THE NATURAL HISTORY OF COMMON RESPIRATORY INFECTIONS IN CHILDREN AND SOME PRINCIPLES IN THEIR MANAGEMENT—II

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One of the ever-recurring conditions seen in practice is the child with a sore throat, and the cause may vary from a local manifestation of a general disease to a local lesion such as tonsillitis. Twenty to thirty years ago it was generally accepted that enlarged and diseased tonsils and adenoids increased the frequency of the common respiratory diseases and mass tonsillectomy was the rule, but in many places today the wisdom of this is doubted. The antibiotics are sometimes used in the hope of preventing the complications of tonsillitis[1] and this may be considered sound therapy[2]; once chronic tonsil disease is present surgery is the only treatment[3]. The criterion for tonsillectomy should depend on whether recurrent tonsil infection is present, and also on the general health of the patient. Apart from the usual hazards of this operation, it has been shown that there is an increased susceptibility to the common respiratory infections after tonsillectomy,[4] supporting the hypothesis that the tonsillar tissue is often useful as part of the defence against respiratory infections.

The Catarrhal Child

The relationship between the catarrhal child or the child with recurrent respiratory infections and his social and family environment is a frequent problem in practice, and this patient is one of the main reasons why the family doctor in the industrial area gives twice as many items of service per patient per year as does his colleague in the more healthy regions.[5] The importance of the home and social conditions can be surmised from the differential incidence of mortality and morbidity in various classes as shown by the statistics of the Registrar General. When the rates of those children of the professional classes are compared with those of the unskilled labourer, these rates may in some cases vary as much as sevenfold.[6] A survey in Twickenham in 1952 showed that the health of a child was profoundly influenced by home conditions,[7] and later in 1955 Riley of Glasgow showed that pneumonia is more common in overcrowded homes.[8] Apart from being overcrowded, a bad home may be due to a low family income, lack of hygiene, or the parents may be divorced. Bad housing is only a part of the social complex and must be considered together with other factors such as parental intelligence, the soundness of the hereditary stock, and

a good diet during infancy and childhood.[9] It is difficult in any social study to separate the different factors.

Often the mother finds co-operation with the doctor impossible, due to her many responsibilities or her inability to deal with her many commitments, and it is against a background such as this that the family doctor has to deal with the problem of the catarrhal child, and it is a formidable one.

Respiratory Infection

Two-thirds of all childhood illnesses are due to some form of respiratory infection,[10] and the average child is ill with some form of respiratory disease about six times in the course of a year. What is most disturbing is that in only some five per cent of the cases is the micro-organism known: hence the difficulty of rational management. In the remaining 95 per cent the agent is unidentified, though clinical observation and epidemiology suggest that the infection is due to a virus.[11]

The family doctor is frequently faced with a pyrexial child, and after a complete examination he may suspect a respiratory infection such as pneumonia, but a more accurate diagnosis than this is usually impossible. If pneumonia is present, then the diagnosis of the type of pneumonia is important, as today there are many different forms of treatment. The organism primarily responsible may be the pneumococcus, the staphylococcus, streptococcus, haemophilus influenzae or pertussis; or it may be a virus pneumonia due to psittacosis, influenza, measles, or one of the unspecified viruses. The pneumonia may be secondary to aspiration or a mechanical defect. The next problem is what form of treatment should be given, and how should the parents be directed to nurse the case?

An accurate diagnosis of virus infection can usually be made without laboratory investigations in mumps, the common cold and the virus exanthemata of chickenpox and measles. In other cases a firm diagnosis can only be arrived at with the aid of the laboratory, but in practice the family doctor has to rely on the clinical features of the case, as laboratory investigations are far too slow. The laboratory diagnosis of a virus infection is suspected when:—

(1) The bacterial pathogens are absent from throat swabs and specimens of sputa.
(2) The white blood count remains low.
(3) Primary and convalescent blood investigations show a rising titre.
(4) Cold agglutinins are negative.
(5) The virus is isolated and identified.

The discovery of the sulphonamides and antibiotics has meant that many bacterial diseases can now be treated with success in a relatively short time, but unfortunately this has not been achieved

in the treatment of virus diseases. There is reasonable evidence to show that when chloramphenicol is given in the pre-paroxysmal stage of pertussis good results can be obtained, although I find that it is simpler, safer, and more reliable to give the triple vaccine at six months of age. In the treatment of nonbacterial respiratory infections there is much conflicting evidence regarding the place of the antibiotics[12 13], and one clinician obtained better results using aspirin.[14] The place of the new antibiotics in the treatment of the common virus diseases in this country, such as influenza, measles, chickenpox, the adeno-virus and the coxsackie group, is far from established and there is little clinical or experimental evidence to show that these viruses are in any way affected by antibiotics.

