

matous fevers; measles, scarlet fever, and diphtheria figuring most highly among them.

When middle ear suppuration or catarrh occur from causes in the upper air passages in children, those causes are, in the vast majority of cases, due to the presence of adenoids. In the article just referred to, 14.3 per cent. of the 592 acquired deaf cases were due to middle ear suppuration (not counting those cases of discharge which followed an infectious fever) and 15.0 per cent. were due to middle ear catarrh. The suppurative and catarrhal cases taken together numbered 175, and of these 130 were directly traceable to nasal conditions, the vast majority being adenoid in origin. This means that these cases were preventable. In order properly to understand how such cases are due to preventable means, the way in which adenoids act must be briefly described. Adenoids are due to an hypertrophy of Luschka's tonsil, a collection of lymphoid tissue in the roof of the naso-pharynx. This lymphoid tissue extends laterally into the recesses which lie behind the openings of the Eustachian tubes, which form the communication between the middle ear and the post-nasal space. The nasopharynx, lying as it does behind the nose, above the oropharynx, larynx, and oesophagus, and having opening into it the Eustachian tubes, forms a most convenient centre for the dissemination of infection. The hypertrophy which forms adenoid growths may result in several ways, probably nearly always from infection. They may be left by one of the infectious fevers; they may be tuberculous; they may arise from repeated colds, from infection by that sadly misnamed instrument of baleful influence, the "comforter," or from improper artificial feeding (as Barraud, of Lausanne, has pointed out). Once present, they, with their deep clefts and thick mucous secretion, form a very fertile source for infecting nose, larynx, and Eustachian tube, so that rhinitis, laryngitis, and middle ear inflammation may be the result. Probably the infective part of the process is the most important, but adenoids also act, when sufficiently large, by preventing the proper ventilating action of the Eustachian tubes by pressure. Nor does it always need a large adenoid mass to act thus mechanically, for an enlargement of the lateral extension of the lymphoid tissue behind the openings of the tubes is quite sufficient to interfere with their normal movements.

It is only by skilled removal of the offending growths, when adenoids are once established, that ear complications and resulting deafness

can be prevented. Anything short of removal leaves the patient menaced by the first fresh infection. It will be noted that I have laid special stress upon the fact that the removal of adenoids must be *skilled*. Adenoids are often removed very badly. It is an easy operation once the knowledge of how to perform it has been acquired, but very difficult in unskilled hands. It cannot be too well borne in mind that efficient removal does not mean the mere ablation of a large central mass; lateral extensions must be equally well eradicated. If these are left, infection and mechanical obstruction of the Eustachian tubes will continue, and this explains the failures of adenoid operations. Moreover, one of the most common causes of middle ear catarrhal deafness arising in early adult life is that the lateral extensions, when they retrogress at puberty, leave behind them adhesions which effectually interfere with the Eustachian tubes. Therefore, the efficient treatment of adenoids may mean not only the prevention of deafness in childhood, but the prevention of deafness in later life. The importance of this cannot be over-estimated.

Leaving for one moment the causes of deafness which lie in the middle ear, reference must be made to another very frequent cause of serious defect of hearing—meningitis. Meningitis may extend to the internal ear and cause very serious nerve deafness. Now meningitis is a condition which may be due to a variety of causes, and, until these causes are studied and meningitis is made clearer by the light of research, we shall not be able to do much to prevent the deafness which it may cause. Hence every case of meningitis should be notified, so that its study may be facilitated for research.

These are, briefly, the facts as to the prevention of the common forms of deafness in children and adults. They are facts which cannot be too widely known. It is not realised, even by the medical profession, how many cases of adult deafness are preventable in childhood. Otology has been too long the neglected Cinderella of the medical sciences. It is time that a practical knowledge of ears should not merely be inserted in the syllabus of the qualifying examinations, but *insisted upon* by forming the subject of frequent questions in such examinations. Then, and then only, will the bulk of the profession wake to a sense of its responsibilities in the prevention of deafness. Until then the facts I have endeavoured to set forth in this short article should be as widely disseminated as possible by all who appreciate them. Nurses, especially school nurses, can

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