the last evening I spent at this home coincided with the 'last night of the proms' in early September 1977. Whenever I hear this raucous and happy

music I think of that night.

We tried mediation but the break down of the relationship was clearly all my fault so that did not work. The one thing looking back that I cannot accept is using our four children as weapons. I remember my children were not allowed to contact me. My eldest son had to escape from the home to run to a public phone box to ask me to come and watch him play rugby at school. Of course I went to watch him. It is amazing what people will do to their own children in these circumstances.

Indeed no agreement was possible about anything without recourse to a hearing in front of a Judge. I still find this rather extraordinary but perhaps this was a form of revenge that my first wife was so intent upon extracting. I strove to maintain contact with my children of this marriage and despite the difficulties, the children, now of course adults and I, have a close relationship.

Divorce was less common in those days and considered reprehensible. She wanted the world to know it was not her fault. If she could have destroyed my professional reputation she would have done so.

Her family announced that they would impoverish me ('take him to the cleaners', her parents told her) and employed, at my expense, an expensive Queen's Council (QC) called Matthew. It was noteworthy that her solicitor made no attempt to cool the emotional fires. Indeed he was quite happy to fan them, which I suppose earned him more money. One hopes that family law solicitors nowadays have rather more sense, and indeed rather more sense of responsibility particularly towards the children of the marriage, than this one showed. Matthew, tall, thin and somewhat scruffy, became a High Court judge but I can still see the very grubby plaster around one of his fingers which he fiddled with incessantly while addressing the judge.

I felt the need to learn how to defend myself. So I bought a splendid little book by Sir David Napley called 'the Technique of Persuasion'. It was for lawyers and explained how to 'examen' and 'cross examen' poor innocents such as myself. I avoided 'the cleaners'. But it was thus perhaps thanks to my first wife that I

came very interested in the law and proceeded to have an enjoyable part time career as an expert witness.

But after the divorce I was miserable. I immersed myself in my work even more than usual. My work was a great solace.

Chapter 15

EASTER TRAGEDY

Every Maundy Thursday I remember little Ian. He was 18 months old and was playing on some concrete steps outside his home. He fell down two steps and banged his head but not particularly severely. The next day, Good Friday, he was initially well but by the evening he became drowsy and was sick. By Easter Saturday he was worse with more vomiting and further drowsiness. That evening his general practitioner admitted him to the local hospital. A diagnosis of viral encephalitis was made; that is to say inflammation of the brain by a virus. I presume the bang on the head was so slight that it was ignored. I have always regarded the diagnosis of 'viral encephalitis' with the deepest suspicion and when we were contacted on Easter Monday I advised immediate admission to the Radcliffe Infirmary.

When I saw him he was unresponsive, unable to breath on his own, his pupils were large and did not contract when a beam of light was shone into the eyes. These are all the features of a brain so damaged to be incapable of sustaining life. It is called 'brain death' or more accurately 'brain stem death'. Death is due to the stem or stalk of the brain being mortally squeezed and distorted.

We carried out an angiogram. This test outlines the arteries and veins of the brain. When there is 'brain death' the swollen brain prevents any circulation of blood into the brain. The cause of his death was not a virus but a blood clot forming within the skull but outside the brain. It is called an 'extradural' haematoma and is easily curable by making a hole in the skull with a drill to evacuate the blood clot. Ian came to us too late and could not be saved.

I admitted him to the Intensive care ward and pushed another bed up against his bed so that his mother, father and family could cuddle him. Once the diagnosis was established after a further day's delay the parents asked us to switch off the breathing machine.

Neurosurgeons have a duty to try to educate other doctors about raised pressure in the head. The boney skull is similar to a closed box. If anything abnormal expands in this box the pressure rises. Raised pressure in the skull causes sleepiness or drowsiness and later makes one or both pupils dilate. Unless the pressure is relieved breathing stops and death occurs. An extra dural blood clot is particularly poignant because it is caused not by a brain injury but by a crack or fracture of the skull, usually in the thin temple area. This tears the 'middle meningeal artery' that travels in this part of the skull. Blood forms between the skull bone and the lining of the skull, called the 'dura', so called because it is a tough, thick, 'lasting' or 'durable' membrane. Hence the blood clot is 'extra dural' or outside the dura and brain but inside the skull. The blood clot, so formed, then strips more dura away from the skull which induces more bleeding and so on. A sort of 'perpetual cycle' of tearing the dura from the skull and more bleeding.

If the diagnosis is made and the clot removed then recovery can be complete because this blood clot develops following a skull injury without any 'primary' or initial brain injury.

That is why Ian was so comparatively well immediately after the fall; there was bone injury but no brain injury. One does not have to be a neurosurgeon to safely drill a hole in the skull because this clot has pushed the brain away from the skull so there is little risk of damaging the brain from making this hole. Indeed quite the opposite because by making a hole and releasing the clot and so relieving the pressure, one is saving the brain and brain stem from eventual severe and irreversible damage.

The reality is that doctors untrained in neurology or neurosurgery often fail to recognise increasing pressure in the head. It is not always easy. There maybe an initial blow to the temple with some transient concussion (that is a loss of memory for the actual blow and shortly afterwards) but then the patient 'wakes up'. Often people do not become actually unconscious but they interpret the period of time that they cannot remember as being 'unconscious'. Only a witness

or observer, can know if the person was truly unconscious or perhaps awake but confused.

The drowsiness, due to the rising pressure distorting the brain stem or stalk of the brain, does not occur for several hours or even days. The headache may be ignored. The ambulance may be waved away because the patient is better, as happened to the film actress, Natasha Richardson after a skiing accident who subsequently and very sadly, died from an extradural blood clot. Perhaps the patient has been drinking and fighting so he is put in a police cell to 'cool off' only to be found dead the next morning. This apparent recovery phase is called a 'lucid interval'. It is the time interval between the initial concussion, at the time of the blow to the skull, and the onset of unconsciousness due to the rising pressure in the head causing brain stem damage. 'Lucid', I have always felt to be misleading; the patient maybe awake but confused, but 'lucidity' of the patient is not a description that springs to mind. Furthermore lucidity of thought is often absent from the medical or nursing or other attendants of the patient, the true diagnosis being not suspected or made.

Several years ago I made posters instructing orthopaedic surgeons and others, how to drill a hole in the skull. I circulated these posters to all the nearby accident units. Minutes may make the difference between death and recovery, so the operation must often be done as an extreme emergency. Frequently, indeed often, there is no time to transfer the patient to a neurosurgical unit. This transfer can be done once the hole has been drilled in the skull bone to allow the clot to spurt out. Only then should the patient be transferred to a neurosurgeon, even if the hole is left open during the transfer.

I remember reading in the British Medical Journal (BMJ) how someone's life was saved in the Malaysian jungle by a non neurosurgical doctor drilling a hole in the skull with a Black and Decker drill. There was nothing to lose because the patient would have died anyway if nothing was done. Well done indeed!

But the fact is that in most countries the only way the majority of non neurosurgical doctors are going to diagnose a blood clot such as little Ian's, is by

doing a CT (Computer Tomographic) scan. We neurosurgeons have failed in our attempts to educate the general medical, and especially, the orthopaedic surgical community, despite our best efforts.

Ian's injury happened in 1988. I wrote, with the parents' permission, a letter to The Times newspaper describing Ian's illness and emphasising the only way that this so curable condition can be diagnosed and treated is by making CT scans generally available. Not just available in the day time but 'out of hours' and weekends when accidents are more likely. Hospitals were in those days very reluctant to pay radiographers to come in at night time to work the new scanner. It was one thing to collect money to buy a scanner but another thing to run it at the times when it is most needed. My letter to the Times precipitated many requests by local groups to use this letter. These groups were collecting money to donate a scanner to their local hospital. I hope some good came of this tragedy. Strangely the referring paediatrician was furious that I had written to the Times even though I made no mention from whence Ian had come.

I always remember little Ian at Easter.

'I did not know you were so emotional'. Several colleagues expressed slightly sarcastic surprise that I was so obviously emotionally moved by Ian's death. I was moved, and still am, by this unnecessary death but also by my—our – failure to educate our medical colleagues about high pressure in the head and how to diagnose it. I make no apologies for being easily moved. I am thankful for it because I hope I am a better doctor for it. I do not perhaps show or feel emotion while operating because that is a technical job that has to be done. But I do feel and show emotion when I am thinking about my patients.

Chapter 16

NEUROSURGERY; EARLY DAYS

What is the best way to run any department? I have often pondered about this. In the 1970s the neurosurgical department was very much a small family affair. Doctors talked to nurses and nurses talked to doctors. We managed to get Mary, a physiotherapist, appointed in 1972. The department seemed not to need a physiotherapist prior to Mary. She stayed with us for the rest of her career which gives witness to the family atmosphere that existed in the department. We hardly ever cancelled patients' admissions or operations. Overseas visitors came and photographed our operating lists incredulous that we could get through so much work. We tried to be the best we could be. The morale was high. The staff were happy.

The junior medical staff were outstanding. Many came from overseas and I continued Joe Pennybacker's method which was to keep a long scroll of paper with names and dates on it. Anybody applying for a senior house officer (SHO) post would be seen and then their name would be placed on the scroll. We were booked up about two years ahead. Some SHOs were better than others but on the whole they were excellent. It seems that if someone had the initiative to apply, then they were keen and hardworking. No need for advertising. No need for a time wasting committee. Now of course all this has changed so that every six months the 'Human Resources' (HR) department advertises the post, applications are short listed 'blind' so names are unknown (to be politically correct) and finally a formal appointments committee is created which deliberates, tying up 3 or 4 neurosurgeons and external members, for several hours.

Sebastian was appointed consultant instead of Dick. The choice was essentially mine and I have long wondered about the best way to make consultant appointments. Sebastian was very different to me and I can hear people saying,

'thank goodness for that'. I have noticed that in many departments there is one dominant person. Two dominant people result in disagreements and trouble. Fortunately Sebastian, a thoroughly decent, and nice man, seemed content to let me continue to run the department in my rather high handed manner of seeing most of the patents and making most of the decisions. I felt the weight of Oxford neurosurgical history on my shoulders. Possibly he did not feel this responsibility as much as I did, and, as often happens, he found a very successful niche doing craniofacial surgery (that is correcting skull deformities in children) in conjunction with a plastic surgeon. Rather like Edward finding head injuries to look after in Oxford and Peter Schurr becoming the sub dean at Guy's Hospital.

Other problems arise when departments grow in size. There were two consultants to begin with in 1972 but there are now 16. There is not enough operating time to occupy 16 neurosurgeons. When I started I did the paediatric surgery (the children) as well as the adults. I left the stereotactic surgery (that is through a needle) for Parkinson's disease to Sebastian but otherwise I did the full range of neurosurgery.

It was then decreed by the paediatricians that any surgery on a child had to be done by a paediatric surgeon and that includes emergency surgery. But one cannot be a single handed paediatric surgeon doing all the 'on call', so one other, then two more, were appointed to make 4 paediatric surgeons in post. Is there enough routine work for four paediatric consultant neurosurgeons? No, not at all. I only recount this to show how the costs of the NHS have escalated while the productivity has subsided.

How one should organise the NHS has yet to be solved. Most of us are deeply frustrated by the petty savings that chip away at staff morale while the massive waste arising from bureaucratic mismanagement passes seemingly unnoticed. No one would be allowed to run a department nowadays in the efficient way we ran neurosurgery in 1975. Doctors at one time were largely excluded from management and only now is it realised that it is the doctors who are best suited

to running hospital departments. In my darker moments I would ask myself how many young people have I heard say, 'I want to be an NHS manager when I grow up'. The answer is, 'none' which rather suggests they have tried something else and gravitated second hand to the NHS from some other job.

I am reminded of an excellent article by Hill, Mellon and Goddard on 'How Winning Organizations Last 100 Years'. These authors studied organisations that have stood the test of time. The Royal Academy of Music, Eton College, New Zealand Rugby team, The Royal College of Art and some iconic businesses such as BMW and Apple etc were studied over several years. Their conclusions are important: The successful organisations do not try to get larger, but better. They want to be the best in the world. Egos are discouraged. Bosses are kept in post for at least 10 years and the handover is gradual so there is an overlap between the outgoing person and the incoming one. Most appointments are from within. Elements of disruptive behaviour at the margins are encouraged. Outsiders are encouraged to contribute as part timers. The perspective is long term. Finally they ask themselves 'and how can the employees exist like a family'?

The NHS differs in almost every way: The Chief Executives last no more than about 2 years on average. Disruptive behaviour is very discouraged. A lack of transparency is rife. Senior managers are appointed from outside with little knowledge of the work done at the 'patient face' or coal face. Criticism and adverse publicity are hated. The management attempts to suppress criticism by threats and even blackmail.

Merit awards, that is extra money paid by the NHS, used to be given to medical staff who, their medical colleagues thought, were doing outstanding work in difficult circumstances. The size of the awards varied from a top A plus award to a C award. The first step is to be given a C award and then gradually proceed to, after many years, an A plus award if one is considered of 'international stature'. The whole business of awarding these merit awards was meant to be cloaked in secrecy; a pious hope indeed. As Lord Franks (a near neighbour

when we lived in Charlbury Road) once told me, 'the Oxford definition of a secret is to tell just one person at a time'! The 'Regius' professor of medicine, Sir Richard Doll, was responsible for putting forward the names of the Oxford based people for these awards. The 'Regius' is the senior university medical professor and means 'appointed by the Queen (Royalty)'.

I was critical of these 'merit' awards because, perhaps not surprisingly, too many went to the academics for publishing articles, often of dubious value, and attending conferences in sunny climes. It was the single handed consultant who himself had to get up in the night who 'merited' these awards rather than the professor surrounded by many keen acolytes. I would be very surprised if any Nuffield professor ever got up in the night. Perhaps I can hear them say, 'we are not paid to get up in the night'. Possibly true, but just maybe they do not merit a merit award in that case. But of course most of the professors had the top merit awards while the long serving single handed consultant in a small peripheral hospital, without junior doctor support, was hardly ever awarded one; not even the least valuable, C, merit award.

I suppose I must declare my interest in these awards because I was awarded a C merit award when I found myself running neurosurgery largely on my own as a newly appointed consultant; Dick was away 8 months in the two years he was at Oxford. I believe that one of the neurologists kindly put me up for this award. Later the way these awards were given changed. They are now given, not for merit on the recommendation of medical colleagues, but by hospital managers for good and cooperative consultant behaviour! In other words for the 'non-rockers' who are nice to the hospital managers. These awards really should have been abolished long ago.

On the whole I got on well with my anaesthetists. I did try, rather optimistically, to introduce the concept of having 3 operating sessions per day rather than two, feeling this would be a better use of 'fixed' capital resources like operating theatres. This did not go down at all well with one senior anaesthetist, Patrick, who came into my office with a very long face saying he had never been so badly

treated in all his life. Actually the truth was that he wanted to become ordained as a parson, and that seemed to take up a lot of his time, occasionally, I thought at the expense of some of his NHS work. He did indeed become ordained.

The best anaesthetist I ever had was a delightful lady with such a soothing, confidence inducing, Scottish accent that it almost lulled one to sleep without any anaesthetic being required. Jean Millar had the great attribute of being not only outstandingly good, but unfailingly cheerful.

Anaesthetists do, some tell me, feel psychologically very vulnerable because they are always subservient to the surgeon's wishes. Actually not quite, because they can decide not to turn up. This happened to me once. My parents gave me, in their wisdom, 3 names which together with my surname added up to having the initials 'CBTA'. My operating list was chalked up on a blackboard the day before the surgery with my initials over the operating list. The new anaesthetist did not however turn up in the morning. When I enquired why he had not arrived, he replied that he thought 'CBTA' meant 'Come Back Tomorrow Afternoon'.

During this busy time my experience grew enormously. I realised that very occasionally there were some patients who I should send elsewhere. One such patient was Mrs Roberts, a lady in her 60s with a rather sad looking face. I suspect she was depressed as well as having troublesome back and leg pain. A bad combination. I saw her on several occasions in outpatients. Each consultation lasted about an hour. Each time I wrote a lengthy letter to her doctor, sending her a copy. The letter described as fully as possible all the risks of the surgery and the chances of her being helped or not helped. Yet she came back a second time and asked the same questions over again and indeed a third time. At this stage I felt she had lost confidence in me and I had definitely come to the conclusion that she would complain vociferously after any surgery that I might perform. I decided to refer her to an experienced colleague in London. I never heard how she got on but I hope well.

Very occasionally one's sixth sense tells you to move aside and let someone else

deal with a patient such as Mrs Roberts.

I had become, for reasons I am unclear about, the 'go-to' surgeon for many of the Jehovah's witnesses. I suspect at one time I thought one could quietly transfuse the patient and change the blood transfusion set to disguise the fact that blood had been given. In fact I never did this having learnt that if such a transfusion had been discovered then the patient would be excommunicated from the sect. However what to do became much more difficult when a child of the sect requires surgery and the parents forbids their child receiving a blood transfusion.

