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General Surgery of Childhood in the UK: A General Surgeon's Perspective

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ABSTRACT

The future of general surgery of children as practiced in District General (DGHs) and Rural General Hospitals (RGHs) by adult general surgeons and urologists is uncertain. It is likely that this is because of a combination of the overall trend towards specialization, concerns about clinical risk; uncertainty within the profession about the behavior of the regulator and criminal justice system when considering cases of alleged incompetence; reduced and more targeted training time, curriculum changes, and perhaps a concern by other specialties regarding the ability of DGH and RGH surgeons to provide a safe service.

The impact of this on regional pediatric surgical units (RPSUs) is however considerable. While transfer of some conditions such as infantile hypertrophic pyloric stenosis and intussusception is justifiable, transfer of others such as undescended testis and suspected torsion is not.

Close communication between regional specialists and local generalists, preferably in the setting of a formal network, together with a change in the priorities of local medical and nonmedical managers and cooperation between competing Trusts is required. Strategies for dealing with the problem are available but require a change in management and National Health Service (NHS) ethos to enact effectively.

Adherence to evidence-based best practice with the help of the "Getting It Right First Time (GIRFT)" initiative is vital and, together with targeted publicity and encouragement, the trend may not be irreversible.

Level of evidence: Level V.

Contents

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The continued provision of surgery for children in DGHs within the UK's NHS has been recognized as being threatened for many years. It is a shame that, nearly a decade after the publication of a survey documenting the problem [2] and guidance to commissioners and service planners [3], the future of this particular part of general surgery is no more secure.

Further standards for elective and emergency management of children in DGHs have subsequently been published [4,5] but the practice continues to contract with more cases (especially of young children and emergencies) being referred to RPSUs as emergencies and for elective care (Fig. 1).

Over the last 20 years many conditions which were once routinely dealt with in DGHs have become routinely referred to RPSUs, thereby increasing the pressure on those units, deskilling and causing extra costs for DGHs and causing inconvenience to the children and their relatives. The suggestion that specialist pediatric surgeons wish to take over all surgery in children has been comprehensively rejected by the British Association of Pediatric Surgeons (BAPS) and is implicit in their long-standing motto *"To set a standard, not seek a monopoly"* first enunciated by the first BAPS president Sir Denis Browne.

1. Why has this happened?

A combination of factors is probably responsible.

