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General Editor: John Apley

Surgical Conditions in Paediatrics

H. Homewood Nixon

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Surgical Conditions in Paediatrics

POSTGRADUATE PAEDIATRICS SERIES

under the General Editorship of

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Editor's Foreword

'Experience is not what happens to a man. It is what a man does with what happens to him' (Aldous Huxley). Mr. Nixon's book is brimful of experience, of what he has done with what happens to him. It is also an account of what has happened to many children who have passed through his hands – and through his head; and the thoughts of one of the foremost paediatric surgeons of our time bear the welcome imprint of his personality.

A characteristic versatility, truly remarkable in these days of super-specialization, enriches what he writes; it carries the added advantage of conferring a breadth of vision, a healthy perspective, that lights up controversial topics. I find it instructive to read how the author culls from many sources, balances and trims the information gained in comparing those of others with his own ideas and methods, then gives an opinion with advice that is immediately appealing and practical. Characteristic, too, are the informality and flexibility of the chapters and the words with which they are built. Even operation techniques, so lucidly sketched in, are made perfectly understandable to non-surgeons; and, in the best surgical tradition, descriptions are illuminated by vivid, down-to-earth phrases.

The marriage between surgery and paediatrics (too serious and permanent to be called an *affaire*) is one with a healthy give and take, and it provokes arguments that he clearly enjoys. Whether they are paediatricians or surgeons, even the most experienced (and to a greater extent, of course, those with less experience or still in training) can profit from this rich store of diagnostic acumen, technical and even organizational skills. After a long career in paediatrics I am delighted with all I have learned from the book, even about such commonplace matters as constipation, hernias and spina bifida.

Is an operation necessary at all? – and, if so, which one? What is the best age for a particular operation? – and why? What are the pitfalls and problems of diagnosis? What of management and supervision before, during and after surgical treatment? From Mr Nixon's rich experience there is much both to learn and enjoy, equally for medical and surgical paediatricians. They will find his book directly enhances their effectiveness. Indirectly, too, it should help by increasing the understanding they can bring to patients and their parents.

John Apley
1978

Preface

The care of children by paediatricians and surgeons is a partnership in which each can learn from the other's views and experience. This book is the outcome of a suggestion to write from a surgeon's point of view, mainly for medical paediatricians but also for the surgeons who contribute to a subject that is so rapidly evolving. My intention has been to produce a readable work giving one paediatric surgeon's clinical approach, rather than to be encyclopaedic. In discussing clinical entities clearly some facets will be more fully known to the medical reader than to the surgical author, so a balance has been attempted which I hope avoids 'teaching grandmother to suck eggs'. It has been assumed that comments on operative methods are not necessarily out of place since the paediatrician will want to know the kind of procedure his patient may undergo. I have given my personal views but where there are commonly used alternatives I have attempted to make this clear.

No one man can develop the same depth of experience in all facets of his specialty and I am pleased to have the opportunity to express my debt to the many teachers and colleagues, senior and junior, particularly at Great Ormond Street, from whom I have learned and continue to learn. It is not possible to overstress the benefits of working with such expertise readily at hand.

The majority of paediatric surgeons in the United Kingdom have eschewed orthopaedics; many have ceased to operate on cleft lips and palates. My own experience has narrowed and deepened as the years have passed, not entirely because of the natural development of special interests we all develop, but also because of the increased interest of system specialists in the children of their specialty. Some of the more cynical have suggested that with the inclusion of a paediatrically orientated gastroenterological surgeon the specialty could cease. It is

worth remembering that this would in fact bring us back to the state of affairs in the 1930s when the need for and benefits from paediatric surgery began to become evident, and not only in the newly born where those benefits are more dramatically obvious. Perhaps it was the progress of paediatric surgery which stimulated system specialists to encourage rotation through children's departments as a necessary part of the training of their registrars – an excellent development that one hopes may spread in general surgery. For one must remember that most of the 'ordinary' surgery of children will rightly be carried out by general surgeons, hopefully with some special experience in this area. To quote the late Sir Denis Browne, 'The role of paediatric surgery is to set a standard, not to establish a monopoly.' At Great Ormond Street system specialists and paediatric surgeons work side by side and I believe this is to their mutual benefit and that of their patients.

