

A brief history of paediatric urology in the UK

ROBERT WHITAKER

Robert Whitaker has lived through the exciting and challenging times covering the development and maturation of paediatric urology. In this article he provides his perspective on the development of the specialty and the key players who made it happen.



Figure 1. Sir David Innes Williams (left) and Mr Herbert Johnston (right) – the two founding fathers of the specialty of paediatric urology in the UK

My first taste of true paediatric urology was at Johns Hopkins Hospital in Baltimore in 1968, where I spent a year with Hugh Jewett and William W. Scott. Although there have been major contributions to the specialty from the UK, it was born in the USA. It was there that I encountered for the first time a territorial disagreement between paediatric surgeons and mainline adult urologists – there were, of course, no paediatric urologists at that stage. The disagreement concerned who should operate on children with Wilms' tumours. There seemed to be no guidelines; just straight competition between the two groups.

This was in contrast to the UK, with the NHS and virtually no private practice in children's surgery, and masses of work for everyone. The criterion here was based not on who should remove Wilms' tumours, but who had the best five-year survival rates. Many years later it became obvious that the presence of a paediatric oncology unit determined this – a fact that we all now know and appreciate. Although Wilms' tumours were one of the earliest and perhaps best example of the need for a paediatric urology service, there were, of course, other conditions that determined the development of paediatric urology.

In the USA, Meredith Campbell of the Department of Urology at NYU School of Medicine, became the first President of the American Society of Pediatric Urology (ASPU) and in 1937 published his mammoth textbook, *Campbell's Urology*. Later, David Innes Williams was to state that much of its content was based more on post-mortem studies and less on clinical experience. Campbell was followed as President of the ASPU by John Lattimer, Frank Hinman and Lowell King – all of whom I got to know during my time in the USA.

Meanwhile, many adult urologists in the UK had developed an interest in paediatric urology, including John Mitchell (Bristol), Richard Mogg (Cardiff) and John Blandy (London), to name but a very few.

SEA CHANGE

The sea change in the UK came with the appearance on the scene of David Innes Williams (Figure 1). 'DI', as we all referred

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to him, had gained extensive experience as a surgeon during his army service in India. On discharge from the Royal Army Medical Corps in 1948, he became a Resident Surgical Officer at St Peter's Hospital, London, where he observed first-hand the confusion of senior surgeons as to how to treat a boy with a posterior urethral valve.

In 1950, Williams became a registrar at the Hospital for Sick Children at Great Ormond Street, London (now known as Great Ormond Street Hospital or GOSH), working with Thomas Twistington Higgins, a general paediatric surgeon with a leaning towards urology. He found him delightful. The only other surgeon who was interested in paediatric urology was Denis Browne, who Williams regarded as 'not having an eye for cystoscopy'. Throwing himself into reviewing the enormous case load of tertiary referrals, in 1951 he helped Twistington Higgins and Ellison Nash to compile the first edition of *Urology of Childhood*. The book was a unique experience and rapidly became the key text for aspiring paediatric urologists. In 1952, at the age of 32, Williams was appointed as a consultant surgeon at GOSH.

GATHERING MOMENTUM

The next milestone came in 1956, with the appointment of Herbert Johnston (Figure 1) as a paediatric urologist at Alder Hey Children's Hospital in Liverpool. He once described himself as 'the poor man's Innes Williams', but this self-deprecating comment was far from the truth. Johnston was regarded so highly that many of us felt his skills and knowledge were well on par with those of David Williams. His contribution to our understanding of many common and more complex clinical problems was extremely valuable.

On Johnston's retirement, Tony Rickwood continued the excellent reputation of the paediatric urological department in

Liverpool. Tony died fairly recently and his contribution will be well remembered.

The next significant breakthrough was the introduction of intravenous urography, and micturating cysto-urethrography (MCUG), techniques that were able to clarify so many previously unexplored conditions. The most worrying and dangerous of these was the boy with a posterior urethral valve. In the early days of David Williams's practice, half of boys with this condition succumbed to an early death. Survival improved with the realisation of the importance of early drainage of urine by ureterostomy, vesicostomy or nephrostomy, and the acknowledgement that urinary infection must be avoided or adequately treated. But even more important than surgical intervention was the role that medical management was to play.

With the arrival at GOSH of a paediatric nephrologist, Dr Martin Barratt, survival in boys with a posterior urethral valve rapidly improved towards the standards we see today. Professor Guy Neild followed Barratt and continued the excellent nephrological care. He also contributed enormously to our understanding of renal changes in puberty.

Looking back at those boys with posterior urethral valves, at the time I worked with David Williams (later to become Sir David), several points come to mind. First, the renal function in the boys with gross reflux on one or both sides fared much worse than those with competent uretero-vesical junctions. It was common to see a boy with no function in a unilateral refluxing kidney. Second, it soon became apparent that the bladder in these boys could maintain abnormally high pressures long after the valve was destroyed. It was this residual high pressure that so often prevented the kidneys from recovering function, and not a suspected 'obstruction' at the uretero-vesical junction. My own



Figure 2. Philip Ransley greatly contributed to the understanding of scarring of children's kidneys

studies confirmed, time and time again, that 'hold-up' at the uretero-vesical junction was only a temporary phenomenon.