In general operating on any child necessitates any blood lost to be quickly replaced. I would routinely ask the anaesthetist how much blood they thought had been lost. I found doubling this estimate usually provided a more accurate figure. But not being allowed to transfuse a child during a major operation was a major challenge to the team.

I was referred a boy with a brain tumour from Liverpool whose Jehovah Witness parents forbade any blood to be given. The Liverpool surgeons refused to operate which was a not unreasonable approach. I did agree to operate and I removed the tumour taking every precaution to minimise blood loss including cooling the patient (with ice packs) and dropping the blood pressure (with drugs) for much of the operation. A very white patient, together with a fairly white anaesthetist, both fortunately survived the operation.

I have had my share of disasters; keeping a disaster book in my desk was a constant reminder to avoid hubris and remain humble. Being dyslexic meant that I had had to habitually work harder and think more deeply, perhaps more so than my brighter contemporaries needed to. Finding myself at a very early age doing operations I had not seen done before, inculcated an obsession about understanding the anatomy as well as examining the X-Rays and scans of the patients, before discussing or doing any operation. The best surgeons are usually the best anatomists. All this helps to avoid disasters but there is no full proof formula that I know that prevents problems; thinking about patients, examining

patients (and the tests) as well as talking WITH patients as opposed TO patients are the only ways I know. When disaster happens one can only be honest but if one has indeed been honest before the operation and the patient and relatives have seen and heard your careful assessment of all the factors preoperatively then they will know that you have done your very best. One cannot promise more than that. But it has to be your very best.

In 1998 I published a small book for neurosurgical trainees ('A Neurosurgeon's Notebook', now available for free online, www.aneurosurgeonsnotebook.com) and I elaborated 17 rules for 'a happy and trouble-free neurosurgical life'. This unusual, eclectic, little book was well received. The masterly foreword by my eminent friend, Michael Apuzzo, describes the challenges of learning to be a neurosurgeon, better than anyone I know.

Most of my 'rules' of neurosurgery I have already mentioned but it might help to summarize them. Taken together they constitute good guidance for preventing surgical troubles which is obviously very relevant to patients as well as surgeons. The most important is to embrace the KISS principle. That is 'keep it simple and safe. For 'simple' think 'clarity of thought' which is essential for not only deciding what to advise but also how to communicate this advice. Being sceptical, not treating scans but people, and taking time to talk with patients not to patients, all come high on the list. The need to see and encourage the patient the evening before the operation—a 'touch of Harry in the night' is so important because the operation is possibly the most important event in that patient's life. The vital necessity of having the scans and X-Rays visible in the operating theatre as well as the need for the surgeon to position the patient on the operating table. Too often that vital task is left to a trainee. Keeping a disaster book is highly recommended to preserve humility and prevent hubris. The surgeon needs to realise that light travels in straight lines so keep the retractors straight! Too often one sees bent or curved retractors which serve only to unnecessarily compress and damage the brain without improving the surgeon's visibility. I stress that good judgement and good decisions depend on attention to

detail and clear thinking. When to be bold and when to show discretion? It helps to invoke that KISS principle again which is an essential component of judgement! Finally and perhaps surprisingly, I repeat the oft quoted comment that, 'a happy surgeon is a lucky surgeon'. Actually I believe a comfortable stress-free surgeon makes better decisions and operates better than a tense, stressed (and tired) surgeon. That makes him 'lucky'. Too often 'simple' operations are the ones that go wrong, simply because the surgeon has not felt the need to think about it. To this list one can add the need for the surgeon to understand the basic, but so important, principles of the actual operative technique: Being gentle with the tissues, finding and staying in the correct anatomical layer, stopping bleeding and preventing infection all depend on good technique. I have already mentioned these elsewhere.

Just occasionally having taken all necessary steps, complications can unfortunately and inexplicably happen. For instance I remember three patients whose ruptured aneurysms I had successfully 'clipped' though an incision in the front part of the head; with all three patients the operation had been unusually quick and straight forward yet these three each developed a stroke in the cerebellum or little brain, situated at the back of the head, nowhere near where I had been operating. I have thought long and hard as to why this incredibly rare complication happened. But such an event could not have been anticipated. That I fear is occasionally, very occasionally, what can happen after neurosurgical operations.

I have always resisted operating abroad and when persuaded otherwise, have usually regretted it. I have trained several really excellent Egyptian neurosurgeons who returned to their home country to work. One contacted me and asked me to operate on a patient with a bi-lobed, or a 'double ballooned', aneurysm arising from the tip of the basilar artery. An aneurysm, or ballooning out of an artery usually consists of a single balloon. This patient had not one, but two balloons, arising from the tip of the basilar artery, an artery which is adjacent to the all important stalk or stem of the brain. The tip of the basilar

artery is exactly in the middle of the skull tucked underneath the brain, so can be difficult to get to.

Such single balloon aneurysms arising from the basilar artery are at best a challenge but I had done about twenty such aneurysms and felt confident dealing with them. The important thing is to dissect away the very small arteries next to the neck of the aneurysm arising from the basilar artery supplying the brain stem or stalk. I usually approach this sort of aneurysm from the right side (one avoids the left side because there resides the 'speech' area of the brain) but this right sided approach means it can be very difficult to see these very fine but vital vessels arising from the 'hidden' left side, near the neck of the aneurysm, on the opposite side of the operative approach. Imagine trying to see around the other side of the 'stalk' of a pumpkin or a trunk of a tree.

This patient in Egypt had however a 'double balloon' aneurysm which made seeing these fine vessels even more difficult because the neck of this aneurysm was unusually broad. This neck very effectively hid these tiny left sided vessels from the right sided view. The prognosis without operation was very poor because of the particularly high risk of the aneurysm rupturing again.

I agreed to operate.

The operation, I thought, had gone well. But much to my distress the patient failed to wake up satisfactorily. I must have inadvertently included one of these fine vessels, on the left hand side of the neck of aneurysm, in the spring clip. The patient became 'locked in' due to 'a stroke' of the brain stem. He could breath and move his eyes but little else. There was nothing I could do. I was devastated. I flew back to the UK feeling very miserable and upset. My only consolation was that I had done my very best. Sadly this is not always enough, as was the case with this patient. There can indeed be a very fine line between success and disaster in neurosurgery; probably in this patient a single, one millimetre, artery that I had not seen but had included in the spring clip that I had placed across this broad aneurysm neck, caused a stroke of the brain stem. This represented the fine line between complete disaster and complete success.

On another occasion I was asked to go to Cyprus to operate on a patient with a ruptured aneurysm. I later discovered that it was the relatives who had asked me to go. When I arrived not only was it clear the surgeon looking after the patient very definitely did not want me there, but I also found the equipment for this sort of surgery was inadequate to say the least. I was happy to bow out but the relatives insisted that I should be involved. The patient apparently was of some standing in the community. Eventually a ridiculous compromise was reached so that the home surgeon and I took turns to do the operation. Furthermore there was an inadequate selection of spring clips to apply to the neck of the aneurysm. It is necessary to have a variety of different shaped clips, straight, curved, angled, fenestrated and bayonet shaped because when never knows which clip is appropriate to any particular shaped, or situated, aneurysm. This aneurysm was successfully clipped off but I then and there vowed never to operate abroad again. I never did.

Chapter 17

CURING HARRY' S EPILEPSY

Very occasionally just one patient can change the whole approach to a medical problem. Harry was one such patient. Harry was smashing up his home as well as his sister. He was twelve years old. Harry however transformed my, and I suspect others, approach to the surgical treatment of epilepsy. Let me explain. Epilepsy surgery was being done by Penfield and Rasmussen in Montreal from the 1920s. This was done mainly on children when it was felt there was a 'focus' of electrical activity in the brain. This focus was thought to be responsible for a sudden deluge of electrical activity in the brain leading to an epileptic attack. The Montreal method was to operate with the child awake so that the electrical activity could be recorded directly from the brain using the EEG 'brain waves' (electroencephalogram) as well as observing the awake child's speech and hand movements. Where the EEG showed a focus of abnormal electrical activity (called 'spikes') Penfield would suck away this part of the brain until there were no more abnormal spikes. This was called rather disrespectfully by the rest of the neurosurgical community as 'spike chasing'. This did not produce adequate material for the pathologist to examine because the removed brain went down the sucker in tiny fragments, but it did produce a lot of interesting research papers. That is research papers, particularly interesting to scientists.

Clearly this is a massive operation for any child to undergo and because of this, by 1975, neither of the two paediatric neurologists at Great Ormond Street Hospital in London would refer a child with epilepsy for consideration of surgical treatment. I could see why.

I had, of course, worked with Murray Falconer at the Guys Maudsley neurosurgical Unit in 1970. His main interest was the surgical treatment of epilepsy. He too was a 'spike chaser' albeit perhaps a closet spike chaser. I suspect he was having some doubts about the Montreal approach but did not feel like airing them.

There is a particular type of epilepsy called 'psychomotor epilepsy' arising from part of the brain called the temporal lobe, that is the part of the brain adjacent to the temple.

'Psychomotor' epilepsy is a strange type of epilepsy with the patient experiencing an indescribable smell (often like fresh grass cuttings or burning rubber) and a sensation that rises up from the stomach towards the throat. This is the 'psycho' part. An observer might see the child smacking their lips. This is the 'motor' part. Some get 'deja vu' or 'deja entendu' i.e. episodes of having seen or heard something before, such as an aeroplane flying overhead in a particular place. Others get 'flash backs' of memory. Yet others enter a 'fugue' or dreamy state. They can go shopping, cross roads, pay for goods without having any memory for these activities. The first person to describe this 'dreamy' or 'fugue state' was a Swiss doctor who found he had climbed a most precipitous climb up a mountain without any memory for so doing. When he died it was found that he had a small tuberculosis abscess in one of his temporal lobes.

Children with this epilepsy often have very difficult and disruptive behaviour. Sometimes the behaviour is unimaginatively bad and it is difficult for anyone who has not actually experienced this, to appreciate its effect on a family. I think this behavioural change is due to epileptic discharges interrupting normal brain activity. If the epilepsy stops, the behaviour improves.

Sometimes the cause of this epilepsy is from a small area of abnormally developed brain, rather like a birth mark. The pathologists call these 'hamartomas' and they may contain calcium or chalk.

Harry lived in the north of England. His epilepsy, starting when he was 12 years old, was typical psychomotor epilepsy arising from the temporal lobe. His behaviour was a major concern. He was destroying the home. Doors were smashed. Friends could no longer be invited back to the home and Harry's schooling ceased. He was investigated locally and the EEG showed 'spikes' or epileptic activity coming from BOTH temporal lobes.

He was referred to Murray Falconer in London who told the family that

surgery was not possible because both temporal lobes were producing 'spikes' on the EEG. One cannot remove both temporal lobes without a devastating loss of memory; so devastating in fact that people can no longer remember their own names.

Dr Kit Ounsted ran the Park Hospital for Children in Oxford. He was a remarkable man and doctor. He was trained as a paediatrician as well as a psychiatrist. Bad adolescent behaviour and epilepsy affecting children were his major interests. He had a world wide reputation. His empire was the Park Hospital in Oxford at which he was the sole consultant. He had a good head of silver hair just visible through a haze of inevitable cigarette smoke. There was a noticeable tremor as he bought the cigarette to his lips. Inhaling seemed to help thought, which in his case was often lateral thought. Perhaps even more than just 'lateral' if that is possible; quirky, refreshing thought seemed to delight him. He would refer patients to Murray Falconer in London for epilepsy surgery and I remember seeing several of his patients while working with Murray.

Neither Pennybacker nor his younger colleague in Oxford were interested in epilepsy surgery, so Kit Ounsted was delighted that I had been appointed at Oxford and encouraged me to start this sort of surgery, especially as Falconer was within a few years of retirement.

After Harry had been turned down for surgery by Murray Falconer, he was referred to Kit Ounsted as a 'port of last call', really out of desperation. Anyone who has lived with someone with frequent epilepsy can understand the enormous burden on all members of the family, especially from the difficult behaviour. It is indeed a living nightmare. Kit Ounsted, although he had enormous respect for Murray Falconer's opinion, decided to ask me for my opinion.

We had no scans in those days. I studied Harry's plain ordinary X-Rays of the head. Although no one, including radiologists had noticed it, I was certain there was a tiny speck of abnormal calcification or chalk in the right temporal lobe. For a long time I had been very unimpressed on the reliance of the EEG test. It

looks an impressive test but it was far from precise. I felt epilepsy surgery should be like any other surgery. That is finding and removing abnormal tissue. So I recommended the removal of the observed calcified tissue in the right temporal lobe despite the EEG showing equally marked 'spikes' arising from both temporal lobes. This operation, I told the parents, would be done under a general anaesthetic.

Looking back I was indeed sticking, not only my head and neck, but also my torso, well and truly out. If I had been wrong then Harry might have been wrecked. After all my very experienced, world wide respected, former boss had turned Jeremy down for surgery. Curiously I was so certain about my advice I never felt worried or anxious about it. Perhaps it was the confidence of youth. But I was convinced about this 'chalk' and for me that was the essential observation.

I had, of course, thought deeply and read widely about the surgical treatment of epilepsy. After all Victor Horsley in the 1890s at Queen Square had successfully operated on people with epilepsy. Horsley's patients had had gun shot wounds to the brain. In those days gunshots were of low velocity so the brain damage was relatively localised. Horsley removed the damaged scarred brain with encouraging results regarding stopping the epilepsy. Penfield in Montreal changed the basis of epilepsy surgery from removing scarred brain to 'chasing spikes'. Perhaps it was time to move back to removing abnormal brain rather than chasing spikes.

It was fortunate that Kit Ounsted also agreed; many in his position would not have had the courage to agree with me; a young newly appointed and inexperienced consultant. But Harry's outlook was so poor the risk seemed to us and his family, to be worth taking.

Accordingly I carried out an operation on the right temporal lobe of the brain. I found a small calcified 'birthmark', or 'hamartoma' in the area of the calcification and removed it by carrying out a 'right temporal lobectomy'. That is to say the lobe of the brain in the region of the right temple. The immediate

post operative EEG showed ALL the abnormal spiking coming from BOTH the left and right temporal lobes had disappeared.

Harry has never had a fit since. His behaviour immediately returned to normal. His sister was no longer being hit several times a day. Friends could be invited home and normal family life resumed. The house was repaired. After 6 months he gradually stopped taking anti epilepsy drugs. He went back to school, regained his ability to concentrate, eventually going to university. He became a photographer and got married. An unimaginable outcome.

So we learnt from Harry that an abnormal area of brain on ONE side can cause abnormal spikes on BOTH sides. This was indeed a momentous finding and confirmed in my mind the importance of finding and removing a localized pathological abnormality in the brain, rather than 'spike chasing'. If such an abnormality is found and removed then there is a high chance that the epilepsy will be cured as is also the behaviour; furthermore it is not necessary to do this surgery with the patient awake. This made the surgery so much more acceptable.

When I presented our findings and conclusions concerning Jeremy in Los Angeles it was apparent that the EEG specialists were very defensive and upset. Indeed one such person said, 'how on earth could you have advised such an operation with spikes coming from both sides of the brain'? But we could. The implication was that we had taken an unreasonable risk. Indeed it was suggested that we had been negligent. But we had not been negligent, just observant. This response is of course understandable when one's professional standing is called into question.

I witnessed the same response from surgeons who had been trained just to operate on aneurysms. They felt very threatened when radiologists became able to treat aneurysms through a small catheter rather than by surgery. Their response is to say the new method is either wrong or less good. Only time clarifies and adjudicates these professional disputes. If I ever have a ruptured aneurysm I know which procedure I would want!

I had another young patient with near continuous epilepsy affecting his right thumb. He was 10 and came from North Africa. The scan showed a 'hamartoma' in exactly the 'thumb area' of the left cerebral hemisphere responsible for movements of the right thumb. Removal of this 'hamartoma' or birthmark, stopped his epilepsy.

About a year later his father suddenly appeared without warning in my office, to report on his son's excellent progress. The father, dressed in his splendid Arab regalia, was delighted. 'My son has stopped having fits. He is doing well and is going to be a doctor'. The father clicked his fingers and two older sons bought in a large rolled up seventeen foot carpet balanced on their shoulders. The carpet just fitted into my consulting room. That evening I struggled home with it sticking out of the boot of my car. As far as I know my then wife still has it. These patients and their families are so grateful.

Relating epilepsy to an actual localised pathological abnormality of the brain, identifiable on a scan or X-Ray was a breakthrough. The advent of scans has of course made finding such areas of abnormality much easier.

I went through a phase of being upset when paediatricians initially refused to refer children with curable epilepsy. But thanks to Harry all this changed. The paediatricians have learnt that this surgery can be done under general anaesthesia just like any other operation. Find and remove the 'localised' abnormality and there is a very strong chance that the epilepsy will stop and the behaviour and concentration span, will improve. Admittedly these represent a small percentage of those suffering with epilepsy but the results of surgery are so dramatic that not to offer it, was for me, a terrible omission.

