

The minimalist of St Mark's

→ Jim Boumelha

“It takes a surgeon to stop a surgeon,” says **John Northover**, consultant surgeon at London's world-renowned colorectal hospital. And between his heavy clinical and teaching commitments, he concentrates on helping minimise patient interventions, through promoting screening and prevention, and discouraging treatment and follow-up of dubious clinical benefit.

At the tender age of 15, when words like ‘rectum’ and ‘anus’ will still have been no more than a source of hilarity to most of his peers, John Northover knew he wanted to be an abdominal surgeon. It was an unusual career choice, particularly for a boy from a non-medical family, growing up in the post-war years on a poor housing estate that had been hastily constructed to accommodate evacuees from the blitz.

“I just knew what I wanted to be. The surgeon thing is, I think, fairly explicable on generic grounds. But as far as abdominal surgery is concerned, as opposed to cardiac or neurosurgery, it just seemed to be geographically the centre of things, the proverbial blood and guts.”

It was to be a hard slog in the early days, working hours that would seem incredible to today's young medics, and doing the rounds of countless hospitals, gathering invaluable experience and absorbing knowledge on the way, from the many impressive practitioners he came into contact with.

But he kept his eye on the ball. And by the time

he was 37, in 1984, he was offered the position of consultant surgeon at the internationally renowned St Mark's Hospital in London – the only hospital in the world to specialise entirely in intestinal and colorectal medicine. Despite attempts to lure him away, he has never left.

Northover's loyalty to his present place of work is not hard to understand, as St Mark's occupies a very special place in the history of the development of colorectal cancer surgery. It was founded in 1835 by Frederick Salmon, a surgeon who was fed up with the way the medical establishment put its own interests above those of patient care. Originally named the Infirmary for the Relief of the Poor Afflicted with Fistula and other Diseases of the Rectum, it relied heavily on support from benefactors, among them the author Charles Dickens, a patient of Salmon's who attributed his particular ailment to ‘too much sitting at my desk’.

Cancer became an increasing focus for the hospital from the early 1900s; in 1909 the hospital was renamed St Mark's Hospital for Cancer, Fistula etc. Over the course of the next 100 years – a period Northover characterises as ‘the century of rectal can-



cer surgery' – St Mark's led the way in innovations that have transformed the chances of colorectal cancer patients worldwide, saving lives and minimising the damage inflicted in the process.

The official history of St Mark's, written in 1985 by Lindsay Granshaw (now married to Northover), talks in terms of epic battles between clinical needs and institutional resistance, not least over the issue of organ-specialist surgeons. And the early adoption of a practice that is only now becoming standard throughout Europe must take a large part of the credit for that hospital's extraordinary list of achievements.

The Lockhart-Mummery technique was developed at St Mark's in the early 1900s by the pioneering cancer surgeon whose name it bears. The 'Dukes' staging system, still in use, was developed

at St Mark's by Cuthbert Dukes – "the greatest ever colorectal pathologist" – who worked there from around 1920 till 1950. The ileoanal pouch, a replacement rectum, was developed at St Mark's in the 1970s by Alan Parks, "one of the all-time great colorectal surgeons". And the scientific research pursued at the hospital has been a driving force behind improving care for colorectal cancer patients.

So it's not entirely surprising that the man who knew from boyhood that he wanted to be an abdominal surgeon won't be tempted away from here. "There would never be anywhere else," he says.

Of course Northover, fresh out of grammar school, knew none of these things. He applied to King's College, London, for his medical training, purely because he had a friend who was applying

there. His interview was the first time he had been to London, and he felt a bit of an outsider. "I was asked if I had any medics in the family or whether I had discussed medicine with any medics, and if so what theme had particularly enthused me. I had in fact been to see our general practitioner, but the only thing I could think of that he had said – which was something I did not understand – was that he had an overdraft of £8000. When I told them that, they absolutely roared with laughter. A couple of days later I got my offer from King's." His friend did not.

One of the early influences on Northover was John Dawson, a master surgeon with an interest in hepatobiliary surgery, who was working with an international group of physicians and surgeons based at King's. "I was very enthused by them. In fact I was very fortunate to be able to work as a houseman starting on both the surgical and medical sides of the biliary practices – usually you'd be lucky if you got one job at the medical school."

