

Should we be concerned about losing urology territory to other specialties?

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The American Urological Association (AUA), one of the premiere professional organisations in our field, defines urology as a “surgical speciality which deals with diseases of the male and female urinary tract and the male reproductive organs”.^[1] It acknowledges that because of the wide variety of clinical problems, there are subspecialty areas within urology that “require additional skills from other specialties,” such as “urologic oncology, male infertility, female urology, pediatric urology etc.” These definitions are not universally accepted. Comparable websites of professional societies representing these other subspecialties define the subspecialties as the “medical therapy of male urogenital tumors,^[2] andrology or male reproductive medicine,^[3] urogynecology^[4] or pediatric surgery of the urinary tract.^[5]” Clearly, there are issues of overlap and competition and the boundaries are not as precisely defined as professional societies would like them to be. Is urology losing out in these contested fields and is this a matter of concern?

The problem is complex and varies among subspecialties and within world-wide urology. The trends, however, follow similar paths and it therefore appears permissible to analyze the issues involved using the example of pediatric urology. Traditionally considered among urologists to be a true child of the field,^[6] pediatric urology seems to have completely moved to pediatric surgeons in some countries and is the focus of heated debates in others.^[7-12] Moreover, as a subspecialty it is disease and population based, making it easier to define demand. Austria has a nationwide registry of the diagnoses leading to hospital admissions.

For 2006, it listed 156,041 diagnoses related to diseases of the urogenital tract; 8.55% of these were for patients aged 0-14 years and 5.8% were for boys. Of the 10,919 conditions listed overall as “congenital defects/malformations” and leading to hospital admission in this age group, 56% involved the urogenital tract. In comparison, prostate cancer led to 14,515 hospital admissions in the same year. In contrast, there were 45 presentations on pediatric urology at the 2006 Annual Convention of the American Association of Urology, as compared with 643 on prostate cancer. Do these figures reflect a field already lost for urology?

ISSUES OF DEMAND

The vast majority of all surgical procedures performed on the urogenital tract of children are circumcision, orchidopexy, and exploration for scrotal emergencies. Even in systems with well defined surgical subspecialisation, these minor procedures are routinely performed by adult urologists, especially in a non academic setting.^[13] It has been postulated that if these procedures were also exclusively performed by highly trained pediatric urologists/surgeons the outcome would be better,^[7] but this has never really been substantiated.^[8] Although the assumption that subspecialist care inflates cost has been refuted,^[14] the sheer numbers would overwhelm subspecialty centers. In the United States, 65% of all boys are circumcised as neonates.^[15] Even with ~90% of general urologists doing these procedures,^[13] orchidopexy alone already outnumbers all major pediatric urology procedures performed at a typical designated subspecialty center.^[7] Most of the minor procedures today are done as day cases, and issues such as lengthy travel distances to subspecialty centers have also become decisive factors.

The challenge for expertise comes from index cases only, such as posterior urethral valves, prune belly syndrome, bladder exstrophy/cloaca, proximal hypospadias, ureteric malformations/malfunctions and other complex disorders that clearly demand special skills and experience. Routine prenatal ultrasound with prenatal detection of severe malformations and the option of termination of pregnancy has impacted the clinical incidence of these problems substantially. Chan, *et al.*,^[16] observed no change in the

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prevalence of neural tube defects in 1991 as compared with 1966, but there has been an 84% reduction in the cases of malformations presenting for treatment due to prenatal screening and termination. A recent study at academic centers in the Boston area documents that pregnancy was electively terminated in 65% of spina bifida cases, 46% of posterior urethral valve cases, 31% of prune belly syndrome cases, and 25% of exstrophy cases, respectively with a comparable decrease in patients presenting for treatment.^[17] In Europe, termination of pregnancies because of significant malformations has even more public support and the impact on index case numbers is presumably even more profound. The pool of patients with complex, but correctable urogenital malformations clearly impacts man power issues, training, and surgical experience in pediatric urology. This is most likely the most important reason why major pediatric urology centers today are treating lower priority index cases. The problems involved are less audible at urological meetings and pediatric urology seems to be fading away in the eyes of general urology.