It gives me great satisfaction that epilepsy surgery is now no longer cloaked in mystery, suspicion and spikes but is based on a clearcut structural and pathological basis just like any other type of surgery. Paediatricians are now of course prepared to refer these patients for surgery. Those patients cured are so very grateful, as are their families. Happy families indeed.

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Chapter 18

MEDICAL ADMINISTRATION

How I hate committees and committee meetings! It is a sad fact of life that one cannot avoid them. I was happy administrating the neurosurgical department which was more like a mutually supportive family especially in the early days when there were just two or three consultants. The problem arises when entering the wider world. In general the Radcliffe Infirmary was a very happy hospital. The NHS consultants had lunch together which was a valuable forum for discussing patients and indeed for referring patients to each other expeditiously. This dining room was soon considered too elitist (by whom I do not know but clearly a hospital administrator) and so was abolished.

The relationship between hospital and university was always problematic. When I arrived, the John Radcliffe Hospital had just been built. There was a vigorous debate to decide which departments should move from the Infirmary to the new hospital, which was several miles away in Headington. I was told that the University Grants Committee had paid a quarter of the cost of this new hospital so obviously the university must be allowed a quarter of the hospital. But of course the university did not want the ward space so it commandeered all the office space. That allowed the university to decide who went into the new hospital. The problem with this was that it produced an inefficient hospital and enormously increased the NHS running costs of both hospitals. I shall tell you why.

There was a world class accident service run by Jim Scott at the Radcliffe Infirmary when I did my year as an SHO job there. It was world class because the accident service was (necessarily) very well integrated with neurosurgery and the other related specialties. The original plan was for both the accident service and neurosurgery to move up to the new hospital. Both trauma and neurosurgical patients needed a similar intensive therapy unit (ITU) so just one such unit would be required. They are expensive to run being continuously

staffed with nurses and anaesthetists.

However a new professor of surgery arrived. He did mainly two operations; kidney transplantation operations and operations to core out blocked or partially blocked carotid arteries in the neck. This latter surgery I did, but was happy to pass this type of surgery over to the new man. Neither operations required intensive care post operatively but the new professor, perhaps understandably, wanted to have his empire in the new hospital. Consequently it was decided that the accident service would move to the new hospital but neurosurgery would stay at the Infirmary necessitating two ITUs to be maintained within a few miles of each other instead of just one.

This of course was nonsensical and frankly daft. It also not only destroyed a world class accident service but also required the health authority to run two ITUs rather than one. This well illustrates the problems that arose between the NHS and University. I suspect this tension still exists.

I submitted a formal paper to the then Regius professor of medicine, Sir Richard Doll, arguing that there should be just one acute 24 hour emergency hospital in Oxford while the other two hospitals should be used for more routine or research activity.

I liked Richard Doll very much. He is credited with confirming the connection between lung cancer and smoking. He told me that his initial suspicion was that the increase of tarmac roads was the cause of this increase of lung cancer. I suspect it was his earlier desire to become a neurosurgeon that encouraged him to invite me to become a founding Fellow of Green College which later became Green Templeton College, based at possibly the most beautiful building in Oxford, that is, the Radcliffe Observatory. I always felt it should have been called 'Radcliffe College' but Cecil Green's money was needed. Hence Green College, later Green Templeton College. One day I hope it might become Radcliffe College.

Richard Doll was clearly a very bright man and politically, of left wing persuasion. When young he applied to do maths at Cambridge but

unfortunately enjoyed the Cambridge alcohol rather too much the evening before the exam and failed to get in. One of his hobbies was knitting which he claimed he used to do while attending lectures.

My paper to the Regius was rejected. There was tension between university and NHS medical staff. The NHS staff felt the university-paid medical staff did not always pull their weight, spent too much time going to conferences and received too many 'merit' awards for writing papers which did not often usefully change practice. The university medical professors looked down on the NHS consultants whose work they considered somewhat unworthy and devoid of original thought. The truth of the matter was that there were a lot of ruthless and ambitious medical doctors in Oxford who were happy to fight their corner and grab as much as possible of the relatively ever decreasing pot of available money. I was too busy to indulge in these political struggles but maybe it would have been better if I had become more involved.

I had perhaps an unfair reputation amongst my colleagues for having a short fuse. My actual trainees, I later learnt, thought 'he was firm but fair'; I can live with that. If my fuse did become occasionally short it arose from intense frustration concerning the tortuous and time wasting negotiations needed to play the game of hospital and university politics.

Time was, for me, a precious commodity. One anaesthetist, given the job by the Regius to decide which department should go in which hospital, reported that he once felt that I was about to strike him. I did not, nor was I about to. But maybe I should have. A few months later that particular person rapidly absconded to the Middle East with the anaesthetic private funds and a young secretary, never to be seen again.

Professors of medicine seemed unaware that I spent most of my time in an operating theatre or seeing patients, which was perhaps why I could not submit all the chapters they wanted from me for their beloved textbooks, which they were editing for their own greater glory. One professor in particular took great offence when I told him I did not have the time to provide a chapter on

neurosurgery for 'his' book having just submitted a similar one to another professor for that professor's book editorship. The spurned professor subsequently went around saying that neurosurgery was of course not a specialty worthy of academic study; strange because Sir Hugh Cairns, a neurosurgeon, was the first Nuffield professor of surgery at Oxford.

Such was, and possibly still is, the academic back biting that sometimes goes on in the medical world at Oxford. I was too busy to get involved but this attitude did not endear me to one or two professors.

In retrospect I am sure I would have been a more effective local ambassador for neurosurgery if I was good at committee work. I was not. I was used to doing things my own way and my tendency to embrace autocracy rather than democracy proved incompatible with endless and never ending committees.

Recently I have wondered if I have been uniquely bad at embracing other activities besides my work. Sadly one has to attend colleague's funerals from time to time, and the oration invariably describes the person's wide ranging activities. Not only was he (at the moment it is usually 'he') an incredible surgeon of international repute who wrote many original articles, chapters and books, who made amazing advances in his subject, was beloved by trainees, patients and staff, had time for his family with whom he enjoyed frequent overseas holidays with the inevitable annual family winter skiing holiday, spent time travelling to other hospitals to forge meaningful relationships with overseas units as well as having a wide range of hobbies and finally, contributing lovingly to the local community. I must be a complete failure.

University versus hospital politics was one thing but dealing with the NHS administration was quite another thing. Two episodes stand out. At one time it was decreed by the Department of Health that hospitals and even specialties could breakaway and become a semi autonomous hospital or even a single specialty 'Trust' managing their own budget. Neurosurgery being a regional specialty was funded by the Oxford Region who gave the money for us to the Oxford Area Health Authority who then sometimes used part of it for other

things, rather than for neurosurgery. Being local they never appreciated the extent of our regional responsibilities and they had more pressing local demands. My request that this money be ring fenced for neurosurgery was rejected by the Regional Health Authority. Not surprisingly the thought of becoming a single specialty 'Trust' was very appealing, even more so because the rest of the Oxford Hospitals felt to become a 'Trust' was politically very incorrect.

My good friend and radiological colleague, Dr Andy Molyneux and I planned for neurosurgery and neuroradiology to become a 'single specialty trust'. We saw Professor Chris Ham at the Kings Fund who supported our initiative. Sadly as soon as the Radcliffe Infirmary management caught wind of our plans all fear of being politically incorrect disappeared and they announced that they too would be come a Trust in order to eliminate the cuckoo (us) in the Infirmary nest. Even more surprisingly all the other hospitals in Oxford suddenly decided to throw all caution to the wind and become one large trust. It is amusing to observe in life how occasionally the tail wags the dog.

In the mid nineties it was decreed that we should do 3 percent more work for the same amount of money; maybe it was the same amount of work for 3 percent less money. Either way this penalised the units that were already efficient without any fat to trim. The Oxford neurosurgical department was probably the most efficient neurosurgical department in the country. The only way to do 3 percent more work is to reduce the length of time that each patient stays. Eventually we became 'hyper efficient', or to put it another way, dangerous. When we got to the stage of removing a blood clot from the brain of a patient who was then put in the waiting ambulance to return him to Northampton General Hospital, I wrote to the Infirmary Administrator saying that this was unacceptably dangerous and asked for his advice. I was not surprised to get no answer. I wrote again, and again there was no answer. NHS administrators must be trained to bury their heads in the sand and hope problems will disappear. I think they must also be taught a standard lexicon and procedure .

'Lessons have been learnt' must be a contender for the most irritating and dishonest phrase in the English language but these attributes do not prevent it being regularly trotted out by negligent health authorities. 'Being economical with the truth' is an excuse also regularly paraded when efforts to cover up misdemeanours have been discovered.

I decided I would write an article for the British Medical Journal (BMJ) describing our predicament. I remember writing it one Sunday morning in the white heat of anger which allowed the words to flow effortlessly. Its title was 'OxDons Syndrome, the inevitable disease of the National Health service reforms'. (BMJ. 311. 1557. 1995). 'OxDons' was short for the 'Oxford Department of Neurological Surgery'. It described our predicament, how it arose and the inability of the hospital authority to offer constructive advice to render us safe again. It also described arcane NHS rules that prevent 'surplus revenue' (never 'profit', this being a VERY dirty word), that is money earned by treating overseas patients, being used for capital projects i.e. buying more beds and nurses which would have allowed us to keep patients a little longer and more safely. Although the word 'profit' is banned in the NHS, the word 'surplus' is just about allowed if said quickly and quietly through gritted teeth. Perhaps this attitude betrays why the NHS as an organisation is not financially savvy, never has been and almost certainly never will be. If you do not believe me ask anyone who has tried to do business and innovate with the NHS.

The BMJ loved it; 'just the right mixture of passion and fact'. Quite so. Perhaps unfortunately the BMJ sent my article to the Department of Health for a prepublication comment. It was as if a fox had got into a chicken coop. The Oxford Regional Health authority chairman was dispatched to tell me what a bad career move it would be to allow this article to be published. I wonder why? I ignored his not-so-veiled threat of blackmail. After it was published there was much correspondence from other units in the UK to the BMJ saying that OxDons Syndrome affected them also. After publication the then Regional Medical Officer came to see me. She sat in our kitchen at home and expressed

sorrow that I had published this article. She then added 'but of course every patient in the NHS is individually costed'. I was flabbergasted. No patient, not even one patient, was so costed in the NHS at that time but it revealed to me that many of those administrators, especially in the upper echelons of the NHS, had no idea about what went at the 'coal face' of the hospitals.

These same administrators use the latest management 'buzz words', or fashionable management words but they do not 'manage'. They 'react' but only if pushed to extremes. Doing nothing is the preferred (in)action in the hope that the problem will go away. Most of them have not worked in hospitals. They seem to me to be recruited from a pool of mainly well connected politically minded, metropolitan so called elite, who have never been trained in modern management. Their aim is for a quiet life so they can be shunted into some international charitable organisation with a pension and preferably an honour; a Knighthood or Dame hood would do. This would then, after a few years, allow an easy passage to being head of an Oxbridge College.

The same problem arises with doctors that become president of this or that organisation; they only get their knighthood when coming to the end of their stint as president and this depends on them not 'rocking the boat' and upsetting politicians. It is remarkably difficult to achieve change even sitting in one of those exhalted positions.

We need more, not less, boat rockers in the NHS. We need less, not more NHS managers or administrators and preferably better ones!

I did however receive a congratulatory letter from Sir George Godber, a former chief Medical Officer of the Department of Health, saying, 'well done'! I really appreciated that letter.

The key to a manager's personal success is that no scandal should surface. The arcane accountancy rules still, I believe, exist. The trouble is that this need for secrecy at the top means that 'transparency' is not part of the culture. One sees this desire to cover up unsavoury events throughout the upper echelons of administration. Transparency as well as boat rockers are seemingly needed

everywhere, not just in the NHS. But how do you choose boat rockers?

But medical 'mishaps' need to be acknowledged rather than covered up. We have all made mistakes and we will all continue to make mistakes. The important thing is that everyone should learn from these. We will not learn if mistakes are hidden because blame is allocated. Nor will we learn if there is no honest analysis of why the error occurred. Very often there are several reasons, not least a lack of facilities or support staff so the doctor concerned has made a mistake from being too overstretched or too tired or lacking support from more senior staff. The blame culture, centred on the medical staff, especially the junior staff, is still alive and well in the NHS, and, when combined with the management desire to hide problems, results in a toxic mixture.

Hospital management has a poor track record of being honest about the systemic contribution to medical mishaps. If hospital managers, as opposed to hospital organisations, could be sued as well as the doctors, there would be a greater incentive to ensure that computers were working, that other staff were present when they should be and that there are enough beds and operating theatres available. No wonder medical morale is at such a low ebb.

Of course there are times when a surgeon's competence becomes an issue. This means that patients' lives are at risk and this in my view is a very different order of 'mistake'. Such surgeons need to be stopped operating as soon as possible. In my experience there is a reluctance to 'bite the bullet' and confront this issue. Too often such surgeons are allowed to continue to operate. Why is there such reluctance?

There is a very real problem stopping dangerous surgeons operating. Is it fear of legal redress? If it is difficult stopping NHS surgeons operating it is even worse stopping incompetent professors from operating. Usually professors can 'hide' by doing more research or administration but I know of one neurosurgical professor who should have been stopped decades before he decided to flee the country and escape the consequences of his incompetence. Perhaps both medical and hospital management are to blame; even now I know of one NHS

neurosurgeon (not at Oxford) operating who should not be. Sometimes their competence has deteriorated after being made a consultant but others should not have been appointed to a consultant post in the first place.

In the past there was an arrangement called 'the three wise men (or women)'. The three of most senior and respected consultants in the hospital, were so appointed. If a consultant was felt to be incompetent, alcoholic, depressed or dementing then confidential representations, by staff of any grade, could be made to the three wise men. This system worked well. They dealt with problems tactfully, quietly, but expeditiously. Certainly a better system than the nebulous arrangements that exist now. Certainly much better than involving the General Medical Council which has shown itself to be floundering, heavy handed, and on some occasions, misguided.

The system of appointing consultants in my opinion leaves a lot to be desired. There is an excessive need to be politically correct and to insulate the hospital from being sued by unsuccessful candidates. I have no problem short listing candidates without knowing their names. But I do have a problem when the appointments committee is so structured that a legalistic points system is used rather than the committee being allowed to exercise their judgement. One is not allowed to telephone colleagues on an appointments committee expressing one's views or asking advice. References have to be so banal that one has to read between the lines, or perhaps between the lies, otherwise known as being 'economical with the truth'. A half hour interview for a life long job is completely unacceptable in my view, especially if one cannot confidentially phone colleagues that have worked with the candidate.

One possible solution is to allow a favoured candidate to work in the department in a temporary post for 6 months. After this time the appointment can be confirmed but only if the candidate is deemed suitable.

Once the consultant is in post then he or she undergoes an 'annual appraisal'. This is often done by a firm that gets paid, no doubt quite a lot of money, to appraise the hospital's consultant staff. This entails circulating a form to his or

her colleagues, junior staff, nursing staff, managers and on occasions, patients. The fellow consultants commend each other on the basis that if you scratch my back, I will scratch yours. No junior, needing a reference in the future, will provide a critical report. The managers will assess someone on the basis of how polite and trouble free the consultant is. That is to say, is he a non-rocker of the boat?

The best person to provide an assessment of a surgeon is probably the theatre staff and the anaesthetists, although the latter do sometimes make the mistake of equating skill with the speed of the operation. The very best people would be, of course, the relatives but how often are they part of the appraisal system? Never. As I have mentioned I know of one neurosurgeon who clearly should not be allowed to operate. He received the top grade of 'outstanding' after his recent annual appraisal by such a firm. Personally I cannot understand why he is still allowed to operate; I would not want him operating on any member of my own family. How many more patients need to be damaged or die before he is stopped?

The fact remains that within a hospital other consultants usually know who are the best and worst consultants and who they would have, or definitely would not have, to operate on themselves or their families. I think the 'three wise men' system is the best way to transfer any local concerns of competency into action. These wise 'men or women' should be resuscitated.

When I was in administrative charge of neurosurgery there was one occasion when I thought that the care that a patient had received, was unsatisfactorily delayed. I took the consultant (not Sebastian) aside and said that if in future he had difficulty being able to attend to any patient then I would be more than happy to step in and help if he contacted me and asked me to help. All consultants are equal. I had to tread very delicately. I relied on the personal regard we had for each other. It worked. This seems to me to be a far better approach than appraisal which in my view has become a meaningless bureaucratic exercise.

Perhaps all departments should appoint a 'senior consultant' with responsibility to maintain standards. This person should be appointed for being competent and experienced rather than allowing this post to be rotated through the consultants in turn. Nor are professors necessarily equipped to be the 'senior consultant'. Competence is needed, not political correctness or 'buggins' turn.

I have pondered long and hard how to improve medical management. In the 1970s general practitioners were encouraged to make personal referrals to consultants. Part of their job was to know the best consultant for any particular problem. Such personal referrals were later banned and referrals had to be made impersonally to a department. Is this not completely nonsensical? Waiting lists used to be controlled by the consultant who knew better than anyone which patient needed urgent admission. Nowadays a central hospital department usually looks after the waiting list. More bureaucracy. Personal secretaries of consultants were considered unnecessary. They did a wonderful job liaising with other doctors and patients while surgeons were operating, quite apart from doing their typing and filing. In addition I had to record the exact time when a patient came into my outpatient clinic and at what time they left. For what purpose? How many people were employed to collate and file this useless information?