Things were going to plan. "I was in the abdomen and I was well looked after by my mentors at King's and they sent me off to do a rotation, so I chose four jobs that I wanted to do, and I went and did all of those as a houseman. I got my first registrar appointment in Canterbury"

THE PRICE OF EXPERIENCE

Kent and Canterbury Hospital was colloquially referred to as a place with 'good cutting', which meant young doctors gained plenty of experience. However, it came at a price. "There were two junior registrars there, and I did two straight weeks on call – on emergencies 24 hours a day – except for an afternoon and a night in the middle of it. This was followed by a week's break where I put in an afternoon and the night I missed out during that fortnight."

While accepting that the routine may not have been the best for patients being cared for by doctors who hadn't slept for days on end, Northover believes there is no alternative when it comes to gaining wide experience, fast. He fears this is something that has been lost in today's training programmes, constrained as they are to conform to the European Working Time regulations. "In those days you were expected to learn by osmosis," he says.

When he had been at King's as a junior house surgeon, the first liver transplant operations were starting, and Northover witnessed first hand the

amazing potential – and the shortcomings – of this revolutionary procedure. "I lived with these patients because none of them ever left hospital, so I got to know them really well. It's an extraordinary experience to see these people live and die. One of the problems was that the anastomosis, where you join the transplant onto the patient, would fail and they would end up with biliary fistula, bile coming out through the abdominal wall. They got peritonitis from that and they would die."

He wondered whether the problem might lie in the blood supply having been compromised by the surgery, and went off to read up on it. On finding there was nothing in the literature, he decided to claim that area of research as his own. So in 1976, having done his early 'cutting' and now ready for a year in research, he set off for Cape Town, where he worked in the department of surgery with the biliary surgeon John Terblanche. "I came away with the definitive description of the blood supply of the bile duct, which is now the standard description, and hypothesised that the bile duct anastomosis was failing because of disruption of its blood supply. I was also able to talk about various complications of ordinary biliary surgery relating to the blood supply of the bile duct."

Despite the success in this area, Northover soon realised that his heart was not in hepatobiliary medicine; his first love of colorectal surgery was calling him again. Staying at King's for his training would have meant years of hanging around in a queue of ever-ageing registrars. So with his characteristic sense of purpose, he decided to do "a dreadful thing" – he left his beloved alma mater.

He wanted to go to St Mark's, but his application was unsuccessful, as was a second application made the following year. By the time he finally got a post as registrar at his chosen hospital, he had already spent several years gaining valuable experience at different institutions.

In those days, he says, it was usual to apply three or four times before being accepted at St Mark's. "I'm absolutely sure that it was better that I went there later, because it was a finishing school. It was somewhere to come when you've got a good experience of the specialty and you can then go and reflect with a whole hospital of enthusiasts in all the specialties – the surgeons, the imagers, the pathologists. Everybody is totally enthused, and

“I did two straight weeks on call – 24 hours a day – except for an afternoon and a night in the middle”

to come to that with the experience and knowing that this is where you are going to be is very exhilarating.” While there as a registrar his chief, Alan Parks, died, and Northover was appointed consultant surgeon to replace him.

SPECIALISM ‘WAS BAD NEWS’

Not surprisingly, Northover is a strong believer in organ-based specialism, and he predicts that the trend towards specialisation in surgery will soon spread to the other disciplines. “I was brought up to see specialism as bad news. A good surgeon was a general surgeon: this is how I was brought up at King’s,” he said. “But when I arrived at St Mark’s I came into a multidisciplinary environment where everybody worked very well together.”

It hadn’t always been that way. In fact St Mark’s didn’t employ a single specialist physician for its first 100 years. That all changed in 1950, says Northover, with the arrival of Francis Avery-Jones, “the father of British gastroenterology”. “From that, a magnificent medical group developed, including world-class radiologists and pathologists. So there are all these very enthusiastic people in half a dozen specialties and that was very exciting and very unusual. In most hospitals you had one surgeon who did all the colorectals, whereas here there were five and the same number in the other specialties. It is now very hip to be talking about multidisciplinary care. We always had it, we always worked that way.”