I would like to thank the Publishers for their unfailing wise council and patience, and Dr John Apley and Mr Adrian Alloway for reading the proofs and giving so much helpful advice so willingly.

H. Homewood Nixon

Contents

CHAPTER 1

Some Principles

Paediatric surgery differs from adult surgery in that the former usually involves performing operations to guide a child back to normal growth and the latter reconstruction in an established mature individual. For example, it is quite practical to operate sufficiently radically to produce a perfectly symmetrical nose at the first operation on a child with a unilateral cleft of the lip and palate. Nevertheless, in severe cases this would produce scars which would prevent growth and in the long run the child would finish with a contracted nostril, to say the least. It is better to perform a simpler primary operation and wait whilst the reconstituted facial musculature moulds the underlying facial skeleton during growth and to consider a secondary improving operation at, say, four years of age. The timing may be as important as the nature of an operation.

Apart from such technical aspects are the equally important physiological and psychological traits of the infant and child which vary according to age and affect the response to the disease and its management. The paediatrician does not need reminding of such matters as the need to consider the child in relation to the family and to assess a history with regard to the mother's relationship with the child.

AGE AND OPERATION

An old tradition was that the newborn baby should have the minimal surgery required to relieve an emergency and it was a general principle that if one could wait until the child was older one could work more satisfactorily. This notion is completely outmoded. Rather should one say with Willis Potts (1959), 'Is there any reason why I should not

operate now?', for the newborn baby is remarkably resilient if treated by those who understand that his physiology differs from that of the adult. Delay is far more likely to result in complications than in any benefit. For example, delay in treating anal anomalies results in a megarectum which subjects the child to miserable and prolonged medical treatment and perhaps to a period of lack of anal control. In general any procedure that can be performed on the adult can be performed on the newborn, with no more or less risk from the point of view of the magnitude of the operation.

There may, of course, be particular individual factors which justify delay in certain instances. For example, one would wish to delay repair of the hard palate when this is cleft so that the scarring interferes little with its development, though one would wish to repair the soft palate before the child learns to speak.

Similarly one would like to avoid operation, when possible, for meconium ileus because the actual narrowness of the bronchi in the newborn increases the risk of post-anaesthetic inspissation of mucus and the risk of acquiring infection from hospital contacts in these babies with their underlying cystic fibrosis. (The gastrografin enema may be used to treat uncomplicated cases (Chapter 3).)

There are special problems at each age. In neonatal surgery one may have to combine the special management required for prematurity or for the light-for-dates baby or for respiratory distress and so on with surgical needs. If a newborn has to be transferred to a regional centre for major surgery it is extremely important to let the mother see and handle her baby first, and to encourage visiting as soon as practicable.

The toddler is psychologically at a particularly vulnerable age. He is old enough to suffer from separation but too young for explanation. This is, therefore, a period at which one should avoid elective operation whenever practicable. Nevertheless, when it is required much can be done by suitable care to reduce or even completely avoid psychological trauma. Much of the anxiety the child suffers is reflected from the mother's obvious anxiety which she expresses often because she has been prepared to expect trouble by well-meaning but misleading advice on child psychology. A child soon senses his mother's insecurity and becomes insecure himself. Some of the toddler patients have so enjoyed hospitalization that they have wished to return in spite of surgery! Of course this is only the exception.

The school child has particular problems because of the need for conformity at this age period if he is not to be teased by his peers. Children soon learn which of their number are worth teasing, by the response they get. This response will depend very much on the child's upbringing, and an unduly sheltered and protected child may become an easy target.

A particularly distressing symptom at school age is that of faecal soiling. In this respect the healthy child with an unsatisfactory result from repair of an anorectal anomaly is I think perhaps in a worse situation than the multiple handicapped child, because the handicapped child is recognized as having other problems which arouse sympathy and he may be having special school care for his problems. The child who is otherwise healthy and robust yet soils himself is, on the other hand, despised as 'dirty'.

Further anxieties develop at puberty when sexual interests become important. It is embarrassing enough for a normal but late developer at puberty to have to cope with his more mature, robust classmates. If he also has suffered from undescended testis his waiting period until pubescence ensues is all the more anxious.