In respiratory diseases in children it is possible to identify the micro-organism in only one case in twenty,[11] and clinical observation and epidemiology suggest that in the remaining nineteen cases the illness is due to a virus. As sulphonamides and antibiotics have no effect on these invaders the role of these drugs in the treatment of the vast majority of respiratory diseases is nil. The theory is often advanced that the routine use of sulphonamides and antibiotics, whilst having no effect on the primary or viral infection, does help to prevent secondary infection. Antibiotics may be harmful and alter the normal bacterial flora, consequently allowing fungi or non-sensitive bacteria, that are ordinarily saprophytic, to cause serious and possibly fatal infections.[15 16]

Last year the College of General Practitioners, after making an investigation into the treatment of about 5,000 cases of measles, showed that the prophylactic use of antibacterial drugs may do harm, and that there was nothing to commend the routine use of sulphonamides since this increases rather than reduces the total complications rate; although where the child was not healthy, or the illness was very severe, the antibiotics and sulphonamides could be of some benefit in selected cases.[17]

Several investigations have shown that the routine use of antibiotics for the prevention of secondary infections does not appear justified.[14] If there were any advantages, however small, to the patient, the extra expense would be justified, but, as the patient derives no benefit, and is subject to the risk of complications from this therapy, the routine use of these drugs in nonbacterial infections is inadvisable, and they should only be used if a secondary infection develops. This year Wayne stated that the indiscriminate use of antibiotics unnecessarily exposes patients to the unpleasant side effects of these drugs and also the occasional dangers to which all antibiotics may give rise, and further a disservice is done to the community when micro-organisms are rendered resistant as a result of unnecessary administration.[18] We in this country are not quite

so indiscriminate as are our colleagues in the United States, where only one to five per cent of antimicrobial drugs administered are given on a proper clinical indication.[19]

The natural history and the study of the symptomatology of virus diseases is well within the province of the general practitioner as he is the one who sees these cases first, and as hospital care is often unnecessary these patients are not seen by our consultant colleagues.

Until recently general practitioners interested in epidemiology or any other subject had to work largely on their own, as did Pickles of Yorkshire, but now that the College of General Practitioners has established its Epidemic Observation Unit, machinery exists whereby, whenever an unusual epidemic occurs, all members and associates of the College in the surrounding area can be notified, and asked to report full details of cases seen.

Last year Dr Kelly of Leicester reported an unusual syndrome (Epidemic Observation Unit code number K.L.56).[20] As a result of the notices sent out, cases were reported from as far away as Yorkshire, and I recorded over sixty in my practice. This Easter a small epidemic lasting about two months occurred in Worcester (E.O.U. code number L/W 57).[21] A quarter of the cases occurred in children. The principle symptoms were sudden intermittent frontal headache, nausea and vomiting, vertigo, sore throat and eyes. The illness lasted about five days, and in many ways resembled influenza, and I found the drug of choice to be codeine tablets. Paired sera, throat swabs, and faecal specimens from this epidemic have been examined at Colindale Virus Research Laboratory, and no virus has so far been isolated and all serological tests have been negative. Nevertheless, I believe a virus has been responsible for this outbreak but verification of this is a difficult task and takes time.

This type of field work by the general practitioner, improved virus investigations, and studies such as the 1,000 Families in Newcastle, will in time help us to understand more about the natural history of respiratory diseases and allow an improved classification.

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THE NATURAL HISTORY OF COMMON RESPIRATORY INFECTION IN CHILDREN AND SOME PRINCIPLES IN ITS MANAGEMENT. III

WHEEZY CHILDREN

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This paper is a study of wheeziness, which is a common symptom of acute respiratory disease, though it occurs in other, notably allergic, conditions. The material has come from my own practice and this paper is, therefore, a contribution from general practice, and while it may lack the detail and definition of other investigations, it does offer material not normally available from other sources.

The practice to which I belong is a group practice, having about 10,000 patients. The area covered is about 300 square miles, and as quarries working in the limestone countryside turn out as much smoke as the few mills operating in the market town which is our centre, any distinction between town and country is misleading.

Clinical notes are made at each visit or consultation, and it is from this material that I have selected for analysis records of those children born in and between the years 1937-1951.

Because of the age of the patients studied, it is obvious that the call for medical help usually came from the patient's mother. This has an important bearing on much of the investigation. It was noticeable, on reviewing our records, that certain children, particularly the first-born, had had colds every month, while others appeared to have escaped this ubiquitous ailment for as long as fourteen years.

This is a retrospective analysis, for I prefer to consider the fate of the children who have wheezed rather than investigate those

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