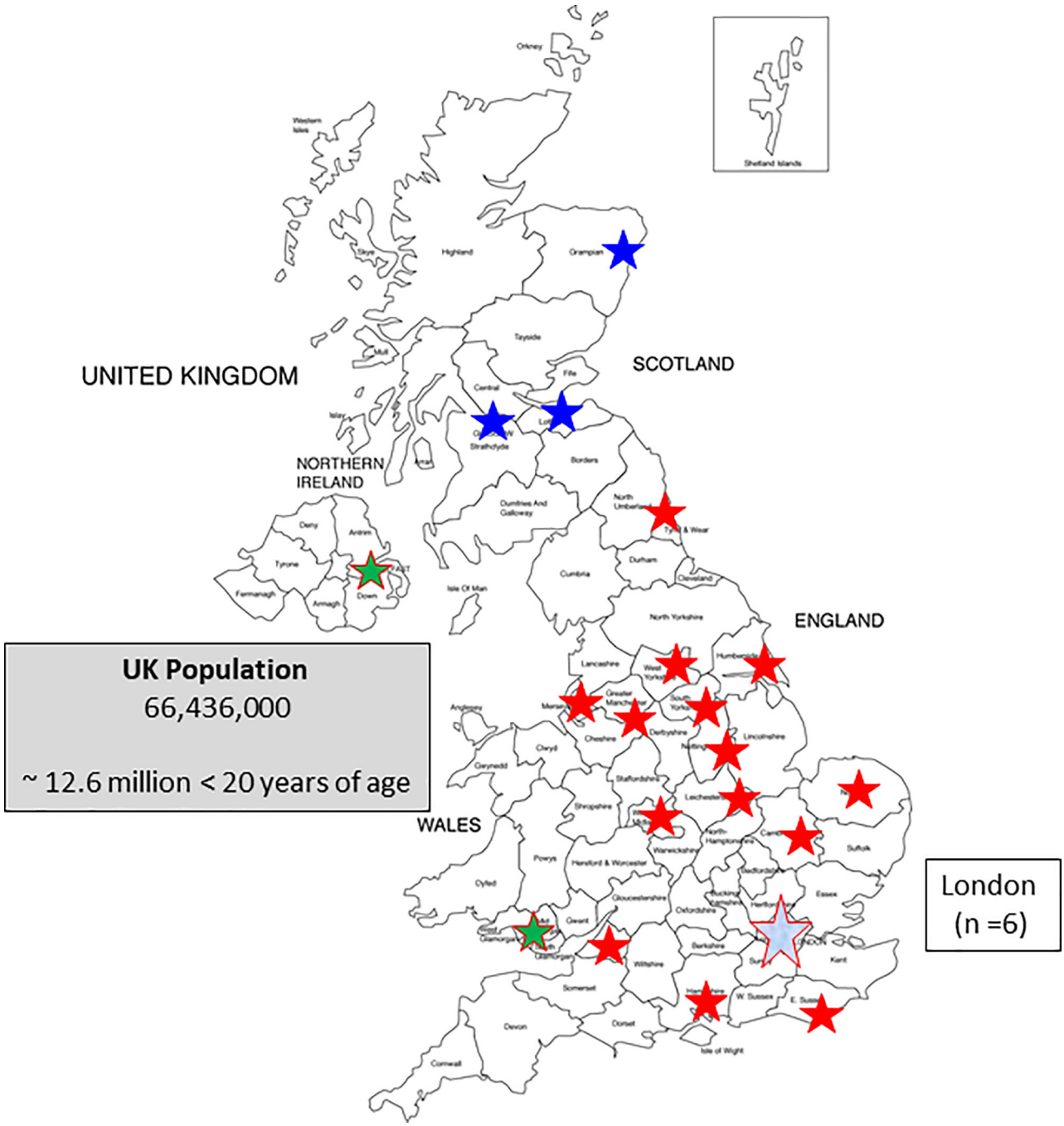

Fig. 1. Map of United Kingdom showing regional pediatric surgical centers.

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1.1. Specialization

There has been a push for increasing specialization within general surgery itself, so breast surgeons only do breast surgery, vascular surgeons only do vascular surgery etc. [6]. This may have gone so far as to be irreversible. The stimulus for increasing specialization was a belief that this would invariably produce better clinical results and in general it probably has, but there has to be a time at which the loss of surgeons' ability to manage a range of what would be regarded as "general" cases becomes harmful to overall patient care and the community. Defining this point is, however, difficult.

1.2. League tables and clinical risk

The desire by medical and nonmedical managers to control the practice of their consultant workforce to minimize clinical risk and perform well in league tables leads to a risk-averse culture in which practice that is not well understood by (mostly medical) managers is discouraged. This results in support being withdrawn for those parts of general surgery which in their eyes carry risk that they cannot control or understand.

Reducing risk to patients is, of course, entirely desirable but it is important not to fall into the trap of so deskilling consultants and thereby a hospital which serves the entire community that overall risk may, in fact, be increased — particularly when dealing with emergencies.

1.3. Shortened, more targeted training time

The hours available for training under the current working hours legislation (Working Time Directive 2003/88/EC) are limited by law and of course apply to any country within the European Community. The overall averaged working week must not exceed 48 h with 11 h of continuous rest in any 24-h period. There still is an "opt-out" clause for individuals but no-one seems to sign that nowadays. This reduction in the time for specialty training and the reduction in the opportunity for trainees to experience different specialties before embarking on an essentially unchangeable career path from an early stage after qualification combine to reduce the exposure of junior surgeons to a general pediatric surgical practice. This monopolization is soon to be worsened by the introduction of run-through training for specialist pediatric surgical training in the UK where the aim is to "choose" your pathway directly following early years. Foundation training — no hanging around.

The reduction in the numbers of established consultants doing GPS work will result in a progressively downward spiral in exposure of early trainees to this work. Core trainees' time within their hours allocation is occupied to a large extent in covering the on-call rota, often without a more junior resident House Officer overnight, so that the opportunity to become actively involved in the limited opportunities to experience and learn about GPS by clerking, decision-making and operating is very limited [7].

The perception by registrar trainees that specialist pediatric surgical experience is not useful in the context of the limited training time available to them results in a lack of enthusiasm to take up the few posts that remain available to general surgical and urology trainees. This has the effect of pushing Programme Directors to abandon those posts when under pressure to cut trainee numbers.

Concern regarding training opportunities has been expressed by trainees across the UK and in different specialties [8,9]. Trainees remain unconvinced about the advantages of undertaking specialist pediatric surgical training and there is a feeling that a six month period in an RPSU is not sufficient to enable independent practice in a DGH or RDH.