David Williams' book, *Paediatric Urology*, later co-authored with Herbert Johnston, prospered. Later editions described series of children with conditions that others might see only once or twice in their careers, providing wise advice as to how to manage these unusual patients. Advice was forthcoming on the modern management of Wilms' tumours, exstrophy, meningocele, enuresis and, of course, recurrent urinary infection. The passing phases of distal urethral stenosis in girls and bladder neck obstruction in boys were soon discounted.

The management of urinary infection in children became a controversial issue, as vast numbers of children with vesico-ureteric reflux were discovered through the use of MCUG. David Williams observed that the more they looked for reflux, the more they found. A variety of operations were devised to correct it, but some of the early procedures were not always successful. This led to a number of important trials of medical management with long-term antibiotics, with outstanding contributions made by

Dr Jean Smellie in London and Dr Kate Verrier Jones in Cardiff. The trials allowed observations of spontaneous cessation of reflux, which subsequently had a major influence on indications for surgical intervention.

UROLOGISTS OR SURGEONS?

Paediatric urology flourished as a specialty and consultants were appointed in most regions in the UK. But where did they come from? There were far more trained paediatric surgeons with an interest in urology than there were trained urologists with an interest in children. Paediatric surgeons tended to be appointed in preference to urologists for some years. Skilled though they were, in my opinion, some lacked a deep understanding of urological principles, such as the mechanics of urinary transport and the nature and effects of obstruction.

In due course the balance was restored and surgeons with extensive urological experience were appointed, such as Philip Ransley, who would have a guiding influence on paediatric urology (Figure 2). Ransley made many important contributions to our specialty, but the most outstanding was his research with Tony Risdon, which clarified the relationship between intrarenal reflux and 'pyelonephritic' scarring of the kidney. At last we understood why some children's kidneys scar and others' do not.

Specific paediatric urological training programmes were subsequently established in the UK. Hypospadias surgery was split three ways between paediatric, urological and plastic surgeons, thereby enhancing the scope of appropriate surgery with the introduction of a large variety of approaches and techniques.

A breakthrough came when Joe Cohen, in Manchester, produced a ureteric re-implant that was uncomplicated

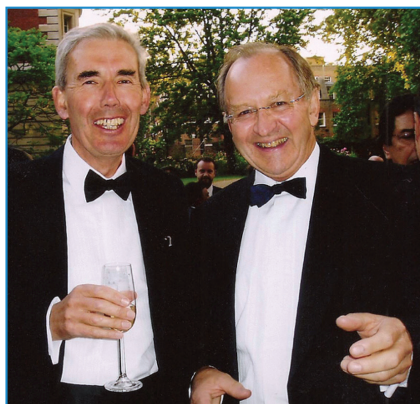


Figure 3. Professor David Thomas (left) and Robert Whitaker at Sir David Innes 'DI' Williams' retirement party in 1978

and highly successful. It has since been adopted throughout the world and, to a large extent in many centres, has replaced time-honoured techniques such as the Leadbetter-Politano.

CARRYING THE TORCH

David Williams made such an impression in the USA that he was invited over there regularly. US trainees, starting with John Woodard, came to work with him at GOSH, many of whom became leaders in paediatric urology throughout the USA and beyond. Williams retired in 1978 and Philip Ransley was appointed to take this leading department forward. He himself retired in 2004, but continues to be a leading figure in our specialty.

By the time I was appointed as a consultant at Addenbrooke's Hospital, Cambridge, in 1973, the specialty had expanded to the extent that there were at least six of us in the UK practising full-time paediatric urology and carrying the torch of our two great leaders.

In 1984 Philip Ransley and I decided that the UK needed an annual paediatric urological course for all interested trainees. The first two courses were held in Egham, Surrey and Nottingham. Since then, the course has been held annually in Cambridge, in September, and remains one of the mainstays of education in our

specialty. Alan Dickson, Tony Rickwood, David Gough, Pat Malone and David Frank were regular lecturers in the early years. I retired in 1990, but David Thomas (Figure 3) in Leeds and his colleagues have continued this excellent enterprise. Indeed, David has been the most consistent attendee and lecturer of us all.

A few of us got together in 1992 to form the British Association of Paediatric Urology (BAPU). Although it started in a modest way, it is now the leading association in paediatric urology in the UK. Never in my wildest dreams would I have imagined that the membership would have reached its current level of 50 practising full-time paediatric urologists. BAPU supports training and continuing education, and its Presidents and committees have nurtured and guided the specialty onwards and upwards over the last 25 years.

A much more exclusive 'club' was started by David Williams and his colleagues in 1963. Known as the Society for Paediatric Urological Surgeons (SPUS), it grew to be an international group of the most respected leaders in the field of paediatric urology. One of my proudest moments was to be elected as a member in 1977.

This short history would not be complete without mentioning the development of adolescent urology by the main protagonist in the UK, Christopher Woodhouse. The smooth transition for children from designated children's hospitals to teenage care was an enormous step forward.

The contribution to paediatric urology by surgeons in the UK has been significant – from a small acorn, the specialty has become a massive oak tree in this country. Our surgeons have played both a planting and nurturing role, aided and supported by contributions from colleagues and peers in the USA, Europe and beyond.