Chapter 1: Introduction

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Why have a volume devoted to the otorhinolaryngological problems of children? The reason is that, over the past 20 years, otorhinolaryngologists all over the world have come to appreciate that children have special problems and, more important, that children do not react to disease in the same way as adults.

History

The first attempts to stimulate a special interest in the otorhinolaryngological problems of children occurred in Poland in the 1930s. The pioneer in the field was Professor Jan Danielowicz of Warsaw. Many children were referred to him with strictures of the oesophagus and he rapidly came to appreciate that they did not react, and that they should not be managed, in the same way as adults. After the Second World War Poland became one of the countries of the Soviet bloc and the spread of interest in this discipline to the West was delayed. When the immediate post-war crisis was over and doctors began to travel again between the East and West contacts were made. Professor Gatti Mancini of Brescia, Italy, worked hard to build up the speciality in Europe. North America followed suit and made rapid progress in the field aided by the establishment of professorial chairs in the speciality. In the UK interest has been slow to develop but has now reached the point where it is recognized that there are conditions which are better managed by those with a special interest in the problems of children. In the larger cities centres are developing where children with the rarer problems of paediatric otolaryngology can be both investigated and managed.

Development versus maturity

The majority of hospital patients are adults. This is because, on the whole, childhood is a period of health rather than a period susceptible to disease. In early life the commonest cause of death is malignant disease, including the embryomata and the malignant blood disorders. Between the ages of 3 and 15 years the commonest cause of death is an accident. Thus the average doctor has very little appreciation of the processes of maturation which are so vital to an understanding of paediatrics. It is of fundamental importance to realize that the child is not just 'a small adult' anatomically, physiologically or immunologically. The rates of growth in the different 'systems' vary with age.

Obviously during the first year of life there is immense activity in both the peripheral and central nervous systems. Normal progress in the achievement of muscular control and the acquisition of knowledge about the environment by the use of sight and sound are essential for any child to be able to lead a 'normal' existence. The acquisition of skill through the medium of the nervous system is the yardstick that the family use to predict the child's future. However, in order that the nervous system should be permitted to develop most advantageously the other less glamorous support systems of oxygen transport and waste disposal, the gastrointestinal system and the immunological system must be developed too. Happily, at the time of writing, breast-feeding is fashionable once again and this means that there is a period of passive immunity conferred from the mother's milk. It also means that there is less possibility of the early development of infantile atopic disease which can cause
so much distress. In susceptible children atopy is eleven times more common in those fed upon artificial milk than among the breast-fed.

The development of immune competence is just as important for the child as the more spectacular feats of the central nervous system. Once passive immunity is lost the child has to acquire immunity by exposure to disease. It is desirable that this immunity should be acquired gradually by exposure to the less serious infections first of all. However, it is of paramount importance that any possibility of infection should be avoided in the first weeks of life. It is for this reason that children who are born in hospital should be discharged as early as possible after delivery so that they are not exposed to those 'antibiotic-resistant' infections which are endemic in hospital. The complete lack of immune competence in the early days of life will lead almost inevitably to a fatal outcome.

The otolaryngologist expects to see more children in his practice than specialists in disciplines other than paediatrics because the natural development of the young child involves the transfer of respiratory infection from one child to another. Inevitably the symptoms and signs of infection, particularly in a first child cause parental anxiety and lead them to seek medical advice. When, as is sometimes the case, these infections are frequent and debilitating it is possible that the primary care doctor will refer the child, asking whether surgery is indicated. However, the ablation, or the attempted ablation, of lymphoid tissue in Waldeyer's ring should always be looked upon as the last resort. Even though the outcome is seldom fatal the effect on the child's immune system may be to produce recurring morbidity with a marked tendency to the development of atopy. A great deal of unnecessary and potentially harmful surgery can be avoided by explaining to the parents exactly what is happening to their child, emphasizing that this is a necessary part of the normal process of development and that surgery should be resorted to only when it is clear that the general development is being hindered as a result of repeated respiratory infections.