I was supposed to see a new patient every 10 minutes in outpatients. This edict was unworkable particularly seeing, for instance, a patient with epilepsy who has traveled a hundred miles or more for a carefully considered opinion.

The neurosurgical department at Oxford was at its most efficient when it was small. We wanted to be the very best. We obtained the European 'Kite mark' for competence and I believe we were the only clinical department in the NHS to obtain this kite mark. I believe hospitals do work better if the units are small and if they are allowed to manage themselves. I believe the best hospital mangers are medically qualified.

I do not know why there is so little research as to what makes an efficient hospital department. It is urgently needed. There is also too little research as to

what constitutes a good manager. Is he or she a 'boat rocker'? What is the best way to choose a good manager? Can they make decisions without recourse to a committee? Can they 'manage' rather than 'react'? Do we need all these managers? One would have thought a small pilot scheme researching these answers would be so worthwhile and be applicable not only to the NHS but also to the Civil Service and indeed business. This would be a very worthwhile research project, particularly before pouring yet more money into the NHS' ever expanding coffers.

I am reminded of, let me call him, 'Geoffrey'. A senior consultant from abroad asked us to take him for a year for neurosurgical training at senior level. He was strongly recommended. We made him an 'overseas senior registrar'. On his first day he came in wearing sandals and carrying a bucket of soiled nappies which his wife, he said, had asked him to rinse out if he had a spare moment during the day. You don't believe me? It is indeed true. It was the nappies rather than the sandals but even these were unusual professional attire in those days when we were still wearing ties.

It soon became clear that he was not really cut out to be a neurosurgeon. I asked him quietly in my office if any of his home consultants had expressed reservations about his career choice. He answered, 'no'. I then wrote to the referring overseas consultant and asked if there had been any reservations expressed about his progress in his home country. He answered that he was about to retire and the other two consultants would not have him back, 'over their dead bodies'.

I thanked him. I then took Geoffrey aside and told him, 'that I thought he was very intelligent but I was not at all sure that neurosurgery was the correct path for him'. 'What did he enjoy the best?' He replied, 'I really enjoy talking about religion'. I can remember quietly gulping at this point. I explained, 'that neurosurgeons were in general, horribly narrow minded and focussed whereas he seemed commendably broad minded'. In the end I arranged for him to do a degree in philosophy at Oxford University. He was awarded an outstanding

degree. He was put in co-charge of a medical ethics department in this country. He is now a Professor of Ethics.

Geoffrey illustrates several problems. First it is very difficult to deflect someone to do something else if they have chosen the wrong area of medicine, without that person being made to feel a failure. Too often consultants are reluctant to confront the trainee concerned and discuss his or her career choice especially if the trainee has become quite senior. Secondly consultants are sometimes not honest when giving references. No one will believe them in the future but this 'economy with the truth' does no favours for the candidate nor for the reputation of the person giving the reference. Geoffrey felt that I had done him a grave disservice. Actually I think I did him a huge favour by diverting him from neurosurgery to medical ethics.

I hope this story illustrates how a 'consultant in charge' could be of help by taking responsibility and confronting issues. I would favour having one such person in each department. At the moment the over riding requirement to be 'politically correct' and 'fair' in the NHS, decrees that the consultant in 'administrative charge' rotates irrespective of his or her competence, experience and willingness to take responsibility or indeed willingness to confront difficult issues.

I would certainly advocate restoring 'the three wise men' and making a respected consultant in each specialty the 'senior consultant' with some power over, and responsibility for, the other consultants.

Is there any hope? In 2012 my colleague Peter Lees set up the 'Faculty of Medical Leadership and Management. Peter used to be a neurosurgeon at Southampton and he and I had a shared surgical interest centred around the pituitary gland. I hope so much that his initiative bears fruit because it is badly needed.

Chapter 19

SUCH A LOVELY YOUNG GIRL

Jane is the only patient I have ever suggested should sue her own doctor. I often think about her--still. I met her when she was 18 years old. Jane was a very attractive young lady doing a secretarial course. She noticed the onset of some headache, 'probably due to the close work required during her course', she was told by her friends. She then noticed, imperceptibly at first, difficulty seeing small print. This gradually got worse.

She saw her GP. He did an internal examination and asked her 'whether she was pregnant'? He did not examen her eyes. These visual symptoms gradually worsened until her ability to see had become precarious. She went to the local hospital who immediately referred her to Oxford.

Jane told me, 'when I stand up suddenly, I loose vision in both eyes'. On examination she had extremely severe swelling of the backs of both her eyes, called papilloedema. This is caused by insidiously increasing pressure in the head, so insidious that the patient experiences rather little headache and does not become drowsy, other than a tendency perhaps to drop off to sleep at inopportune occasions such as during lessons or meetings.

Jane's transient loss of vision when suddenly standing happened because there was a drop of blood pressure, similar to that experienced standing up suddenly from a hot bath. This drop of blood pressure resulted in a lack of blood circulating to the retinas at the back of the eyes because of the necessity of the heart pump to work against the obstruction caused by the swelling of the optic nerve; in other words, the papilloedema. Transient loss of vision on standing up is a classical symptom of severe papilloedema due to high pressure in the head.

I showed Frances the scan which showed a tumour the size of an orange pressing on her brain. This was towards the back of her head well away from the nerves

to her eyes.

I explained that this was a meningioma. Meningiomas are benign tumours and arise from the tough, durable membrane surrounding the brain and spinal cord, called the dura. The tumours look and feel like rather knobbly chestnuts.

The key thing for the surgeon to know is that they get their blood supply from the dura which is outside the brain, rather than from the brain itself.

The tumours therefore start outside the brain and as they grow, usually over several years, they gradually indent the brain. So the surgeon first needs to detach the tumour from its attachment to the dura and hence its blood supply. This then usually renders the tumour bloodless. The second step is to hollow out the tumour rather like emptying out a boiled egg but just leaving the shell with some adjacent egg white. If the surgeon has been able to eliminate all the blood supply at the initial stage, then this should be fairly bloodless. The final stage is to remove the remaining capsule of the tumour by gently dissecting the capsule away from the brain, into the cavity created by hollowing out the tumour. At this stage it is essential for the surgeon to find and maintain the correct layer between tumour and brain; this can sometimes be difficult. However if this correct plane is found then this allows the tumour to be removed with little or no manipulation or retraction of the brain itself. Well, that is the theory. It does not always happen in practice because one cannot always completely cut off the tumour blood supply and furthermore the consistency of the tumour can make life difficult especially if the tumour is very tough.

Being slowly growing, meningiomas can creep up on the patient and become very large. They can cause dementia and little else but in Jane's case it was raised pressure in the head causing swelling of the backs of the eyes, and little else. Obviously if the tumour indents an 'eloquent' part of the brain such as the area controlling speech or movement, then difficulty with speech or movement becomes apparent relatively earlier.

I told Jane, 'I can remove this tumour completely but when the swelling in the back of the eyes is so severe it often continues to damage the retinas, or 'seeing

part' of the eye, even after the tumour has been removed and the pressure relieved'. In other word the eyesight continues to deteriorate despite the tumour being successfully removed. I did completely remove this large tumour without any complications. Sadly as predicted Jane's eyesight continued to deteriorate after the operation and she gradually became completely blind. If she had come to us earlier before the 'eye swelling' had become so severe then her eyesight would have recovered completely.

She went to a school for the blind and was given a beautiful Labrador who became her 'eyes'. She was devoted to this dog but it was scant compensation for loss of sight in such a beautiful and charming young lady.

I hope that advances in implanted electrodes will allow Jane one day to see. Her 'seeing' part of the brain is intact so if it is possible one day in the future to replace the damaged retina electronically then perhaps she might see. I do hope so: Perhaps some sort of video cameras instead of eyes, connected to her 'seeing' brain, or occipital cortex, which, as I say, is completely normal in Jane.

Chapter 20

RESEARCH; REMOVING A HEMISPHERE

I remember being immensely excited when I found out something new which 'changed practice'. This does not happen often in any one surgeons's life. It maybe no more than finding a better way to do an operation. It maybe questioning an established mantra. For me it was finding a way to make a potentially good operation, a safe, relatively complication free, operation. Research was never formally part of my job description. However it is expected that one should continually assess one's results and make improvements wherever possible. Sadly the consultant time now is so regimented that there is often too little time allocated to thinking, assessing and research. But the reputation of a department depends on demonstrating innovation. I know some surgeons who never do a new operation and stick to operations he or she has been trained to do. Hardly a recipe for progress. Furthermore good trainees are rightly attracted to departments that innovate and also departments that encourage them to further their careers by doing research, perhaps for a higher degree.

I believe one of the most worthwhile contributions I made was to re-establish an operation called hemispherectomy which had been abandoned because of the horrendous complications that sometimes occurred. A hemispherectomy is an operation to remove one half of the brain.

There are a group of children who are either born paralysed down one side of the body or become so in the first few months of life. A typical story is that the child has a severe bout of epilepsy which leaves the child severely paralysed down one side of the body.

Normally speech function arises from the left half brain and so if an adult has a stroke (a burst or blocked blood vessel supplying the brain) on the left side of the

brain, they become paralysed down the right hand side of the body and have difficulty speaking.

The brain consists of two halves, similar to a whole walnut. These two halves are connected centrally and then merge into a central stalk or stem, called the brain stem. This is the trunk road conveying messages to and from the spinal cord which itself lies in a bony canal in the spine. These two halves of the brain are called the left and right cerebral hemispheres.

The speech difficulty is often mistaken for 'confusion' but it is not. Speech, that is 'word sounds', may not be understood but more commonly the affected person knows what he or she wants to say but, 'cannot find the words to express his or her thoughts'.

The remarkable thing is that if a child has damage on one side of the brain, then the speech function, if arising from that hemisphere, transfers to the opposite, intact hemisphere. This demonstrates the flexibility, or plasticity, of the young brain. How young? I have seen one child aged 6 years suffer damage to the left hemisphere and was able to transfer her speech to the other half of her brain. In fact we can find out about speech and memory function before surgery by injecting an anaesthetic drug up one (internal) carotid artery so anaesthetising just that half of the brain.

We do not know why a severe bout of epilepsy in a young child may lead to severe damage of one hemisphere. Possibly the intensive localised electrical activity causing the epilepsy may consume vital resources or metabolites in that part of the brain thus causing 'self generated' damage, similar to perhaps excessive exercise damaging the heart muscle. But the real answer is that we do not know.

Those infants paralysed down one side of the body often develop not only episodes of severe epilepsy but very 'challenging' behaviour. Indeed the behaviour may become more of a problem than the fits. They become aggressive and attack their siblings or other children at school. It becomes a nightmare for the parents and indeed for the whole family. Schooling becomes impossible.

What I do know is that this behaviour always improves, or even becomes normal if the fits stop. This improvement is almost immediate. It improves even while the child continues to take the anti epilepsy medication. Stop the fits and the behaviour improves. Stop the fits and the IQ also improves. Stop the fits and the concentration span improves; so the children start playing on their own for the very first time.

Why am I writing about these children and the distressing effect they have on their families?

In the late 1940s and 1950s an operation called hemispherectomy was performed on these children. Investigations showed that one side of the cerebral hemisphere was so damaged that it was no more than a sac of fluid (cerebrospinal fluid) surrounded by a thin rim of tissue which normally would be a layer of brain several centimetres thick. The back of the hemisphere was usually relatively spared. This is the occipital lobe (occiput means 'back of caput, or head') and explains why the opposite field of vision remains normal. So this damaged half brain can become the source of the epilepsy. The fact that the damage was apparently confined to one side encouraged surgeons to advocate excision of this hemispheric 'scar'. Removing the damaged hemisphere, a hemispherectomy, produced impressive results. About 90 percent of children stopped having fits, behaviour became normal, and concentration returned. My predecessor, Sir Hugh Cairns performed this operation and I recall one patient of his that I saw for a follow up in outpatients, leading a normal life, and holding down a fairly responsible job, several decades after the operation.

However problems started to emerge in about a third of the children usually two or three years after an apparently successful operation. These children developed for instance, high pressure in the head producing severe headache. Episodes of bleeding within the brain occurred and blood stained cerebrospinal fluid was found when a lumbar puncture was done. They became unsteady on their feet and developed double vision due to damage to the nerves controlling the movement of the eyes. These delayed complications affected about 30

percent of the children. Many of these children ultimately died.

These horrific and distressing complications caused surgeons to abandon this operation. I can think of nothing worse than to see your child apparently cured of epilepsy only to see them develop irreversible, progressive, and horrific brain damage which often led to a slow and debilitating death. Indeed heart breaking. This was the situation when I became a consultant at Oxford.

The fact that these children did so well as far as cessation of epilepsy and improvement of behaviour were, it seemed me, good reasons for not stopping doing the operation but for finding out why these delayed, but so distressing complications, occurred.

Hugh Griffith, a colleague in Oxford then Bristol, studied the brains of these poor children and found that blood had seeped into the remaining cavities of the brain. Blood is harmless in blood vessels but blood anywhere outside the blood vessels, for instance in and around the brain, induces an intense reaction from the iron derived from haemoglobin, which is the substance that puts the red in the red blood cells. This iron stains the tissues and damages the brain and nerves as well as causing an inflammation or reaction in the lining of the brain cavities. This inflammation blocked the normal circulation of the cerebrospinal fluid (csf) in and around the brain so causing high pressure in the head. But how did the blood and the haemoglobin get into and around the brain substance in the first place?

If one reads the original description of the early hemispherectomy operations, the surgeon deliberately made a passageway into the ventricles or brain cavities. The purpose was to allow blood remaining in the large cavity left after the hemisphere removal, to seep or drain internally into these brain cavities. The original surgeons thought this would be a useful 'soak away' for the post operative oozing and bruising. But in fact this 'internal' drainage of blood was the cause of the terrible damage resulting from the blood and iron diffusing into and around the brain, the nerves and especially the brain stem. This staining of the brain by iron is called 'haemosiderosis'.

Rather than abandoning the operation why not stop this blood seepage instead of encouraging it? Accordingly we did two things. First we reduce the size of the remaining cavity in order to reduce the size of the 'sump' of blood remaining where the hemisphere had been removed. Secondly we blocked the opening (with a small piece of muscle) leading into the remaining brain cavities. This was in contradistinction to the opening up of this passageway as advocated in the original description of the operation.

These measures were completely successful in stopping these awful complications. This operation has now been restored to the armamentarium of surgeons throughout the world albeit with variations on this theme.

I proceeded to do about 100 hemispherectomy operations at Oxford with no delayed complications occurring. The results in terms of stopping epilepsy, improving behaviour, restoring concentration, and improving the IQ results, have been excellent. The price paid is losing the field of vision on the paralysed side but this loss is quickly adapted to, by the patient slightly turning the head so the remaining half field of vision covers both sides. Speech function has never been worsened following this surgery. Surgery is the last option but it should not be left too late as we have found these children rehabilitate back into society much better if they can be cured of their epilepsy while there is still some schooling ahead of them.

Chapter 21

NEURALGIA AND A MEMORIAL SERVICE.

Is scientific debate always dispassionate, calm, and logical? Not often. I certainly discovered the passion in science when I wrote about a mysterious condition called trigeminal neuralgia. This is agonisingly severe pain, usually on one side of the face in the area supplied by the trigeminal nerve. So called because the nerve has three divisions. Occasionally both sides of the face can be involved. The patient is usually over forty but maybe younger if the patient has multiple sclerosis. The pain is excruciating and stabbing. It usually starts when the affected area of the face is touched or moved. Perhaps it is one of the worst pains known to mankind. Eating, washing the face, cleaning the teeth, brushing hair, can all precipitate this pain which patients often mime by showing stabbing movements on the unaffected side. The unaffected side, because they avoid at all costs touching the affected side.

There are two characteristic features. The first is that the pain is episodic lasting several weeks or months then it completely disappears. So the patient celebrates thinking this terrible pain has gone. But no, it comes back often with increasing frequency so these unfortunate patients feel there is a Damocles sword hanging over them. The second feature is that a medicine called Carbamazepine removes the pain. Not everyone can take this for some are allergic to Carbamazepine. If they can tolerate it, it is almost a test of the diagnosis so consistent is the beneficial effect of this drug. In time however the pain may become resistant to Carbamazepine, a drug originally introduced to stop epilepsy, not pain. There are never any physical signs to find when examining the patient unless there is an underlying cause such as a tumour or multiple sclerosis. A tumour or cyst is an extremely rare cause of trigeminal neuralgia.

If the patient cannot tolerate Carbamazepine or the beneficial effects diminish over time, then some method of persecuting the trigeminal nerve is instigated.