ANAESTHESIA

At all ages it is important to avoid unnecessarily causing fear, quite apart from doing anything painful. This means, I believe, a much more liberal use of general anaesthesia (often with the child treated as a day case) for investigations which in adults might be carried out under local or with no anaesthesia. For example, it is quite possible to carry out a proctoscopy carefully with a suitably sized instrument without causing any pain. I believe, however, that it is extremely unlikely that this will be done in the Outpatient Department without producing a great deal of anxiety and fear. Apart from its direct effect on the child fear is likely to make later management, should this be required, more difficult. Much can be achieved by spending time over prior explanation of investigations, but the modern child does in general lead a more protected existence and, therefore, may not cope so well with the unexpected. I recall that most humane of paediatricians, the late Sir James Spence, making the intentionally provoking comment to the students (including myself) that 'what the modern child needs is more healthy neglect'. Instead of being able to play and experiment away from adult eyes in the fields (or perhaps in the streets with 'the gang') his every move is liable to be observed. If the child is given a chance to realize that his first medical experiences have not been as unpleasant as he might have expected, and that what he has been told has been true, then he will be co-operative and bear the most major procedures with a remarkable resilience and confidence in doctors and nurses.

PREPARATION FOR OPERATION

The use of sedatives or tranquillizers to avoid anxiety is invaluable in itself as well as to ease the induction of anaesthesia. Quiet surroundings are essential if they are to be effective and ideally the child should go to

the theatre asleep. The mother's presence may be invaluable even during induction, though her temperament may be such that I would not consider this to be by any means a routine recommendation.

Should the procedure be one in which postoperative discomfort or pain is to be expected then analgesics should be freely prescribed to diminish this. If they are given too late they are less effective and the child will be unnecessarily apprehensive of his future course.

Should intensive postoperative care be anticipated then it is helpful for the child to see and have explained any potentially alarming equipment before an operation. Similarly, if breathing exercises, for example, will be needed he should meet the physiotherapist and be taught before operation.

DAY CARE SURGERY

An obvious way to avoid the possible trauma of hospitalization is to arrange day care surgery (and medicine). The positive benefits to the child are quite as important as the immediate economic appeal. Many surgeons have accepted the safety of this policy for generations, but, careful planning of the system is needed. A hasty admission, examination, operation and discharge to an uncomfortable journey home without adequate explanation to the mother or child can be far more traumatic than a peaceful night in hospital.

Amongst the conditions most frequently managed as day cases are inguinal hernias, hydroceles, circumcisions, cystoscopies, sigmoidoscopies, examination under anaesthesia for rectal polypectomies and other minor anal conditions. Many less common conditions such as removal of external angular dermoids come to mind. My personal opinion is that a thoroughly performed orchidopexy causes sufficient postoperative discomfort to warrant a day or two in hospital but opinions differ and will depend on the child's home circumstances. Much minor trauma is also handled without admission overnight, as are minor urgencies such as incision of abscesses, but the relationship of these (often orthopaedic) conditions to the elective day care system will depend on the nature of the accident service at the particular hospital.

The needs of a district hospital carrying out a few day case procedures on a regular operating list differ from those of a major children's centre with a day case unit having a separate operating list. In the district hospital cases can be scheduled for the end of a morning list or the beginning of an afternoon list to allow time for proper preoperative preparation and postoperative recovery. In the unit with a full list of day cases the list cannot start too early or finish too late in the day, a factor which may need special consideration in relation to the usual division of work into morning and afternoon sessions. The most

important point in planning a day case unit is to have *separate* pre- and postoperative areas, because traffic to and from the theatre will be frequent and the proximity of recovering patients will disturb those awaiting their turn. It is also essential to have adequate theatre facilities with sterile precautions as good as for major inpatient work.

Although one must be sure that the child is being returned to a satisfactory home environment I have not found home conditions to be at all a frequent genuine bar to day care. Similarly, although the general practitioner must be notified of the intention to treat his patient as a day case I have not found elaborate prior arrangements for visiting and so on to be necessary, providing suitable cases are chosen for such care. My enquiries have seemed to confirm that the general practitioners are happy with such arrangements.

REFERENCE

Potts, Willis J. (1959). *The Surgeon and the Child.* Philadelphia and London; W. B. Saunders Co.