1.4. Concern by allied specialties that adult surgeons are no longer up to the task

DGH pediatricians and anesthetists have perhaps become wary about the ability of adult surgeons to cope with the clinical management of and operating on children. Anesthetists themselves may feel uneasy dealing with small children and in the past suggestions have been made that there is an age limit below which they "should not" provide anesthetics for children [7]. In fact, there is no such stricture and it is up to individual hospitals and doctors to come to local arrangements, preferably in the context of a clinical network. There is a limit in that there is general agreement that managing and operating on neonates is not to be routinely encouraged in the setting of the DGH.

1.5. Lack of support from official bodies in cases where things go wrong

It is likely that the treatment of doctors who, while trying their best to manage patients appropriately, have found themselves in difficulties with our regulator and the legal system will have a harmful effect in circumstances in which low-volume and potentially difficult, emergency or high-risk surgery is needed [10].

1.6. Perception by adult surgeons that it is only about 6-year-olds who need a circumcision

It is likely that the average DGH adult surgeon's perception of what GPS is undervalues reality, with a belief that those <2 years of age are very rarely operated on and that the only operations performed will be (boring and nonchallenging) circumcision and umbilical hernia repair. In fact, in my general surgical DGH practice the modal age range was 0–24 months so it was and is possible to maintain an adequate number of cases to provide ongoing experience even in the younger child [11]. This age group does not involve operations for phimosis or umbilical hernia and the most frequent operations are for undescended testis and inguinal hernia.

1.7. The general surgery curriculum and syllabus

The current general surgery curriculum [12] mentions GPS as a non-essential component of higher surgical training. Trainees may well form the opinion that it is not considered as important to train in this as for their chosen subspecialty. The award of a Certificate of Completion of Training (CCT) does mandate the newly qualified surgeon to be competent in the management of an unselected general surgery on-call load. However, it is interesting that intussusception is actually included in the general surgical requirements when it has appropriately become a condition that general surgeons in DGH will never see.

The 2016 Urology curriculum includes operations for inguinal hernia and acute scrotum in children [13].

2. What conditions are affected?

2.1. Infantile hypertrophic pyloric stenosis

The probable reduction in the incidence of IHPS [14] means that the number of cases now seen in an average DGH is too small to ensure continuing local expertise. The reduction in numbers should also mean that the transfer of all cases to an RPSU should not have a harmful effect on resources at the RPSU and it seems unlikely that management of pyloric stenosis will ever return to DGH practice. Changes in "modern" management from a fairly straightforward right upper quadrant incision Ramstedt's operation to a circumumbilical or even laparoscopic approach also conspire against its persistence in GPS practice.

2.2. Undescended testis

About a quarter of GPS outpatient consultations are for undescended testis (UDT) and although many turn out to be retractile, operations for UDT constitute between a quarter and a third of all elective GPS operations in a DGH and represent the largest single type of operation performed in a general adult surgeon's GPS practice.

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When should UDT be operated on? RCS guidelines [15] *suggest* operation at "about 12 months of age" but many RPSUs are struggling with that and there is a body of specialist pediatric surgeons who feel that operating before one year of age is not at all appropriate. This is one area in which DGHs are ideally placed to provide the service but they would have to be able to electively operate on children less than 2 years of age and at present not all do so.

The number of children electively operated on less than the age of 2 in an average DGH will be small and it would be preferable to concentrate those cases in the hands of a small number of anesthetists and surgeons.

2.3. Management of the impalpable testis

The number of impalpable testes is small — amounting to about 10 cases per year in an average DGH. While this is probably a large enough number to maintain expertise, how it's done has changed. There is now such a wide variety of approaches to the management of these patients that consensus among specialist surgeons is absent. What has changed is the accepted need for diagnostic laparoscopy first and foremost and in a 1 year old child this may be the limiting factor for the DGH surgeon. Not only does it require surgical skill but a completely different set of instruments and equipment. Perhaps centralization of care is appropriate here unless the DGH surgeon really has specific expertise.

2.4. Small children with hernia

Urgent treatment of infants less than 1 year of age with an inguinal hernia will result in a reduction in the need for emergency intervention for presentation with irreducible hernia. In many DGHs the management plan for reducible hernia is to try to delay intervention until after one, two or three years of age (depending on the local age limit for elective operations on children). This will inevitably result in a small number of young children presenting with irreducible hernia who require transfer to the RPSU, which could probably have been avoided by earlier semielective operation in the DGH. There is no reason why an adult surgeon with appropriate training and ongoing experience could not do the semielective operation at any age from neonate onwards but performing an operation for irreducible hernia in a DGH is more likely to result in postoperative complications and problems in management, for which the DGH is probably not equipped.