There are a wide range of methods used for damaging this nerve but it seems that if one can stop some nerve impulses passing down the nerve then the pain goes. If the damage is slight then the sensation from the face is preserved. I found giving the nerve a 'good rub' during an operation often stopped the pain but preserved sensation. The only disadvantage is that the pain may recur if facial sensation is preserved and the only way to avoid the return of the pain is to damage the nerve sufficiently in order to create some numbness. But how much numbness? Profound numbness can be very upsetting. A numb face is not without symptoms and I can remember one patient painlessly picking away one side of her numb nose because 'it felt blocked'. Just like leprosy.

So I believe one has to do a dance between insulting the nerve sufficiently to stop the pain but avoiding excessive damage thereby producing severe 'painful' numbness: "Anaesthesia dolorosa" as it is sometimes called when pain develops in a numb area. This 'numb pain' is untreatable. Dr McArdle's alcohol injections stopped this pain but unpredictable numbness often occurred after these injections and so nowadays such injections with alcohol are no longer done.

Peter Jannetta, a neurosurgeon from Philadelphia, proposed that pressure on the trigeminal nerve near the brain stem by a pulsating artery was the cause of trigeminal neuralgia. He advocated an operation called '(micro) vascular decompression' to move this artery away from the nerve. He promulgated his hypothesis, one has to say, in a somewhat messianic way even though he was not the first neurosurgeon to suggest this mechanism. But if this hypothesis is correct why is this pain so intermittent, disappearing for months on end then suddenly reappearing? Why does a non pain killing medicine like Carbamazepine stop the pain so immediately and successfully? Why is compression of the nerve by an artery not always found? There were and are other objections. I felt that Jannetta's operation worked by producing slight damage to the nerve rather than treating the fundamental cause.

In 1989 I published a critique of Jannetta's hypothesis in an American

neurosurgical journal. This produced a torrent of abusive letters from many American neurosurgeons. The abuse that was directed at me was mainly along the lines that I had been 'nasty' towards Peter Jannetta. Many of his friends wrote to complain about my 'biased and personal attack' on him although I had been at pains to avoid as much as possible such an impression in my article. There was much emotional heat but no intellectual light.

I was given the 'right of reply' and wrote, 'I felt that this hypothesis should be submitted to a vigorous and dispassionate debate such as has characterised the development of other aspects of neurosurgery'. It was clear that there was indeed a lot vigour and passion. But it was also clear that dispassionate debate was not always welcomed especially by Jannetta's friends in the USA.

The organisers of the next World Congress of Neurosurgery thought it would be interesting for Jannetta and I to give opposing papers on the cause of trigeminal neuralgia to stimulate debate. He gave his paper first then I gave mine. Before long there was barracking and shouting from Jannetta who was helped in this by a Japanese neurosurgeon. They were standing at the back of the lecture hall. I believe the essence was that they thought I was talking rubbish. I stopped my talk. 'Please be quiet', I said; 'You have had your time to talk, now it is my turn'. At the end the Japanese neurosurgeon came up and apologised, bowing very low, saying, 'that was a very un Japanese thing to have done'. We became rather good friends after that unusual introduction.

This episode does reveal once again, the vulnerability of many 'famous' neurosurgeons. Their 'fame' often rests on expertise in one narrow area and anything or anybody threatening this expertise is very difficult to cope with. Such a surgeon's fame and fortune depends on attracting patients from all over the world.

We still do not know the cause of trigeminal neuralgia. I believe in time a subtle cause will be found in the stem of the brain. Having being castigated for my views in 1989 I was pleased, no, delighted, to be sent an email in 2013 by Professor Kim Burchiel of Oregon University USA, stating, 'having spent the

better part of the past 30 years thinking about trigeminal neuralgia I have concluded that your 1989 article in the Journal of Neurosurgery about microvascular decompression is probably correct---at least the evidence is mounting'. Kim Burchiel is perhaps THE American authority on trigeminal neuralgia. It was worth the 24 year wait to receive that message!

Three other nerves in the head can be similarly affected. Two are well recognised (facial hemispasm and glossopharyngeal neuralgia), but one other is not. This is called 'neuralgia of the nervus intermedius'.

Neuralgia of the nervus intermedius is often not recognised. Doctors frequently fail to diagnose this extraordinarily painful condition. The nervus intermedius is a tiny cotton like nerve deep in the head. It runs next to the facial nerve, that is the nerve that moves the face. This nerve supplies sensation to the earhole or 'auditory meatus'. I have had two patients with this condition during my life.

In 1988 a young Brazilian doctor came to see me with a 'neuralgia' type pain confined to his left ear. It was agonisingly severe. It came on whenever he put a pair of stethoscopes in his ears. He had to take morphine for this pain. He became an addict and had to stop work. There were no tests to confirm this diagnosis of 'neuralgia of the nervus intermedius'. Indeed no modern, sophisticated MRI scan can make this diagnosis either. The diagnosis can only be made by talking to the patient and elucidating the facts without suggesting answers to one's questions. I cured his pain by cutting this tiny cotton thread sized nerve where it emerges from the brain stem next door to the facial nerve. Amazing how much pain this tiny nerve can cause.

In 1958 Ceri came to St Catherine's College, Oxford as an undergraduate. Why do I mention Ceri? If I have been critical of one or two professors in the medical arena, Ceri illustrates all that is admirable about many, if not most, Oxbridge professors that I have encountered. He was 19 when he arrived. He stayed all his life. He became professor of human geography. He was one of those wonderful traditional 'dons' who gave generations of students not only weekly teaching tutorials, but also friendship, stimulation and guidance. As an academic

he was humble and self depreciating. He was a world renowned expert on the movement of populations, statistics and ghettoes. Ceri, as a friend and host, was always welcoming, generous, entertaining, disruptive and retained all his life a boyish naughtiness. He had held every college post during his career, including that of 'temporary' Master of St Catherine's College. I have known him and his wife for 50 years. Ceri was a traditional Oxford professor dedicated to teaching and research rather then self aggrandisement. Indeed an admirable man and professor.

After his memorial service we walked back to St Catherine's College for 'refreshments'. Appropriately there was a vivid rainbow as we left St Mary's University Church. Ceri loved rainbows.

At the college reception after the memorial service I went to talk to an old friend. She introduced me to the couple she was talking to. The lady of the couple stared extremely hard at me and said very slowly but forcefully, 'n e u r a l g i a o f t h e n e r v u s i n t e r m e d i u s'. Even in Oxford this is an unusual opening gambit to a conversation after a memorial service. I said, 'yes, I have just been writing about it'. 'No,' she replied, 'I have had neuralgia of the nervus intermedius and you operated on me 30 years ago'. This was Lucy. She was now 85 years old but looked 70 years old. She reminded me of just how indescribably awful the pain in her right earhole had been. She had seen numerous people including several ENT surgeons. She had been told it was 'psychological'; often an indication that the doctors do not know the cause of the pain.

Lucy eventually went back to her GP, Tim. 'I want to see a neurosurgeon', she said. Tim had been a fellow student at Guys with me. He sent Lucy to me. She recalled me telling her about the previous patient I had had with this pain, a Brazilian doctor. She decided that she wanted the same operation. I cut Lucy's nervus intermedius and she has been pain free ever since.

But it needed Lucy to have the initiative to go back to her GP and ask to see a neurosurgeon. Not many patients would even think to do this. Perhaps not many

GPs would comply with such a request either.

This is a truly awful pain but clearly is insufficiently known even amongst ENT surgeons who presumably see most patients with pain in the ear. After cutting the nerve there are no side affects or no discernible numbness. It is the only way to cure this pain that I know as Carbamazepine does not seem to work for this particular pain either.

Chapter 22

PITUITARY TUMOURS AND HENRY.

Many weird and wonderful medical conditions arise from the pituitary gland. Travelling on the London underground train often allows medical students to diagnose some of these. So where do you find this important pea sized gland? If you looks up someone's nose there is a partition separating the right and left sides. Eventually you see a bone at the very back of the nose called the sphenoid bone ('wedge shaped'). In the central part of this bone there is a small 'egg cup' open from above, into which sits the pituitary gland. This gland hangs down from the brain into this boney egg cup.

This gland controls many other glands: The activity of the thyroid gland, the sex glands, the adrenal glands which counteract stress, the hormone called prolactin that allows the breasts to produce milk as well as growth hormone that controls normal growth of bone and other organs. No wonder this little gland has been called the 'leader of the endocrine orchestra'.

Benign, not malignant, tumours usually grow from this gland. Sometimes the tumour has no associated hormone secretion, in which case they are called 'non functioning', while other tumours actually secret a hormone and are called 'functioning'. The hormone secreting tumour produce a variety of different appearances.

Too much prolactin will cause embarrassing secretion of breast milk, so staining the clothes. It also will make women infertile as happens naturally after child birth during breast feeding. 'Prolactin' is nature's contraceptive.

Too much 'growth hormone' can, either in a young person produce a giant, or in an adult, after the bones have fused and stopped growing longer, a characteristic thickening of the features and enlargement of the eyebrows, face, hands and feet, which become bigger, and especially wider. This condition is called 'acromegaly'

or enlargement (megaly) of the 'outer' (acro) parts of the body. These changes maybe imperceptible and arrive unnoticed by the family living with the person and only become obvious to others at the time of a family reunion or when a medical student notices the person on the London underground train.

Over stimulation of the adrenal glands also produce a characteristic appearance; an overweight person with a very florid fine furry face. The legs become weak and thin and the overall appearance has been rather unkindly likened to a 'lemon on cocktail sticks'. The personality changes. This is 'Cushing's syndrome,' named after the neurosurgeon Harvey Cushing. Although I make no claim for originality I was one of the first surgeons to operate on these tumours in the UK through the nose using the operating microscope together with an X-Ray monitor which is used to guide the surgeon to the pituitary gland. In general these patients did very well.

The patients with acromegaly often show after operation a dramatic, albeit incomplete reversal, of the abnormal appearance. The overgrown eyebrows, the big lips and large nose all return, at least, to near normal. The big hands and feet become smaller. The 'soft tissues' that have become enlarged shrink but not the enlarged bones which stay large.

Henry, a well known painter of horses and people, found he was going blind. He had 'blinker vision' so called because the sight is lost on both sides akin to cart horses wearing 'blinkers'. He had one of these 'non functioning' tumours pressing on his optic (seeing) nerves. I removed this tumour but preserved the normal part of the pituitary gland. His eyesight recovered completely. He very kindly thanked me by painting my portrait which is now hanging in 'Chris Adams House' at Pembroke College, Cambridge; I have always thought it important to 'give back' if at all possible and so it gave me much pleasure to donate what must be the wonkiest building in Cambridge to my old college. Its cellar has particularly good characteristics for preserving the college wine so is much appreciated. This building is at the end of St Botolph's Lane where I used to live, above a photographic shop, during my last year at Cambridge.

I used to be invited to go to St Bartholomew's Hospital, London to see the patients there that required pituitary surgery. They would come down to Oxford for their surgery and then go back to London to recuperate. This arrangement I believe allowed the professor in charge of these patients at St Bartholomew's Hospital to go around the world saying one did not need a surgeon to look after these patients, because they could be all cared for by clever physicians using medicines. Strange people sometimes, these physicians!

There is however one tumour of the pituitary gland that really does not need a surgeon. This is the tumour that produces prolactin that stimulates milk production from the breasts. These tumours miraculously disappear using bromocryptine tablets. No operation needed, just tablets.

Before the bromocryptine was available I received a complaint from a Greek lady who had a prolactin (nature's contraceptive) secreting tumour and came to see me because of her infertility. I operated on this tumour and proof of the successful outcome came with the rebuke from Greece that she had conceived, 'on the way home'. She was in fact delighted but the complaint was that I had not warned her just how quickly she would regain her fertility! I never quite knew what she meant by 'on the way home'. She flew home using a Greek airline.

Some years ago I was asked to write a report concerning a 16 year old Japanese girl. Both her parents were medical doctors working in a fairly isolated part of Japan. Their daughter had a prolactin secreting pituitary tumour. It was large and this tumour did invade surrounding bone which can sometimes happen with this type of pituitary tumour; yet such 'invasive' tumours can still respond very well to bromocryptine. A famous neurosurgeon from Tokyo was called in and for some inexplicable reason he advised an operation through the head (skull) even though it was known that this was a prolactin secreting tumour which could be cured by bromocryptine tablets. Why? I do not know, although when her mother came to Oxford to see me she wondered if the hospital 'needed' to have a certain number of operations performed each year to maintain its

licence.

Tragically the daughter died. The parents sued. But no one ever sues a famous surgeon in Japan. No 'pituitary' surgeon in Japan would write a critical report . The parents obtained reports from myself and an American 'pituitary' surgeon. The judge in Japan accepted these critical reports and the parents won their case. I was told that this was the first time that a Japanese neurosurgeon had ever been successfully sued. How sad though that a young girl died unnecessarily.

Chapter 23

LIFE WITH THE LAWYERS

I discovered that lawyers can actually be enjoyable company! On the whole they are intelligent and amusing. But I suppose I must thank my first wife for my relatively successful career as a so-called expert witness. This started slowly, doing insurance reports for local lawyers or medical reports for insurance companies. I then had requests from London solicitors and I remember a very superior young solicitor from Withers going through my report and giving me a very helpful tutorial (yes, he probably had gone to Oxford hence 'tutorial' and not 'supervision' as at Cambridge). I was grateful and used his format for all subsequent reports.

One needs to know some tricks of the neurological trade when seeing people claiming compensation from nerve damage at work. I used to listen to the noise of their walking even before the person came into my consulting room. Is there a heavy limp? Does it match the walking once they enter your room? I would watch how they got on and off the couch and how they would remove any clothes. Is their movement compatible with their degree of pain? Can they lift their 'affected' leg up easily, and so on? One old trick is to mark out the alleged area of numbness (with a pin) when the patient is lying on their back and then quickly turn them onto their front and see if he or she has remembered to 'transfer' the 'numbness' to the other side. It is aways worth secretly following someone out of the hospital. I remember one person coming in leaning heavily on his crutches. After the interview was over I quietly watched him leave the hospital carrying his crutches over his shoulder while he walked rapidly and pain free out of the hospital.

I saw more of the barristers when I became involved in medical negligence claims. I was very impressed by their intelligence and ability to pick out the crucial aspects of any case. As an expert giving evidence in Court one learnt to give just 'yes' and 'no' answers. Do not give the opposing barrister more rope to hang you with. But an expert must be credible. The opposing barrister will get

you to agree to a series of questions but there comes a point when you are not prepared to cross the line and agree with a supposition that is not in your report or in your view, credible. You need to recognise when that line has been reached. Appearing as an expert does require more intellectual effort than perhaps anything else because the opposing barrister will also have a fellow neurosurgeon feeding him with tricky questions with which to hopefully trip you up.

There were two such skirmishes that I remember vividly. These battles are often decided by who is telling the truth.

'NO HEADACHE'

The first was in the north of England. My friend Richard Johnson from Manchester was involved but for reasons I never ascertained, he suggested that I should become the neurosurgical expert. A man was knocked off his bike. He was admitted to the local hospital having hit his head. His right wrist was painful. After two days observation he was allowed home. He had been given an appointment for the Wednesday fracture clinic, 4 days later, to check on his wrist. He was also given the routine head injury leaflet telling him to report back should he have any concerns. Just before the Wednesday of the fracture clinic he started to have severe headache. He decided to go to the fracture clinic rather than to the ward where he had been admitted, so that he could also discuss his headache as well have a check X-Ray of the wrist.

He saw two young orthopaedic doctors in the fracture clinic. They only seemed interested in his wrist and sent him off for an X-Ray of the wrist. The patient tried to tell them about the headaches which by this time were getting worse. His concerns were waved away by the doctors. He was sent home.

That evening he lapsed into a coma and died in the night. It was found that he died of an extradural blood clot, just like little Ian (chapter 15).

The hospital notes said, I quote; 'Neurological examination normal' then on the

next line 'No headache'. These notes were typed unlike the other notes.

The Medical Defence Union decided to defend these two doctors. Their expert was a member of the Council of the MDU and was used to defending doctors. He was a good friend and very respected neurosurgeon however I have always thought it better if experts made a point of acting on either side rather than always representing one side, for example always defending doctors.

The MDU produced a report postulating that the head injury had damaged the artery that runs inside the skull adherent to the dura lining the skull in the temporal region. This artery is called 'the middle meningeal artery'. Fractures, or cracks, of the skull maybe so fine to be undetectable on an X-ray, but such a fracture can tear this adherent artery. The MDU explained the delay by stating that the injured (middle meningeal) artery developed a 'ballooning out' and the balloon, or aneurysm, then suddenly ruptured after he left the fracture clinic while he was at home. Therefore no medical treatment was possible and no negligence had occurred, at least in their view.

I had never heard of, or read about, such an aneurysm occurring on this artery apparently accounting for a delay in the development of a (fatal) extradural blood clot. Much as I liked my opposite number I felt his desire to defend these two doctors encouraged him to produce an utterly fanciful explanation. Further more the widow's report described increasingly severe headache before he attended the fracture clinic. Was she to be disbelieved as well?