CHANGE IN MANAGEMENT

Like all fields in medicine, pediatric urology is in constant flux and state-of-the-art care is continuously being revisited. Whereas hydronephrosis, detected by antenatal ultrasonography and assumed to be caused by uretero-pelvic obstruction, was aggressively corrected early after birth 15 years ago,^[18] a better understanding of its natural history has reduced the number of surgical interventions for this by almost 70%.^[19] Expectant management has become the treatment of choice for non refluxive megaureters.^[20] Similar developments occurred in the management of neurogenic bladder dysfunction and in other functional voiding disorders. As a result, most pediatric urologists expanded their expertise in the medical treatment of related conditions and imaging and functional studies, but do less reconstructive surgery overall.

New technology and minimally invasive surgical techniques left their mark on pediatric urology. Open ureteral reimplantation is only indicated today for Grade V vesicoureteric reflux and severe malformations.^[21] In Austria, the number of open surgical anti-reflux procedures dropped 66% from 2001 to 2005, with endoscopic sting procedures up 327%. This does not necessarily reflect a reduced workload for the pediatric urologist, but creates ongoing pressure for continuous medical evaluation and mastering of rapidly developing surgical skills. This is perhaps best reflected in the management of upper tract urolithiasis in children. ESWL and endourological techniques developed in adult urology have also fully replaced open stone-surgery in children regardless of their age.^[22-24] The technology and surgical methods are standard repertoire in urology, but have not always reached pediatric surgeons treating children with stones.^[25] The main challenge for the experienced pediatric urologist today comes with transferring

laparoscopic procedures already considered standard in adult urology, such as laparoscopic pyeloplasty, to the pediatric population, especially in the age group younger than 2 years.^[25] The usual approach in this difficult step is utilizing the mentorship of a laparoscopist skilled in adult endourology in the process blurring the sharp distinction between adult and pediatric urology.

Development can also go in the other direction. Reconstructive surgery for complex hypospadias requires a wide spectrum of surgical techniques and may lead to super-specialisation in urethral and penile reconstruction. It is only a logical step that the same skills are also subsequently applied in adolescents and adults with similar problems, providing the specialist with diversity in his workload and experiences, and also a broader base of income.

STATUS QUO

The contracting number of index cases in pediatric urology has reduced the overall number of cases coming to surgical therapy, but the complexity of their management has increased. As a result, the overall case load is decreasing, but more specialized training and expertise and more complex support from neighboring subspecialties such as neonatal pediatrics, neonatal anaesthesiology, and pediatric radiology is needed. Clearly, the logical result is the development of subspecialty centers, where the burden of further subspecialisation is divided between multiple areas.

In the U.S., pediatric urology is completely in urological hands. There are about 250 full-time pediatric urologists in active practice, almost exclusively at centers with an approved residency program or in free-standing children's hospitals. Most medical schools have a section of pediatric urology, and around 12 new trainees start subspecialty training in pediatric urology annually. A Pediatric Urology Advisory Council founded jointly by all 4 U.S.-subspecialty organisations dealing with pediatric urology has considered this manpower to be sufficient to meet U.S. demand and to provide adequate subspecialty training.^[27] A Certificate of Added Qualification (CAQ) in Pediatric Urology is in the process of being approved by the American Board of Subspecialties.

Elsewhere, especially in smaller countries in Europe, the issue of who takes care of children with problems of the urinary tract has developed in a more ad hoc manner, mainly depending on the personalities involved and their level of influence in the various institutions.^[28] The turf war between pediatric surgeons and urologists in this context was mainly led for reasons of political interests, and the outcome was variable. It is important to remember that pediatric surgery has seen a similar trend of less index cases and increasing complexity of therapy, with subspecialties developing for pediatric cardiac surgery, otolaryngology, and neurosurgery and a draining work load for the general pediatric surgeons.

Today, pediatric surgeons often consider doing pediatric urology as the logical reaction to shrinking turf.^[13]

The only solution to sustain sufficient critical mass for clinical effectiveness is joining forces, rather than spending energy in turf battles, with the objective of offering the best possible care to children by optimizing training. Jointly supported by the urologists and pediatric surgeons organized in the European Society for Pediatric Urology (ESPU), a Joint Committee of Pediatric Urology was formed. The Joint Committee of Pediatric Urology defines, monitors, and controls accreditation and certification for the subspecialty of pediatric urology serving as an equivalent to the European Boards of Full Specialists.^[29] Subspecialty training is done at a 2-year Fellowship level and is equally open to certified urologists or pediatric surgeons. Subspecialty centers from both fields can become accredited training centers. The training program has to include all aspects of pediatric urology, if necessary by involving several institutions, and is completed with a written qualification examination at the annual ESPU meeting.