2.5. Intussusception

Children with intussusception are appropriately referred to the RPSU for management since management has become very much radiological and the expertise necessary for those interventions is only really available in regional centers.

2.6. Suspected torsion of the testis

"I'd like to refer a child with a suspected torsion to your specialist paediatric surgical unit because the local on-call surgeon is not happy to explore the scrotum in our hospital".

How did we get to the state in which this telephone conversation could ever take place? How has specialization been allowed to progress to the point at which a time-sensitive emergency, in which the future viability of a young boy's testis is at stake, results in what many would regard as a completely inappropriate transfer to a regional unit involving significant time to effect the transfer and provide appropriate management? Surely this cannot be in the best interests of patients [16] but it seems to be a not uncommon scenario on the basis of anecdotal evidence of an increase in transfer rates in the UK and some published evidence from the United States [17].

2.7. An elephant in the room

There is little private practice in GPS.

3. What can we do about it? Can the trend for inappropriate transfer and centralization be reversed?

Being the only surgeon in a DGH who operates on small children electively can induce a state of isolation — it is vital that communication and relationships with the RPSU are maintained. For this, networks are invaluable but there is a reluctance for surgical leaders in DGH to allocate time for their surgeons to attend the RPSU on a regular basis since this interferes with the finances and local provision of what is perceived to be the core adult services.

My request to my Clinical Director to have a regular session in the RPSU (fully agreed by the specialist pediatric surgeons) was met by the question "whose patients will you be treating"? My reply that it may be patients from our district or other districts was met with the completely inappropriate response that that was not what the Trust wanted. Tellingly, the good service which I had set up and worked hard to develop and protect was dismantled immediately I left, resulting in significant onward referral to the RPSU.

Surgical leaders must be incentivized to develop the service and support the staff who provide it, often single-handedly. There is also a (possibly) unintended consequence on the provision of anesthetic support for operations on young children, as the extremely competent anesthetist with whom I worked closely for more than 20 years providing a good service for children is becoming rapidly deskilled. This has to be bad for the hospital and its patients overall. The management structure in which surgery, anesthetics and pediatrics are managed by different Clinical Directors is not well suited to the sort of joined-up approach that is needed to provide and manage children's surgery.

An appealing "half-way house" would be to set up subregional centers where there would be a couple of surgeons and anesthetists who could provide a service to, perhaps, 3 or 4 DGH in order to take the pressure off the RPSU. If desired, attendance by a regional specialist pediatric surgeon would be easier than going to all the individual DGHs. Ideas like this do not sit well with the current vogue for competition in the NHS.

The alternative strategies are of local adult surgeons running the whole service or regional specialists doing lists and clinics in each DHG. Either is probably acceptable — in fact those regional specialist pediatric surgeons (or general surgeons with an interest) coming up to retirement may look at the latter as a good option for their final years in practice.

To prevent the isolation experienced by surgeons and anesthetists, regular attendance at RPSU for those DGH adult surgeons who provide the GPS service would be appropriate. This requires medical and nonmedical managers in the DGH to recognize the need for their surgeons to regularly attend the RPSU within a timetabled activity. Unfortunately, experience is that many managers are reluctant to accept this. Interestingly, nonmedical managers seem in general to understand the need better.

Support for Continuing Professional Development (CPD) and specific training is essential. Again, networks would be helpful in this and the recent allocation of funding for networks offers some hope.

Perhaps a specific qualification in GPS would help to give practitioners more confidence in their practice and persuade their colleagues that it is a real subspecialty which is worth preserving and to provide a framework for education and support.

The problem of lack of private practice cannot be solved but GPS will always be a subspecialty and not the main work of a DGH consultant.

3.1. Adherence to best practice

There is a need for all surgeons to follow guidelines for management of common presentations such as the "nonretractile foreskin" and doing

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so may relieve some of the responsibility and isolation. For example, adherence to the principle that balanitis xerotica obliterans and recurrent balanitis are the "only" cast-iron indications for circumcision (allowing for the occasional child with phimosis and dilated upper tracts in the setting of urinary tract infection and the very symptomatic teenager with a tight preputial ring causing significant symptoms) will reduce the large number of unnecessary circumcisions done and free up time on the operating lists for the operations that do need to be done.

The GIRFT initiative may become a powerful tool in this context but to date there have been no published data on national outcome from this organization [1].

3.2. Getting the message across

There is the need for a "Champion" to extol the virtues of GPS as a rewarding subspecialty, to travel the country encouraging surgeons, managers, GPs and anyone else who will listen. GPS is a valuable and precious vocation. To let it wither and die is not in the interests of anyone, least of all our children.

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