In my report I pointed out two things. First the notes described the examination ('normal') first and the symptoms ('no headache') second. Normally one records these in the reverse sequence because one talks to the patient first then examines him. Secondly I pointed out that the statement, 'no headache' meant that the question had been asked, 'do you have an headache?' and the answer had been 'no'. In view of the widow's account, it seemed inconceivable that the patient would have denied having a headache when he was at the fracture clinic.

I gave my evidence after the widow had been put in the witness box. She had had to endure being accused of lying by saying her husband had had a headache

when in fact, according to the MDU side, he had really been free of headache. I gave my evidence according to my report. I said to the judge, 'I think the notes of these two doctors do not represent the truth'. The defending barrister feigned horror that I should accuse colleagues of such an unprofessional thing as lying and said that he would return to address this really terrible accusation after the lunch break. While I was stating my opinion, the Judge, to whom one always faces when talking, was gently nodding his head in apparent agreement. In fact they quickly settled the case during lunch break.

It seems nobody on the defending side had really asked themselves what 'no headache' really meant. It was not just a statement but it was a question ('do you have a headache'?) followed by an answer, allegedly denying any headache. It transpired that these two doctors were from overseas and had altered the notes when they heard about the death of the patient. They had already returned to their home country by the time the case came to court. Just as well for them, but they had cost their hospital (and the NHS) as well as the Medical Defence Union a lot of money because these two organisations had to pay the costs of both sides of lawyers as well as the award to the widow. Of more importance, these two doctors failed to detect a curable condition by being so 'wrist centred' in their approach to the patient and had furthermore tried to cover up their mistake by annotating the notes with typed untruths.

DOCTOR DOOLITTLE

I have been involved in just one libel case. I was cross examined by the celebrated libel lawyer George Carmen QC in the case known as Dr Doolittle. This involved a patient who sustained a severe head injury from a road traffic accident. He was taken to Lewisham Hospital in south London. There was no neurosurgeon working there and he was admitted, as is usually the case in the UK, under the care of the orthopaedic surgeons. He clearly needed to be admitted to a neurosurgical unit with a neurosurgical intensive care ward.

There was a young South African orthopaedic registrar looking after the patient. However no surgery of any kind was required; just good care in an intensive care ward.

This registrar phoned every neurosurgical unit in London but no bed was available. Showing unusual and praiseworthy initiative he managed to find a bed in Leeds and arranged for the RAF to fly the patient there. All this happened in the middle of the night but he phoned his consultant orthopaedic boss at home from time to time to keep him informed.

It is still a mystery to me how the Daily Mirror newspaper found out about these nocturnal events but later there was a banner headline 'Dr Doolittle' in the Daily Mirror, with a photograph of the consultant orthopaedic surgeons's home. The article went onto to explain in vivid terms how this 'fat cat' consultant stayed in his bed instead of getting up to assist with the patient's care. Hence Dr 'doing little'. But there was no need for him to have got out of bed to go and see the patient in Lewisham Hospital.

Accordingly the consultant orthopaedic surgeon with the help of his defence union decided to sue the Daily Mirror for libel. The Daily Mirror retained George Carmen as their QC. Carmen had successfully defended Jeremy Thorpe. I was asked to be an expert witness for 'Dr Doolittle'.

The Daily Mirror had a neurosurgeon on their side who gave his evidence in a decidedly bombastic manner. He worked in London and said that of course if his hospital had been approached they would have taken the patient. Unfortunately for him we had a list of the telephone calls made and it included his hospital. Furthermore we had found out which days this surgeon was on call and it turned out that he had been on call the very night when the request was unsuccessfully made to admit the patient to his hospital. That did not help their case. The moral for an expert witness is 'do your homework' and 'be honest'. When I was being cross examined by George Carmen he was initially all sweetness and light. When we reached the crunch line Carmen suggested that, 'if I had been called in the night about such a patient I would have phoned back

after 20 minutes to find out what progress had been made'. I truthfully said, 'I have been in this situation many times; I would give advice then try to go back to sleep and expect to be called again should further problems develop'. Mr Carmen suddenly changed his demeanour.

The Daily Mirror and George Carmen lost. They were not happy, especially with me. They leaked my modest fee (which I thought the Daily Mirror could well afford) to the Private Eye 'scandal" magazine. What was nice was that Private Eye later published a letter from the husband of a patient of mine saying, 'Mr Adams has saved my wife's life twice and as far as I am concerned he can charge what he wants'! Is appearing in Private Eye the very pinnacle of professional success?

Eventually I retired from doing this work, with I hope, a flourish: In 1994 I had been asked to appear as an expert witness in Cardiff on a Tuesday and Wednesday. On Monday evening the solicitor phoned to say I was not needed on Tuesday but please come on Wednesday. I was not pleased as I had cancelled an operating session and outpatient clinic to vacate Tuesday. On Tuesday evening I was told I was not needed on Wednesday but to come on Thursday. Subsequently my appearance on Thursday was cancelled on Wednesday evening. By then I had had enough of this farce and I insisted on talking to the barrister. I was told that this was impossible, 'as experts had no right to talk to a barrister'. I replied, 'that if they want their expert witness to give evidence then I would need to talk directly to the barrister'. The barrister claimed that he had had no idea that a week of my working life had been so destroyed and agreed to hear my evidence on the following day.

I was incandescent with rage and spent the train journey to Cardiff composing a letter to The Times Newspaper saying that if the Law wanted so called expert witnesses who were still active and working as opposed to retired (retired consultants who act as experts sometimes forget just how difficult and uncertain surgical life can be) then there has to be a better system than that which existed. The Times did publish my letter. There was a flurry of letters from barristers

blaming court officials and vice versa. However Lord Woolf referred to my letter when he published his Commission on Civil Litigation. He highlighted the need for a better system and advocated that if possible just one expert should be appointed to advise the Court rather than having two experts, one on each 'side'. Certainly the current pre trial meeting of experts has been a very useful innovation and I gather it is very rare nowadays for experts to have to give evidence in Court. I had always enjoyed the intellectual tussle with barristers in Court so perhaps I retired from this work at the right time.

Chapter 24

THE HARLEY STREET SURGEON.

This patient was memorable to me for many reasons, even though he was not actually 'my' patient. Yet he is still very memorable. He 'belonged' to my neurosurgical colleague, Sebastian, who shared him with an excellent consultant physician called John Ledingham. This patient demonstrates the need, on rare occasions, for the surgeon to take courage in both hands and act on his clinical conviction even in the apparent absence of any X-Ray or scan evidence.

He was a rather superior London teaching hospital and Harley Street, consultant general surgeon. This patient was a renowned abdominal surgeon. I believe a lot of his renown centred around his skill at treating 'piles'. I was told he was therefore known by his juniors as 'goldfinger'.

Goldfinger however came within a whisker of dying. He had a weekend cottage near Oxford where he kept some horses. Personally I have been petrified of horses all my life. They are so strong and I have seen highly experienced horse riders thrown off with resulting severe life long brain injury. Indeed, Tim, one of my general surgical colleagues at Oxford used to hunt. He would arrive at the hospital dressed in scarlet, do a ward round to see his patients and then join the hunt. Every year without fail he came off his horse and sustained varying injuries, usually to the head. The excuse was always the same. 'I became so excited that I failed to notice the wire concealed in the hedge that I was jumping over'. A problem in the horse riding world has been a reluctance to wear a helmet and especially a helmet with chin straps which prevents the helmet falling off the head before the head hits the ground. Fortunately this reluctance is fading with the realisation that a helmet with a chin strap is sensible rather than 'sissy'.

Our Harley Street colleague did not in fact have a heavy fall; his horse reared up and he slid down the back of the horse, jerking but not hitting his head. However he was admitted to the Radcliffe Infirmary with quite a severe

headache under the care of my neurosurgical colleague and Dr John Ledingham. The scan was reported as normal but it should be said that these early scans did not always produce a clear picture. The surgeon-patient then lapsed in and out of consciousness but seemed to respond well to brain shrinking drugs such as steroids and mannitol.

I have a vivid recollection of being phoned early one Monday morning by Sebastian saying he was just going off on holiday but would I look at this general surgeon chap who did not seem to be recovering very well despite sustaining a very minor head injury? Alarm bells rang and I went into the hospital early to see him. After seeing him, the alarm bells rang even louder. When I saw him he was in coma and when stimulated would extend both arms out straight while turning them inwards at the same time. This is called 'decerebrate rigidity' and is a sign of a very sick brain. More specifically it is a sign of a very sick stalk or stem of the brain. The stalk or brain stem connects the main part of the brain to the spinal cord. Apart from being a thoroughfare for messages between the spine and the brain, it also controls breathing, blood pressure and some would claim, consciousness.

I told John, 'your patient is going to die unless we do something'. So despite a 'normal' scan I advised an operation that morning. His wife flew down from London by helicopter for me to obtain her consent to operate.

I decided to make a large opening on one side of the skull. I found a large blood clot, not outside the dura as was the case with young Ian (chapter 15), but a large liquified blood clot inside the dura, between the dura and the brain. This is called a 'subdural' haematoma as opposed to an 'extra dural' haematoma. These subdural blood clots often occur following a minor knock of an elderly head (classically on a green house door) without the patient becoming concussed. Furthermore these blood clots often become liquified and act as a cyst which then causes the patient to drift in and out of consciousness as was happening with our surgical friend. The vessels collecting blood from the brain to send back to the heart are called veins. These are the blue vessels seen on the back of

the hand. They are thin and easily torn by a sudden jerk of the head especially if the brain has become smaller with ageing so that it is swinging around inside the relatively more commodious skull surrounded by water, (called cerebrospinal fluid) rather like a disconnected ballcock in a lavatory cistern, with just thin and friable veins stretching between the brain and the skull.

I am glad to say he ultimately made a remarkable recovery and was able to return to Harley Street and piles, being for all intents and purposes, back to normal.

So just occasionally a surgeon needs to be courageous and rely on his or her clinical judgement even in the absence of any scan or X-Ray abnormalities.

Chapter 25

THE SPINE: THE NECK

I have always been very interested in necks. They are much more interesting than you might think. My thesis described the wide range of movement of the neck and how the spinal cord, nerve roots, and surrounding sleeve of tough material, called the dura, adapt to this movement. The cervical spine in the neck is prone to show 'wear and tear' due no doubt to this wide range of movement. The wear and tear changes are called osteophytes or little bony knobs which may eventually press on the spinal cord and nerve roots. These knobs are akin to the knobbly fingers that some elderly people develop with age. These osteophytes can be easily blamed for the cause of symptoms when they are not guilty. They are widespread in an elderly and worn out spine. Hence the need to carefully match the clinical picture with the scan appearances.

I feel it is important to take account of the existing range of movement when working out how best to treat a patient with spinal cord and nerve root damage from wear and tear. I advocate taking X-Rays with the neck bent forward and back to attempt to find out the mechanics of the neck so as to provide logical advice when talking to the patient. Certainly some patient's necks became a narrow immobile canal rather like an old fashioned clay pipe. These patients usually do well if bone is removed to enlarge the canal. The relative lack of movement acts as a splint and protects the spinal cord post operatively. Yet there are other affected patients whose necks remain very mobile. These patients do not obtain a good result from 'canal enlarging' surgery.

I was invited to Massachusetts General Hospital in the USA to give a talk about the cervical spine and how best to treat spinal cord and nerve root damage from

wear and wear in the cervical, or neck, spine. This lecture was in the 'Ether Dome' which was the original operating theatre where ether was first given. It is now a lecture theatre. The neurosurgeons kindly turned up to listen. I can remember them well, sitting in a group with cords round their necks and hats on their heads. They looked like Wild West cowboys. They were unimpressed. They said that, 'we obtain excellent results just enlarging the bony canal to give the spinal cord more room'. They made it very obvious that they thought I was talking a lot of nonsense.

After the talk Professor Raymond Adams, Professor of Neurology, came round and said how very interesting he found my talk. He added, 'the results of surgery on the cervical spine here are so bad that I have stopped referring patients to the surgeons'. This illustrates that the surgeons were getting good results no doubt on those patients with 'clay pipe immobile spines' but they were not seeing the other, more difficult to treat, patients with very mobile spines. One must always be aware of 'selection bias' when assessing results.

Disc prolapses, as opposed to 'wear and tear boney knobs' (osteophytes), occur in the cervical spine as well as the lower, lumbar spine. They project centrally or to one side. One man, after rather too many drinks on holiday abroad, decided to demonstrate his prowess at trampolining. He landed badly on his neck which caused some numbness and tingling below the neck. Over the next few days he became progressively weaker in his arms and legs. I saw him as an emergency when walking had become nearly impossible. He came into my consulting room in a wheelchair. The scan showed a fragment of disc that had herniated or squeezed out backwards into the spinal cord. I removed it. He made a full recovery and returned to work overseeing the well known pub near Oxford called 'The Trout Inn', of Inspector Morse television fame.

Disc prolapses are very different to osteophytes (boney knobs) and are akin to a blob of toothpaste being squeezed out of a tube of toothpaste. This squeezing often occurs when the spine is bent forward and twisted to one side; such as landing badly on one's neck while trampolining.

Osteophytes develop with age due to rubbing of one bone (vertebra) against an adjacent bone. This rubbing happens when the disc (or cartilage) between the bones wears out and allows bones to slide on each other rather than roll on each other. The greater the movement (i.e. the neck) or the greater the weight (i.e. the lower part of the spine) applied to the bones produces more and larger osteophytes and these can be thought of as nature's way of resisting this abnormal rubbing motion; a sort of natural fusion. That is why back pain due to wear and tear in the back may well (naturally) get better with age—not worse, as is commonly believed by patients and some doctors; all the more reason NOT to do back operations for back pain alone, quite apart from the fact they do not work except in a very few situations that I describe in the next chapter.

Yet disc prolapses in the neck can project to one side and compress a single nerve going down the arm, rather than the spinal cord. The pain can be as agonising as sciatica in the leg.

My Pembroke College contemporary and great friend, John Hunter rang me from Canada in agony. By this time he was not only a Professor but also, being Scottish, a fanatical golfer. His agony started on the golf course and he rang to arrange his admission to the Radcliffe Infirmary direct from Heathrow Airport. I admitted him and took out the offending disc prolapse. His pain immediately went and he resumed his travel back home to Edinburgh and the golf course. A very satisfying operation for surgeon and patient alike. I hope this happy result will allow me to contact him over any future dermatological problems I might have because my knowledge of skin disease has always been zero.

Surgeons are better off deciding themselves the best approach to doing an operation rather than being influenced by the wishes of the patient. Once I was asked to give a second opinion on one patient who had severe nerve damage following an operation on his neck. This patient lived in London and according to the referring doctor was a leading member of the London underworld. He had developed very severe pain down the right arm and had seen a London

neurosurgeon who rightly advised an operation to remove the disc prolapse pressing on the nerve in the neck. The standard approach is through a curved incision in the front of the neck. This indeed produces an excellent view of the nerve. However this particular patient found the thought of a scar over the front of his neck 'professionally' unacceptable. The surgeon said he could do this operation through the back of the neck. In fact this is done but far less frequently. Very unfortunately the surgeon not only drilled away the bone covering the nerve but the nerve itself resulting in severe and irreversible weakness and withering of the right arm. There was nothing that I could do to reverse this. The message is that a surgeon should use the safest operation and the one he is most used to doing. He or she should not be unduly influenced by the patient's wishes. In fact the usual incisions in the front of the neck heal remarkably well and are hardly visible and it was a pity this was not explained to the 'underworld' patient prior to the operation.

Chapter 26

LOW BACK PAIN and SCIATICA

I must have said several thousand times that back operations should be done for leg pain, not back pain. If a surgeon removes a protruded or extruded disc fragment pressing on a nerve root the patient experiences immediate relief of the leg pain. Indeed it is a wonderful operation as long as the surgeon selects the correct person for the operation. I always add that no surgeon can give somebody a new back so post operative 'core', or back, stability exercises (such as 'pilates' exercises) are essential to minimise future back pain. Unfortunately proper patient selection is often badly done. When two 'disc prolapses' are removed then it is probable that neither should have been operated upon. If the sciatica, or leg pain, is indeed due to a disc prolapse then just one prolapse is enough and lightening does not strike twice, that is to say, disc prolapses do not happen twice to cause a single bout of sciatica.

Disc prolapses usually happen on one side but very occasionally they can prolapse in the middle line of the spine when they are called 'central' disc prolapses. Some surgeons mistake boney knobs or osteophytes for disc prolapses. They are different as I have described in the previous chapter and this difference is very important to recognise.

However very occasionally back pain alone can be helped by an operation. I remember a medical doctor coming to see me with a story that started many years previously. 'I had just had a shower and suddenly bent down while at the same time twisting, to put my then baby daughter on her potty'. He had sudden agonising pain confined to the back. This back pain was characteristically worse on sitting and over the years the back pain on sitting gradually worsened so that by the time he came to see me he said, 'I can no longer sit to do my surgeries'.