IS SUBSPECIALISATION DEVELOPMENT A CONCERN?

With the implementation of the ESPU and the US-CAQ approach, pediatric urology is not lost. Urology is fully involved, supports, and acknowledges the subspecialty and promotes the joining of forces with neighboring specialties. The objective is not monopolizing the management of diseases of the urogenital tract in all age groups, but instead offering the best possible management for a patient group characterized by special needs. Only in this manner can a sufficient critical mass of clinical workload for mastering complex index cases still be achieved. Because they need specialized support groups, the accredited pediatric urologist of the future will be at the center of high patient loads, such as academic surgical centers or high volume pediatric hospitals.

Does this infringe on the role of the general urologist? The American Board of Medical Specialties clearly states in its 2004 Reference Handbook: "There is no requirement or necessity for a diplomat in a recognized specialty to hold a special certification of that field in order to be considered qualified to include aspects of that subspecialty within a specialty practice. Under no circumstances should a diplomat be considered unqualified to practice within an area of subspecialty solely because of a lack of subspecialty certification".^[27] In the U.S., the area of pediatrics awards 16 different subspecialty certificates. Two-thirds of the pediatricians in the U.S. are not subspecialty trained, yet 20% spend some time in a subspecialty field.^[30] A 2004 Gallop Poll conducted by the American Urological Association revealed that the majority of urologists did not believe certified specialisation in pediatric urology would adversely affect their practice.^[27] Certainly, an increasing climate of litigation and formal certification is also impacting the issue. As a result, most urologists do not mind

passing complex cases onto specialists, and they are in fact usually relieved to be able to do so when they feel insecure with the management.^[8,13] This is not limited for decisions in pediatric urology. With growing complexity, surgeons tend to develop special skills and expertise in some procedures, and feel insecure in others they rarely perform. The urologist doing hundreds of robot-assisted radical prostatectomies per year may elect to pass a patient preferring permanent-seed implantation for brachytherapy of the same disease status on to a colleague.

Moving the management of complex clinical conditions to the expert with better training and more experience serves only one purpose - providing the best possible care for the patient. It is clearly not a development to be concerned with, indeed, it is in standing with the traditions of surgery that have led to today's achievements and diversity.

IS PEDIATRIC UROLOGY AN ACCEPTABLE SURROGATE?

Compared with other subspecialties with close connections to neighboring fields, pediatric urology has a shrinking, specifically-defined population base that permits precise definition of demand. However, there is greater complexity in the areas of male infertility, female urology, uro-oncology, etc. The fields have yet to be defined, but demand, and with it workload for the specialist, is rapidly growing. Patient demand is becoming a driving force, and as shown by the present "robot hype" in radical prostatectomy, marketing strategies play a major role. The key to any subspecialisation is the drive to better understand and manage specific problems, and where these are in close connection to other fields their, specific expertise has to be tapped. Mastering the problems in these borderline fields does not depend on whether the subspecialist is officially certified for one or the other field, but whether he has the training and expertise from both fields for optimum solutions. It is a matter of personal dedication and interest and not of clear rules defining a monopoly. In this context, all subspecialties in urology can very well be compared with pediatric urology.

IS LOSING TERRITORY TO OTHER SPECIALISTS A MATTER OF CONCERN FOR UROLOGY?

Of course it is. If we are actually losing territory, this has to be a matter of concern. The reasons, however, are not the result of insufficient definition of territory, but exclusively a lack of interest and involvement for the specific problems raised in these borderline fields. The appropriate line of defence, therefore, has to be in promoting interest in the urologic public for these special problems, integrating them in training, and supporting the frontiers in development. The key to success is close cooperation with specialists with similar interests from neighboring fields to better

eliminate one-sided blanks in expertise. This primarily requires personal involvement and not territorial outlines. If urologists take the lead in meeting these challenges, no territory is lost and patients are mainly attracted by the best possible treatment.

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