Northover claims St Mark’s also blazed the trail for clinical nurse specialists, through the roles developed there for nursing, originally in the areas of nutrition and stoma care. Today, St Mark’s employs nurse consultants, including a colonoscopist, who runs an autonomous practice. Specialist pouch nurses play a key role in helping manage all sorts of problems associated with the ileoanal pouch used in sphincter-saving surgery – problems that were particularly distressing in the early days of the technique. “Some of [the patients] lived torrid lives, and about 10% had to have the pouch removed because

of functional or infection problems, and so nurses have been running alongside to help them; they are always available, whereas the doctors may not have been easy to find or to talk to.”

Philosophically, Northover describes himself as a minimalist. It is a tag that was first applied to him with regard to his opposition to monitoring the CEA (carcinoembryonic antigen) tumour marker in patients after surgery for colorectal cancer. Research he had conducted in the 1980s, comparing the effect on survival of aggressive CEA monitoring versus no monitoring, revealed that, on average, CEA signalled a recurrence 11 months before symptoms became apparent, but the early warning made no difference to survival. “So the only difference was the patients knew longer that they were going to die of the disease.”

“I was very minimalist in terms of follow-up and developed the reputation, which then went to other areas – medical oncology perhaps – of being a bit of a nihilist, but I saw myself as being a realist on behalf of the patient.”

Despite spending so much of his time teaching the technical micro details of surgical procedures, he likes to bring the broad historical view to his work. This he attributes in large part to the influence of his wife, the historian Lindsay (née) Granshaw, whom he met when she was employed at St Mark’s to write up its history in the run up to the hospital’s 150th anniversary. A life peer since 2000, she now sits in the House of Lords, where, as Baroness Northover, she speaks for the Liberal Democrats on international development issues.

From an historical perspective, he says, it is easy to identify distinct periods in the development of colorectal cancer surgery, and to surmise where it is heading. The first radical surgery for colorectal cancer was performed in 1908, “If you had rectal cancer you had to have the whole of your rectum and anus out; 40% of patients died during or immediately after surgery.”

The following period saw successive steps away

“I developed a reputation of being a minimalist, but I saw myself as being a realist on behalf of the patient”

from this highly mutilating procedure. The famous Cuthbert Dukes discovered that lymphatic drainage from rectal tumours is all in an upwards direction, “not radial, as with breast cancer.” This meant that for some rectal cancers it was no longer necessary to take the anus out, “You could take the bad bit out, and join the ends together.” This was regarded as heretical when it first began, around 1940, but gradually more and more patients were treated with so-called sphincter-saving surgery, “So today about 85% of rectal cancer patients have their anus preserved – they don’t have to have a permanent colostomy.”

The next crucial phase came in the 1970s, when the definition of the ‘good’ surgeon stopped being just the ‘fast’ surgeon. “For thousands of years”, says Northover, “you had to operate fast, because the longer the operation, the greater the chance that the patient would die.” But as peri- and post-operative care improved – with the advent of better anaesthetics, antibiotics, blood transfusion, muscle relaxants – surgeons had the chance to slow down without putting the patient at risk, and could do much more precise and careful surgery.

“I think by the end of the 20th century we’d got as good as we are going to get in terms of the precise details of those operations. A major part of work at the end of the 20th century going into this one has been trying to spread high-quality surgery across the surgical community so that all patients have access to this and that’s where specialisation really kicks in.”

SPREADING BEST PRACTICE

Northover pays tribute to the work of surgeon Bill Heald, “Saint Bill of Basingstoke”, whom he describes as an evangelist. “He’s gone off and preached what’s called total mesorectal excision [TME] and changed the outcome for whole countries. This has been particularly true in Sweden and in the Netherlands.”

The technique itself, he stresses, has been in use by many surgeons, including at St Mark’s, for the past 75 years, “we have the film evidence. TME was not invented by Bill in 1982, but he has helped

to evangelise it. This is something we’ve been working on with the Department of Health – how you disseminate expertise in various areas. Bill has done that really off his own back, trying to spread the word to other countries – and to his colleagues in the National Health Service – from his Pelican Centre in Basingstoke.”