The scan showed a very large central disc prolapse. Being centrally placed it was not compressing a nerve going down a leg. Nor fortunately was it yet pressing on the nerves to the bladder and bowels which can happen with 'central' disc prolapses. I removed this disc prolapse and within 6 weeks he was not only playing tennis but also able to sit to do his outpatient surgeries. I have seen a few other similar patients always with the same story of a sudden bending and twisting movement followed by just back pain, worse on sitting. These patients do well from surgery, but they are very few and far between. I do not want to encourage people to have back operations for back pain, unless there is a VERY good reason. Usually there is not.

There is one other cause of surgically curable back pain. I shall call him Robert. As a young man he was a promising rower. However in his early twenties he developed back pain. It was severe but the scan was normal. There was no disc prolapse. His back pain persisted with severe intermittent episodes of pain. He gave up rowing, took up coaching and became an extremely successful coach. Perhaps those with an allegiance to Cambridge, would say too successful a coach.

Some years later he went skiing. The very severe back pain recurred and he needed a helicopter to help him get down the mountain. His general practitioner had him admitted to the local orthopaedic hospital. The MRI scan was normal so they sent him home, but still in severe pain. At this point his doctor asked me to see him. I took a careful 'history' and it seemed to me that this back pain was often initiated by movement. Indeed the MRI scan was normal. I then asked for X-Rays of his lumbar or lower spine be done with the rowing coach bent fully forward and backward.

Radiologists hate doing 'ordinary' X-Rays because they feel such X-Rays will show nothing new especially if the MRI scan was normal. I dug my heels in and insisted! The radiologist finally agreed to do the X-Rays I desired. These showed that one lumbar bone (vertebra) was sliding forward several millimetres on the one below when the spine was fully bent forward. The MRI scan is done in a

neutral position and therefore does not show the effects of movement. My early interest in the spinal biomechanics proved useful in the lumbar spine as well as the cervical spine. I carried out a fusion operation which stopped the bones slipping on each other and this cured his severe episodic back pain.

Sciatica or pain radiating down the leg below the knee, is usually due to a disc prolapse compressing a nerve. But such a prolapse can also cause mainly muscle weakness and a foot drop so the foot cannot be bent back.

I once saw an olympic rower with such a foot drop yet without too much sciatica pain. I discussed the options. My view was that an operation to remove the disc prolapse compressing the nerve would be the best way of restoring the strength of the foot but the other option was to wait especially as she was not in severe pain. I had thought the recovery of weakness would be paramount for her and that she would opt for an operation.

But she decided to wait and see. And she was right to do so. Her foot drop recovered over several months. She went on to win at least one more Olympic gold medal.

This shows the importance of the surgeon giving options but it is the patient who must decide what should, or should not, be done. Only the patient knows how much the pain or other symptoms affect his or her life. I advocate only having an operation for pain when the patient has no other bearable alternative .

On occasions one gets no thanks for being correct. I remember a very imposing lady coming to see me. She had been the mayor of Maidenhead and one could see she looked the part. She came in clasping her hands behind her back and walked bent slightly forwards. I greeted her by saying, hopefully reassuringly, that I could see what her problem was.

She was furious. She recounted that she had seen many local surgeons and had several spinal injections all to no avail, yet, 'you take one look at me and say you know what is wrong'. She showed a classical appearance of someone with spinal stenosis. The boney canal surrounding the nerves to the legs had become narrow due to the wear and tear of the spine producing these boney knobs or

'osteophytes'. Such a patient develops pain and pins and needles down one or usually both legs on standing and walking, yet these symptoms completely disappear on sitting or lying down. But if the patient bends forward this straightens out the bulging ligaments impinging on this nerve canal, thus slightly enlarging the canal. This relieves the pressure on the nerves and stops the pain. Therefore this 'bent forward' position allows the walking distance to increase before the sufferer has to sit down; hence this lady mayor walking with her hands clasped behind her back, leaning forward as if walking into a strong wind.

An operation removing some of this knobbly bone to give the nerves more room, is extremely effective. This condition is called 'spinal stenosis' and the operation is called a 'decompressive laminectomy'. The results are excellent.

Nowadays surgeons also fuse these bones as well which usually involves metal, screws and bone grafts. The fusing adds considerably to the length and potential dangers of the operation. I have never done this additional procedure because the wear and tear 'boney knobs' in fact perform a 'natural' fusion of the spine. I have never regretted not adding the metal fusion to the decompressive laminectomy for spinal stenosis.

I am always surprised how often surgeons embark on a fusion without doing X-Rays with the patient bent forwards and backwards in order to find out how much movement is actually occurring, before any operation is done to stop movement! By all means do a metal and bone graft fusion if there is actual instability but in my opinion, potential instability is not a reason. More often the osteophytes or boney knobs are in fact nature's natural fusion and the potential for actual instability does not arise.

I am always worried when someone tells me, 'I have a pain that wakes me up at night so I have to get up and sleep sitting in a chair' One patient, a student, actually found the best way to get pain relief was to get up and play squash in the middle of the night. This is completely unlike the pain from a disc prolapse or spinal stenosis. This pain, bought on by lying flat, is typical of a tumour of, or

near, a nerve in the spine near the spinal cord. These tumours, usually benign and curable, are rare. Before scans were available this diagnosis was often delayed and most if not all of these patients I eventually saw had been diagnosed as, 'hysteric' or, 'malingering'. Such a dangerous diagnosis.

I saw a young girl from Northampton with such a tumour. Very sadly this turned out to be an unusual malignant tumour and I could not help her except by taking a biopsy to establish the diagnosis. I later spoke with her mother after her daughter had died. She said the thing that had really upset her daughter was not the fact she had a malignant tumour and would die, but that she had been initially labelled as a hysteric. Regrettably this diagnosis of 'hysteria' (or 'malingering') is made by doctors when they do not know what is wrong. I suppose the bizarre need to get out of bed and to sleep in a chair plus the fact that often there is no evidence of nerve damage early in the course of the illness, confuses doctors. The secret to making this diagnosis is knowing not to disregard pain, any pain, anywhere, that wakes someone up from their sleep.

That is not hysteria.

Jackie was a nurse who I knew when I was a medical student. She was a delightful person. She later married a surgeon and developed a deep vein thrombosis soon after her marriage, allegedly due to the newly introduced contraceptive pill. Many years later she developed severe sciatica. Her husband happened to be away. An orthopaedic surgeon friend where she lived, decided she needed an emergency operation to remove this disc prolapse. Because she had had this deep vein thrombosis many years in the past, the surgeon put her on anticoagulants to thin the blood and prevent another thrombosis post operatively.

Tragically she developed a massive post operative blood clot. This pressed on the nerves, not only to her legs but also to her bladder, vagina and rectum.

I was asked to see her and write a report. Although her bottom area was numb, this numbness was associated with a constant horrible untreatable burning pain around the rectum. Indeed, yet again more 'anaesthesia dolorosa'. Equally bad

was the numbness of the bladder, vagina and rectum. This caused incontinence of urine and faeces and precluded normal marital relations. Patients cannot tell if they are going to pass wind, or faeces, or indeed anything.

This is one of the very worst things that can happen to anyone. It is called 'the cauda equina' syndrome; the cauda equina or horse's tail, refers to the sheaf of nerves coming off the end of the spinal cord to go down into the legs and pelvis. It can happen before an operation due to a central disc prolapse or spinal tumour pressing on these all important nerves. It can also happen after an operation if the operation has been done roughly or a postoperative blood clot develops, as with Jackie. As she said, 'how can I talk to my daughters about the facts of life and indeed how can I live a life, with this terrible gnawing burning pain, incontinence and numbness.' How indeed. She had and has, my utmost sympathy. It is untreatable.

Chapter 27

THE BILLIONAIRE.

I do not, and have not, really come across billionaires very often, if at all. Except one in fact, who became a patient. He was immensely successful. As a young boy he was good at maths. This allowed him to build a large and highly successful business. Normally he was energetic, aggressive, and mercurial. One might say he was not perhaps the easiest of men either to work for or live with. He lived abroad. His family asked his London based GP to find a neurosurgeon to fly out and see him on his yacht which in reality was an ocean going liner. We flew overnight to see him. When we met he was sitting mute in a wheel chair. He was fed by a nurse. He was incontinent of urine and faeces. A scan was produced which showed that the cavities of the brain were larger than normal.

The question arose whether these cavities were larger than normal because there was high pressure in the head blowing them up like a balloon or because the surrounding brain was thinner than usual due to atrophy, or to put it more prosaically, rotting of the brain due to old age? The picture was not however that of brain rotting causing dementia.

He was not a generally fit man. He was short, very fat and had high blood pressure.

His wife bade us farewell and gave each of us a china ashtray although neither of us smoked.

I admitted him to hospital in the UK and did a simple test which was to do a lumbar puncture and draw off some cerebrospinal fluid. This has the effect of lowering the pressure in the brain; if his illness is due to high pressure then this simple test should lead to improvement. It did.

I diagnosed 'normal pressure hydrocephalus'. Let me explain. Inside and outside the brain and spinal cord is watery fluid called cerebrospinal fluid (csf). It is supposed that this fluid acts as a cushion to protect the brain and spinal cord. This fluid is made in the cavities of the brain. It percolates though a system of tubes and cavities (ventricles) to emerge out at the back of the lower part of the brain. From there it spreads around the outside of the brain and spinal cord and is absorbed back into the blood stream by entering a large vein at the top of the head, inside the skull, called the superior sagittal sinus. 'Sagittal' means from front to back which is exactly where this large collecting vein is. 'Sinus' means a big vein inside the dura lining the skull.

There is thus a continuous circulation of this fluid. Hydrocephalus means too much cerebrospinal fluid in the head. There are various other causes for high pressure. I have already mentioned lead poisoning causing swelling of Trevor's brain and also a blood clot such as little Ian 's or a large tumour or lump in the head, such as Jane had. But the commonest cause is due to a blockage of the normal circulation of the cerebrospinal fluid thus 'blowing up' the cavities or ventricles of the brain. Normal pressure hydrocephalus is a misnomer. It is really intermittently raised intracranial pressure and may come on insidiously. Any previous bleeding into the space containing the cerebrospinal fluid from, for instance, a mild head injury or stroke or alternatively a bout of meningitis all may lead later, often much later, to scarring and a blockage of the spaces through which the cerebrospinal fluid flows. The patient develops, often many years later, a triad of disorders such as an unsteady gait, incontinence of urine and dementia.

I felt the improvement seen after the lumbar puncture was sufficient to recommend the insertion of a shunt. This is similar to the shunts put into babies with hydrocephalus. The tube runs from the cavity of the ventricle of the brain under the skin into the abdomen which provides a large area of tissue called peritoneum which absorbs the csf back into the blood stream thus bypassing the blockage in the head.

Following this he made a dramatic recovery. Within 6 weeks he was talking and walking. His incontinence disappeared as did his wheel chair. He also regained his former somewhat difficult and aggressive personality. He returned to work and resumed barking orders to colleagues and family. The enthusiasm of his family with regard to his dramatic improvement became rather more muted with time.

Unfortunately after about 18 months the shunt became blocked and once again he became mute, incontinent, and wheel chair bound. The family refused consent to unblock the shunt. They preferred him as he was.

Perhaps being a billionaire has some disadvantages after all; the need to have such a striving competitive personality in order to become a billionaire is perhaps a problem, especially when it is the responsibility of the relatives to decide on one's fate.

Chapter 28

THE LADY LAWYER.

If I have a favourite patient she must be a serious contender for this accolade. She was one of the last patients with a brain tumour that I operated upon. This lady lawyer, in her twenties, had a sudden epileptic attack quite out of the blue. She was working in Singapore and was referred to me by my very good neurosurgical friend, James who worked at the Mount Elizabeth medical centre in Singapore. In fact I had trained several Singaporean neurosurgeons in Oxford and indeed performed the first pituitary tumour operation in Singapore working 'up the nose' rather than through the head.

I thoroughly enjoyed visiting Singapore. It's clean. It's safe. It's warm and dry apart from the short lasting deluge of rain at 3pm. The people are delightful and the food is delicious. I never needed an excuse to stay there to break the journey to Australia and so reducing my jet lag. I stayed near the Tanglin shopping centre in the Shangri-la hotel. Each visit I would arrange an early morning game of tennis with James. He usually beat me. I once took my eldest son there and the shop keeper made the strategically astute comment that she thought we were brothers. Of course after that I bought several shirts for, no doubt, a very inflated price.

The lady lawyer came to see me in Oxford. There was nothing of note examining her but the scan showed a two centimetre diameter brain tumour just behind her right ear at the back of the right temporal lobe of her brain. Epilepsy can be regarded as a short circuit of the brain and indicates that there is a problem in the brain. The brain does not 'hurt'. The patient has no pain if a surgeon cuts

the brain or burns it with the electrical diathermy used to seal blood vessels. The dura on the other hand does feel pain and is the source of headaches that occur, especially at night time waking the patient from sleep, when the pressure in the head increases. Once again be beware of any pain, anywhere, waking someone from their sleep.

There are two groups of tumours affecting the brain; those that arise outside the brain and press into the brain (called 'extrinsic' tumours) and those that are inside the brain (called 'intrinsic'). Jane (chapter 19) had an extrinsic tumour such as a meningioma. The commonest intrinsic tumour is a cancer that has spread from elsewhere, such as from a lung cancer that killed my beloved former boss, Sam Wass. Otherwise the tumours arising from the brain substance are called gliomas. This lady lawyer appeared to have a glioma. Gliomas vary enormously. Some can be extremely slow growing over several decades. Typically they gradually infiltrate the brain and brain stem, even reaching into the spinal cord. Others, called 'glioblastomas', grow extremely rapidly and kill within a few weeks.

I remember vividly a delightful man in his thirties who came to see me with such a tumour, a glioblastoma. He insisted I should have a meal with him at his London club called Boodles. He was so insistent and knowing his poor prognosis, I did not like to refuse. So I went to London and had a delightful lunch with this bright, cultivated young man. I had never been to a London Gentleman's Club before or indeed since. He gave me a box of very superior wine which I struggled to carry home on the tube and train. I fear this wine was wasted on me. Most of my life I was 'on call' which precluded imbibing alcohol except when on holiday. This delightful young man was dead in three months.

Glioblastomas are inherently aggressive and are not curable. Or so I thought, until I met the lady lawyer.

I advised that she should have an operation. It was essential to establish the diagnosis with a biopsy but this tumour was small and seemingly well defined. When explaining these tumours to patients I ask them to imagine a bowl of

white paint (the brain) into which one pours a blob of red paint (tumour). There are 3 zones; pure white, pure red, and pink. This latter pink zone represents the infiltration of the brain by the tumour where brain and tumour are inextricably mixed. These tumours cannot usually be excised without removing normal brain in the 'pink' zone. Every glioma differs as to how much red or pink there is. The slowly growing infiltrating tumours are really all pink, whereas the aggressive ones are mostly red with a small but deadly zone of pink around the edge of the tumour invading the adjacent brain. These tumours are completely different to the tumours arising outside the brain but pressing into the brain, which are not only usually benign but have a clearcut margin between brain and tumour, such as Jane had.

At operation I found a remarkably confined tumour buried in the brain with tough material around it. The tumour was in that part of the brain where there were no vital functions although I had warned her preoperatively that she would probably lose the field of vision on looking up and to the left. This loss of the 'field' of vision is present with either eye although both eyes can independently 'see'. It is important to warn people of this loss because it would disallow anyone from driving in the UK. Accordingly I removed this tumour with a wide margin of 'normal' looking tissue hoping I would be removing the red and the pink zones. The pathologist reported that this tumour was a glioblastoma---the worst possible sort to have.

I advised she should have radiotherapy and as she was based in London I referred her to a very excellent brain tumour radiotherapist in London. He did have the reputation of always being in a great hurry and was usually extremely brief and frank with the patients. I warned her about two things. The first was that she might see him for only about 30 seconds ('if you blink you might miss him') and secondly he would tell her that she had only 6 months to live. Both these predictions were correct.

Statistics are no doubt wonderful things but as I constantly tell patients they are meaningless for the individual patient. I told the lady lawyer that there were

grounds, based on what I had seen down the operating microscope, for optimism.

My patient made a good recovery and went back to work in the London office, eventually full time. She recuperated from the week's work by taking the Eurostar to Paris and sitting in a cafe in the Saint Germain region of Paris, before coming back to London on the last Eurostar train on the Sunday. One day, in a Parisian cafe, she met a Frenchman. They subsequently married and she moved to Paris. The French neurosurgeons who she saw in Paris, said that she could not possibly have had a glioblastoma. We checked the histology. It was a glioblastoma. We sent the pathology slides to Paris.

She now lives in Versailles and 10 years after the operation she wrote to tell me, 'I now have 3 children, a normal brain scan, as well as a french husband'. She added, 'trying to understand my children's childlike french is unbelievably difficult'! As I said statistics are meaningless for the individual. She must have some very special inherent immunity against this dreadful tumour. Perhaps someone should investigate her immune system.

The now french lawyer-wife and mother has survived her battle. It is very nice to record that she is still winning this battle 10 years after her operation and some 200 years after the battle of Waterloo. Indeed I think she has won her battle with the glioblastoma.