The approach

The surgeon whose advice is sought for a child has to ask himself initially, 'is the part of the normal process of development?' or, 'how far has development advanced in this particular child?' Having satisfied himself as to the answers to these questions he must ask himself, 'what will happen to the child's development if I decide upon active surgical treatment?' and then again, 'what will not happen to the patient's development if I operate?' In many cases the answer will be clear. For example there is little time to be lost in cases of acute respiratory obstruction and almost unlimited time available when faced with a unilateral aplasia of the ear with good hearing on the other side. However, he must take endless pains to 'carry' the parents with him all the way. Immense technical skill is of no avail if the parents do not understand what is proposed for their child and they can undoubtedly communicate their anxiety to the patient. It is equally important to have an excellent rapport with the patient and time is not wasted if every effort is made to communicate with the child without condescension. Children do not appreciate being 'talked down to' and if approached in a compassionate and kindly manner make excellent patients. They do not like being hurt any more than adults; but they are prepared to suffer some discomfort if they understand that this may be necessary to make them better.
Since approximately one-third of all outpatients attending departments of otolaryngology are children, it is highly desirable that only those who enjoy working with children and who can therefore develop a good rapport with them should consider training in the speciality. Experience in paediatrics is clearly desirable for the trainee surgeon; experience in paediatric nursing should be mandatory for those responsible for the inpatient care. Although there are physicians specializing in paediatric audiology in many centres in the country, it is necessary also for the paediatric otolaryngologist to have the expertise to make a first assessment of the hearing capability, because many of the first referrals are to the surgeon rather than to the audiological physician.

What type of work should be referred to the special centre? Special centres have personnel expert in dealing with both acute and chronic respiratory obstruction. Nursing in the early stages of treatment calls for experts who are trained to detect those signs which indicate that the airway is compromised and that active measures are called for, such as the cleaning of a tracheostomy tube or suction of the tracheobronchial tree. Endoscopy, requiring the use of special small laryngoscopes and bronchoscopes may be required and it is preferable that such investigations are carried out by those surgeons and anaesthetists trained in the procedure. Special centres accumulate experience in the management of the congenital abnormalities of the ear and the nose in addition to those of the laryngotraechobronchial tree, and it is desirable that patients with such disorders should be referred to the special centre. The surgeon working in such a centre will also be called upon by his paediatrician colleagues for advice about those children with syndromes containing otorhinolaryngological signs.

The surgeon working in a mixed adult/paediatric department must be able to manage the spectrum of the normal child's problems and must therefore be conversant with the essential differences in the response to disease, to inflammation and to repair, for such knowledge affects the advice which is tendered and the timing of possible surgery.

Advances in knowledge of how the immature human being reacts to disease has accumulated rapidly over the past 25 years. Advances in technology of both optics and electronics have extended the possibilities both for investigation and surgical management. The pharmacological chemists have produced a bewildering array of preparations which are said to satisfy the needs in management for many of the intractable conditions of former years.

However, there is much work still to be done in research in paediatric otolaryngology before such technology can be exploited to the full. Although a vast amount of work has been undertaken on the processes by which the child's immune system is gradually changed to the adult pattern, there is still a great deal to be discovered about which children are liable to have abnormal patterns of immunity and how such children can be expected to react when exposed to particular allergens.

Antibiotics are still used, particularly in primary care, with too little thought as to possible sequelae and the development of sensitivity. Knowledge of the effects of deafness in childhood has been gathered over 65 years and, happily in this field, thanks to the work of educationalists such as Sir Alexander Ewing, the UK was among the countries who pioneered research. However, with the access to antibiotics the acute infections of previous generations of young children have been aborted but less florid deafness, in the form of
secretory otitis media - the so-called 'glue ear' - has produced a serious problem in education. On the whole, the approach to the management of these conditions has been empirical. Drainage tubes for secretory otitis media can certainly offset the problems of deafness, only to leave the problem of tympanosclerosis in its wake. There is therefore an urgent need for systematic research into all phases of development in this field in order to temper the judgement and to improve prognosis and management. Money is never found easily for such projects but a small amount of money spent now could reduce morbidity in the next generation and cut the costs of looking after the sick child.