Northover is optimistic that the future will see certain surgical procedures used less frequently, or made redundant altogether, as advances are made in other therapies. He offers as an example the decision to stop operating on epidermoid anal cancers following a UK multicentre trial that he had suggested, comparing the efficacy of radiotherapy versus chemoradiotherapy as primary treatment.

The findings showed impressive results for the chemoradiotherapy arm. “We did not ask the question in the trial as to whether surgical compared to non-surgical treatment was OK – we leapfrogged it and it became a non-surgical disease,” says Northover. “It took surgeons to persuade surgeons to stop operating,” he added.

That trial was one of many initiatives Northover has been involved with in his capacity as head of the Colorectal Unit of the Imperial Cancer Research Fund, later to become Cancer Research UK, which was set up at St Mark’s when he started work there, and to which half of his time was devoted until he relinquished this position in 2005. He has found his research career very satisfying, “because thinking in population terms is the way I like to look at things rather than only operating on this patient.”

One of the first things he did on arriving at St Mark’s was to set up a familial non-polyposis cancer clinic. “We’ve now got about 4,000 family members who have this hereditary predisposition, and who are on follow-up, having regular colonoscopy and adenomas removed as they appear, because that is clearly better and kinder management than just chopping out great chunks of colon.”

The registry extended the work started 60 years earlier by Lockhart-Mummery on familial adeno-



Cutting edge. A few of the 600-odd international students who visit St Mark's every year observe while Northover (left), with his senior British trainee, show how it's done

matous polyposis, which saved, and continues to save, countless lives. Northover mentions, as an aside, that Lockhart-Mummery's interest in genetics had a darker side to it. "He was a eugenicist and he wrote an extraordinary book called, *After Us or The World as it Might Be*," in which he called for controlling disease through eugenics. He said that one boy in every 200 would be picked out as having an excellent pedigree over five generations and every other boy would be sterilised at birth, and if a woman wished to conceive she would be looked at to see what her pedigree was like over five generations, and only if that was impeccable would she be allowed artificial insemination.

"He said if we do that, all the ugly and unsatisfactory children would disappear. We would have just beauty and grace and intelligence. I sometimes wonder what would have happened to the polyposis registry if Germany had won the war."

SCREENING COMPLIANCE

Northover's approach of looking at the wider picture is also reflected in his strong interest in getting an effective national colorectal cancer screening programme off the ground. One of the first trials initiated by his research unit was an investigation into the compliance with the faecal occult blood test (FOBT). More recently he has been involved in a trial

of 200,000 people, to see whether a single flexible sigmoidoscopy at the age of around 55–60 might decrease bowel cancer incidence and mortality – a great advantage of this technique being that the 'flexi-sig' can remove suspicious polyps as the examination is performed, permitting cancer *prevention* and not just early cancer treatment.

Today, his focus remains on compliance. "It's all very well having a good screening test, but if people don't want to do it you are not going

to save too many lives, and picking a dollop of faeces out of the lavatory and putting it on a card and sticking it in an envelope and posting it is not the sort of things you expect people to do as their hobby."

That being said, Northover expected flexi-sig, "having a telescope shoved up you", would be even more of a turn-off. In 1989, his unit initiated a population-based randomised controlled trial to find out which method would attract greatest compliance. The results were startling – 50% of people would have flexible sigmoidoscopy, only 33% would have an FOB test.

It is likely that flexible sigmoidoscopy will become part of the UK screening programme. For the moment, the programme is based on the FOB test. It started in 2006 and is due to be rolled out nationwide by the middle of 2008.

With his wife heavily committed to her political work, and three children, none of whom have shown the slightest interest in a medical career, home life offers a sanctuary from his heavy commitments as a surgeon, teacher and researcher. Cooking is a favourite pursuit in his spare time, all done with surgical precision. "I am extremely meticulous, almost anally retentive, and I love the preparations. I am in sympathy with the materials and being absorbed in this pastime cleans my head of the craziness of life."