Chapter 29

ON BEING SUED AND OTHER PAINS.

So I thought that I had got away without being sued. I was wrong. I was sued about 5 years after I had retired. The lady had an elusive disc prolapse. Her last, usually mobile, lumbar bone was in fact, fused from birth to the sacral bone which resulted in a fruitless search for this prolapse at the first operation. This was being done late on a Sunday evening as she was in so much pain from the sciatica. In retrospect, Sunday night was not perhaps the best time to do this operation. An X-Ray the following day revealed the cause of my difficulty so I had to open the wound again to find and remove the disc prolapse. This successfully cured her sciatica. Of course I obtained her consent prior to re opening the wound and wrote to her GP explaining that two operations had been required. Many years later I received a solicitor's letter accusing me of negligence for not doing the X-Ray at the time of the first operation. It was not my practice to routinely use X-Rays, relying instead on counting from the bottom, sacral, bone to ascertain the 'correct' level. Her unusual congenital fusion of the last lumbar bone had misled me.

She had apparently just seen an orthopaedic surgeon because of her (inevitable) back pain who told her that my care had contributed to her current back pain because I had had to do two operations on her back in order to find the prolapse. Almost certainly she had not done the 'core' back exercises I tell every patient to do after a back operation because, 'I cannot give you a new back'. She expressed surprise that she had had two back operations under my care and

claimed that I had not told her. Strange not to have noticed that she had had two operations on the same admission!

I consulted the MDU; The time after the event was long and I could not clearly remember what I had said, or not said to her, or indeed was able to prove what I had, or had not, said. The MDU is often faced with this sort of situation. Should one fight this claim or settle it? Some surgeons become very emotionally involved and want to fight. I was not at all emotionally involved being well retired. The MDU was clear that it would be much cheaper to settle the case than fight it in Court. They paid her £100,000. I must say I thought they were very generous but I assume they knew what they were doing. This was my first and last financial dealing with the MDU. But the MDU has been a wonderful friend during my career, albeit mostly in the background.

I am afraid this sort of thing is a way of life for any doctor these days and some people, usually after advice down in the pub, do sometimes sue in the hopes that the MDU will pay them some money to 'go away'. Some doctors become obsessed by the possibility of being sued. They dictate numerous and lengthy accounts of what they said and did, so they can defend themselves in a court of law. They practise 'defensive' surgery and avoid operating when the result is at all uncertain. This approach is not always in the best interests of the patient because operations that might help are not offered to the patient. Perhaps the lady lawyer might not have been offered the radical operation that I had carried out if I had been a 'defensive' surgeon. She might have just had a biopsy.

Nor indeed is this approach in the best interest of the trainees for the defensive surgeon is emotionally unable to allow the trainees to do anything even under supervision.

I remember vividly one elderly patient dying while I was operating. This poor man had a ruptured aneurysm inside the brain. There was nothing untoward and no significant blood loss during the operation. His blood pressure was steady until he had a sudden fatal heart attack. We could not revive him. If one does surgery on elderly people with poor blood vessels I suppose this will very

occasionally happen. There was no history of angina (heart pain) or previous heart attacks. The powerful sensation that has stayed with me is stitching up the surgical wound on a dead person. A most unpleasant experience for several reasons. Fortunately this is the only time anybody has died while I have been operating. I accepted this death without feeling I had failed the person but I am relieved that this experience has not been repeated.

But there is one thing, beyond the reach of lawyers, that has tortured me. It has regularly invaded my thoughts especially when I wake at night time. It happened about 50 years ago when I was a junior doctor. It was in the early hours of the morning. I was doing a late night ward round and an elderly patient suddenly asked me 'how long have I got'. I knew he was dying. He knew he was dying. I should have sat on his bed, held his hand and allowed him to talk. Instead I fobbed him off with a non committal reply. Since then I have always felt how badly I failed this patient.

My medical training emphasised the importance of making a diagnosis and if possible curing the patient. Junior doctors do tests but find it very difficult to know when to say, 'stop'. This is the task of the consultant who hopefully should know when the time has come to stop investigations and treatment and to change the objective to keeping the person as comfortable as possible. I hope these days there is much more training in this aspect of medicine.

I have always felt pain management leaves a lot to be desired. I used to regularly attend the Oxford pain clinic to give neurosurgical advice. My friend John was the anaesthetist who ran the clinic. He had a wonderful Welsh way with the patients and they did indeed love him. The spinal nerve injections regularly gave 6 weeks relief of pain. I was convinced this relief was due to a combination of the placebo effect helped by John's kind and encouraging way with the patients. One could argue that the fact that their pain had been helped was the only thing that mattered. Yet on the other hand the sceptical scientist in me dictates that it is important to know if the placebo was, in fact, the basis of the pain relief and not that the surgeon or anaesthetist had done something

fundamental to effect this pain relief.

Doing (back) operations to cure pain is often a difficult task and if only 6 weeks of relief is obtained then the surgeon should be honest and face the fact that his or her operation has not been a true success. There are safer ways of obtaining a placebo ('pleasing') effect than doing an operation under a general anaesthetic. The best way to stop pain with pain killers is to keep the pain suppressed by giving a regular smallish dose. This prevents the pain building up. Yet the nurse with a clipboard asking the patient to assess the pain level from 1 to 10 and only giving pain relief when the pain approaches 10 betrays a failure of understanding the need to keep the pain suppressed by a regular small dose of pain relief rather than to allow the pain to dominate. Such severe pain causes the patient to become stiff and immobile causing further agony. This severity of pain becomes much more difficult to 'get on top of'.

It was my routine practice to insert an epidural catheter during spinal operations, done under general anaesthesia, so the patient could receive pain relief post operatively over two or three days: Similar to some mothers having 'epidurals' during childbirth except the insertion of the epidural was easily done with this space exposed during the spinal operation. This post operative epidural pain relief worked extremely well and allowed early mobilisation of patients. This early and virtually pain free mobilisation also seemed to be very effective reducing the overall amount of pain that the patients experienced after their spinal operations.

Chapter 30

JOURNEYS END; RETIREMENT. CANCER.

Retirement came upon me rather quickly. I suddenly realised that I no longer wanted to spend all day seeing patients. This bothered me, indeed, rather frightened me. It was 50 years, almost to the month, since I started my medical training at Cambridge and exactly 35 years since I started as a consultant neurosurgeon at Oxford. During this time I had enthusiastically embraced medicine and strove to be the best I could be for my patients. I became frightened, not from making a mistake, but because the last thing I wanted was for patients to realise that I did not want to be sitting in a clinic seeing them; and they would know it. So having made the decision to retire I immediately stopped seeing new patients. Obviously I stayed long enough to operate on those patients still on my waiting list.

What had changed? Looking back there were three particular reasons that all arose within a few months of each other. First, I was getting more tired. Much as one likes to feel one can go on for ever, one cannot. I was 67 years old and the inevitable ageing process was beginning to creep up on me. After 50 years of intensive medical training and busy consultant practice I began to think about other things I might do during my remaining life. Surely there were other things in life beside medicine? Furthermore I still had young children that I wanted to see grow up.

Secondly, we had decided to move from the large, cold, ugly, and expensive-to-run house that we had lived in for 20 years; the one the Cairns family had also lived in before us. We had found and bought the house we wanted. The house and garden were smaller. It was still within the City of Oxford and near a good bus service. A mill stream flowed alongside the garden. We could see kingfishers, woodpeckers, herons and other aquatic birds from our kitchen. This satisfied my 'aquaholic' needs. I have always loved water. But both the house and garden needed a lot of work, work that I needed to do while I still could.

Thirdly, I had developed prostatic cancer. This was diagnosed early thanks to three factors; single sculling, my GP, and the PSA test (Prostatic Specific Antigen).

Let me explain: I had taken up single sculling at the age of 60 and thoroughly enjoyed the challenge of learning to balance this thin beautiful boat, and allow my 'blades' (oars) to be 'off' the water. I also enjoyed the exercise as well as the peace and tranquility sculling on the River Thames. In November 2006 I developed severe pain down my right thigh. My GP, John Sichel, diagnosed bursitis and indeed aspirated some fluid from the bursa which provided immediate pain relief. A bursa is similar to an 'internal blister' due to one muscle rubbing on another muscle or bone. We agreed that my sculling had bought this on. John added, 'while you are here we should so a PSA test'. He had done this on each of the infrequent occasions I had seen him in the past, even though I believe GPs were generally discouraged from offering this test.

The PSA came back as 4, the upper limit of normal. I suggested the hard seat on my scull perhaps had massaged more PSA into the blood stream. So we repeated the test. It came back as 4 again. John pointed out that it had been 2 five years previously. He was worried about this increase although all the results were still within the normal range. He referred me to a urological colleague who detected a hard nodule and the biopsy showed a reasonably aggressive tumour. Certainly not one that could be 'watched'. The tumour was subsequently removed and fifteen years later I remain cured.

The PSA test engenders considerable debate. Public Health doctors say it should not be done because overall it does as much harm as good. There is a very unenthusiastic official attitude towards the PSA test in the UK. This opinion is based on 'population statistics'. But as I have pointed out previously these 'population statistics' are meaningless for the individual including myself.

The more indolent tumours do not need treatment and are better left alone, or left undiscovered, for fear of unnecessary treatment with unpleasant side effects. Many old men die of other diseases rather than from their slowly growing,

indolent prostate cancer. Yet how do you know which patients need aggressive treatment for an aggressive prostate cancer and which patients need to be merely observed? The answer surely must be to do a biopsy, nowadays preceded by a MRI scan, especially if repeated blood tests show an increasing PSA level. But these blood tests need to be done!

I have seen too many of my friends and colleagues die from prostate cancer. It is not always such a 'benign' cancer and twelve thousand or more men die each year in the UK from prostate cancer. I was keen not to be part of that number. Can the Department of Health's nihilistic approach be justified concerning doing a PSA test, or even, repeated PSA tests? I am thankful that I had a GP who ignored the 'official' line, and did do routine PSA tests on his older male patients which undoubtedly detected my fairly aggressive cancer while it was still curable.

So the bursa caused by my sculling, had taken me to the GP who had by chance, or more likely, perspicacity done a PSA test. Indeed I like to think that my cancer was detected early thanks to a combination of my sculling, my clever GP, and the PSA tests. Without these three acting in concert, my cancer diagnosis would have been much delayed and almost certainly I would not now be alive to tell my tale. I am very glad I took up sculling!

A final post retirement thought. Would I follow the same neurosurgical path today? That is a difficult question for me to answer. The probability is that I would choose to do surgery again. Furthermore neurology still has a fascination for me so the answer is that, yes, I probably would again choose neurosurgery. But where? And how?

There is a nuance of reluctance in me which has nothing to do with neurosurgery as a career choice but everything to do with the state of the NHS. The vast majority of doctors working these days in the NHS seem very unhappy. This unhappiness relates to the management structure of the NHS; the nit picking regulations; the excessive, bloated, and unnecessary bureaucracy; the inability of management to make a decision without hiding behind a committee;

the failure to relate departmental funding to the amount of work done; the arcane accountancy rules which still exist in the NHS; the ignorance of 'higher' management as to what actually happens on the 'front line'; the lack of transparency of management, their desire to cover up difficulties and their easy recourse to blackmail towards any whistleblower, such as happened to me when I was about to publish 'OxDons Syndrome'; the massive amounts of money being wasted in the NHS yet morale sapping minor economies are introduced; the excessive work load of the junior doctors; the inability to be master of one's own professional life; the blame culture especially towards the junior staff; the denigration of the professional status; and last but not least, the lack of fun and 'bonhomie' nowadays working in the NHS as well as the feeling one is doing a job which is unappreciated.

The surgeon, with a silly hat on, is no longer allowed to carve the ward turkey on Christmas Day while his children serve the patients and nurses. Why? Health and Safety, of course. Some other minor things still really rankle because they did make a difference to the ease of one's life. When I was first a consultant we had our own personal parking slot. This was useful as one had to go and see patients at other hospitals, often at short notice. If we operated throughout the day, then sandwiches were sent up to the theatre to sustain us. No longer of course.

And how? Perhaps nowadays I might even be tempted to go down the academic path to become a professor: But that would mean doing less operating, seeing fewer patients but spending a great deal of time writing grant applications and attending committee meetings. But at least one would escape the stifling clutches of the NHS.

My problem is that I became a doctor because I wanted to treat people rather than to become a professor and gain professorial 'kudos' or government honours. I have had a professorship conferred on me by one kind overseas country but I have never been inclined to use it in the UK. However some NHS colleagues so honoured do continue to use 'the professorship' back in the UK

which of course is understandable, but this suggests there is indeed kudos having 'Professor' before one's name.

Ideally if I had to choose nowadays, I would like perhaps a job as a professor, employed by a university in order to escape the NHS yet being able to spend my time treating patients and teaching. Sadly I do not think this post exists. Looking back I have been very fortunate working for the NHS before the stifling bureaucracy grew like a cancer throughout the organisation. Perhaps 'teaching professors', without the requirement to produce rather unproductive research papers by the hundred weight, should be introduced! I am also aware that I am an exceptionally bad committee person. Committee work is essential for a successful university career.

When I first became a consultant few, if any, of these management problems existed. I had a tremendous sense of satisfaction running my own professional life the way I thought it should be. I aspired to be the best that I could be. I wanted my patients to have the best care in the world whatever their status. Second best was not an option. I wanted to advance knowledge and improve care where ever possible. I wanted a collegiate relationship with my colleagues. Those early days of my time in Oxford were immensely happy and satisfying for me.

Needless to say one has to accept that a career choice such as neurosurgery has consequences for one's own personal life. It is just not possible to follow such a career and have the life the majority of other people have. Some people believe it should be possible. I do not. Nor did I particularly want the life the majority had.

Being a neurosurgeon is a tremendous privilege and with that comes very heavy responsibilities. In neurosurgery there is a fine margin between success and failure. I found coping with these responsibilities depended on my knowing that I had done my very best for each of my patients. A heavy, career long, self imposed jail sentence perhaps? But is there an alternative? I do not know of one and indeed I would want that any neurosurgeon operating on me or my family

to be under a similar self imposed sentence.

I record my medical life because I suspect it represents in many ways a bygone era. Doctors did not advertise their services when I was young. Indeed any attempt to do so would incur the wrath of that otherwise feeble organisation called the General Medical Council (GMC). The GMC used to be more concerned with a doctor forming an emotional relationship with a patient rather than being incompetent and harming or even killing a patient. The GMC is still feeble; it is meant to oversee the medical profession and maintain standards. It has little understanding of the pressures on doctors, especially junior doctors, working in hospital often in the face of inadequate hospital facilities and back up. It seems happy to blame, 'strike off' and even imprison doctors without consideration of the hospital input or lack of it. How often does one see a hospital manager held to task in a court of law? Never.

One used to obtain a good reputation by providing a good service to others and this might well take several years to earn. A good reputation was a doctor's most valuable asset. Yes, it takes time to obtain and it can be quickly lost. At least this reputation is based on the opinion of one's peers and not on the doctor's own opinion of him or herself. For a surgeon, like a barrister, 'you are as good as your last case' was and is, a truism.

It seems nowadays reputations are more often made by the number of 'hits' on a doctor's own personal website which he or she has constructed together with glossy colour photographs of the doctor surrounded by grateful patients or a beautiful family. These websites even show video clips of the surgeon operating. These would be more impressive if one knew what the relatives thought of the operative outcomes. I cannot but feel that the more glossy the website the less I would want to consult that particular doctor.

'Website'? Indeed a website seems the ultimate, but apparently essential, modern method of parading one's skills and experience. These days most doctors, perhaps rightly, do not want the life that I and my contemporaries had. Modern doctors are more often part-time. They often want 'a life', which I

suppose means having a life like the majority of the population. My life, especially when young, was fairly monastic. I was happy to pay the price of 'not having a life' for the privilege of being a neurosurgeon.

Actually it is difficult for a patient to choose the best person to do his or her operation. My advice is to ignore the glossy website and ask around. Especially ask a sensible doctor who he or she would choose to do his or her own operation. Go and see more than one surgeon. It is so important to be able to trust the person you are going to entrust your brain or body to.

Yes, wives and partners do need to pay a price as well and some find it is too expensive. The kudos of being a partner to a neurosurgeon can quickly fade and become tarnished. Indeed many 'partners' find that they cannot pay this price. Neurosurgery is a demanding mistress. Indeed I can only think of relatively few first marriages that have survived this addictive neurosurgical mistress who often makes her demands late in the evening or in the middle of the night or at weekends. Just like other mistresses, I suppose.

I have been fortunate. Wonderful scans as well as the equally wondrous operating microscope changed neurosurgery from a rather crude and stressful exercise for both surgeon and patient to a refined and relatively much safer specialty. And I was even paid to do it! I suspect that so far I have had the best of the NHS. We were happy in our hard work. I am grateful for the opportunity to have been allowed to do the job I did, when I did it.

Finally I must ask the reader, if he or she has managed to read this far, 'would you have really wanted to be a brain surgeon'?

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