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MASTOID SURGERY.

THE frequency with which cases of suppurative middle-ear disease, both acute and chronic, come under the notice of the profession, the far-reaching effects of the septic processes thus originated, the danger to the ears as organs of special sense, and the actual risk to life itself make the successful treatment of this affection of the first importance. It is well known to those in charge of large aural clinics that many cases of acute middle-ear suppuration prove readily amenable to treatment of even the simplest kind; it is equally well known that a large percentage of cases, either as the result of an inherent virulence of the organism or organisms to which they owe their origin, or as the result of some anatomical peculiarity in the structure of the tympanic cavity and its adnexa, pass into a chronic condition. An entire absence of suitable treatment, or treatment alike unscientific and inadequate, is also responsible for the existence of much serious disease.

Aural surgeons have always striven to impress upon the minds of the profession at large the necessity of early and adequate treatment in cases of acute middle-ear suppuration, and have conclusively demonstrated how in the vast majority of cases chronicity may be thus avoided and the inestimable gift of good hearing power retained. For years past, on the Continent and in America, as well as in this country, the energies of progressive aural surgeons have been largely devoted to devising the best and the most effective means of arresting mastoido-tympanal suppura-

tion by improved methods of local treatment, by minor surgical operations, or by the more extensive and elaborate procedures now grouped under the heading of the radical mastoid or complete post-aural operation. In the gradual evolution of these various therapeutic measures two main considerations have ever been present in the minds of operating surgeons—firstly, the most efficient means of completely removing all foci of disease, and secondly, the best methods of preserving and, when possible, of improving the existing power of audition. That at times cases and circumstances arise where it is necessary for the sake of eradicating the existing bone-lesion to sacrifice the hearing power upon the affected side is unquestionable, but, as a rule, in the vast majority of cases it is possible by a carefully planned and executed operation to preserve, if not indeed to improve, the amount of hearing present previous to operation. The justification for operative procedures in such cases must depend upon three main points—(1) the risk to life; (2) the effects of a prolonged continuance of the morbid process upon the function of the auditory apparatus; and (3) the severity of the existing symptoms.

In aural surgery, as in other departments of the healing art, an honest endeavour must be made "to make the punishment fit the crime," in other words, to make the operation performed commensurate with the gravity of the existing morbid lesion and the clinical symptoms.

In discussing the question of septic disease of the middle ear in its relation to the actual risk to life a great difficulty is encountered owing to the paucity of reliable statistics. This is not to be wondered at when the difficulty of securing *post-mortem* examinations is taken into account and of thereby ascertaining the precise relation of the morbid processes within the ear to the pathological lesion responsible for the fatal issue.

The effects of long-continued suppuration within the middle ear are invariably prejudicial to the preservation of good hearing power; hence the contention of a certain school of Otologists that every case of chronic suppurative middle-ear disease which has resisted regular treatment for a certain number of months (the time varies with different operators) should be submitted forthwith to operation. Symptoms of any real severity are, as a rule, absent in cases of uncomplicated chronic septic otitis media; hence one has to rely as indications for operation upon the duration, the extent, and the situation of the existing disease.

These last named factors, the extent and the situation of the

disease, have a most important bearing upon the exact type of operation which may be contemplated. It is frequently possible to gauge the extent of disease only after a free exposure and inspection of the mastoido-tympanal region. The relations of the tympanum, the antrum, and the adjoining mastoid cells are so intimate developmentally, anatomically, and pathologically that extension of septic infection is courted by mere continuity of tissue, if by no other factors. Hence it happens that objective indications of disease which prior to operation may appear local and of small extent are found to be deep-seated, extensive, and progressive. The knowledge of this fact has led most modern Otologists to advocate a free exposure of those areas the most prone to infection, an exposure secured by a post-aural operation, and the throwing open to inspection of the tympanum, the antrum, and the adjoining mastoid cells. Intra-meatal operations, except for purely minor pathological conditions, have been almost entirely discarded as unsurgical, inexact, and as a rule incomplete.

The great pioneers of modern mastoid surgery, Professors Schwartze and Stacke, approach the infected field by different routes, the former by a direct opening into the mastoid antrum from the surface, the latter by removal of the outer attic wall and opening up of the aditus and antrum. A combination of these two methods, the Schwartze-Stacke operation, is the procedure now usually adopted, a procedure which recognises the importance of a free opening into the whole danger-zone for inspection and adequate treatment. The question as to whether the membrana tympani and the ossicular chain are to be left *in situ* or removed must depend upon the extent of their pathological disintegration. The main charge laid at the door of the Schwartze-Stacke operation is that an operation so radical and so extensive is inimical to the preservation of audition. That this charge is unfounded must be within the knowledge of most operators. Experience shows that good, if not improved, hearing follows the well-conducted radical operation in the great majority of cases. The contention, however, that it does not do so has lately led to the advocacy of other methods of procedure, notably to a method of operation advocated by Mr. Charles Heath.

At a meeting of the Otological Society of the United Kingdom, held on December 5, 1904, this author read a short paper (founded upon an experience of 400 operations) on "The Restoration of Hearing after the Removal of the Drum and Ossicles by a Modification of the Radical Mastoid Operation for Suppurative Ear

Disease," in which he claimed an improvement in hearing in 84 per cent. of his cases. Such results would tend to show that the removal of the drum and ossicles was certainly not detrimental to the preservation of hearing.

In the *Lancet* of August 11, 1906, this same author describes another operation "For the Cure of Chronic Suppuration of the Middle Ear without Removal of the Drum or Ossicles or the Loss of Hearing."

Unfortunately, no statistics are appended to the first paper, so that it is not possible to contrast the results—so far as the preservation of hearing is concerned—by these two methods of treatment so diametrically opposed to one another. This is unfortunate, as the comparison would have been interesting and instructive. So far, however, as it goes, the first communication is a distinct refutation of the charge that the removal of the membrana tympani and the ossicular chain is followed by disastrous results so far as the function of audition is concerned.

At the Meetings of the British Laryngological, Rhinological, and Otological Association held on November 9, 1906, and January 4, 1907, of which the proceedings are reported in this number, Mr. Heath exhibited cases operated upon without removal of the drum and the ossicles. In a discussion which followed (p. 77) it was admitted by the author that no operation according to the particular method advocated had been performed by him prior to May, 1906. As the paper was published in August, 1906, a period of only three months had elapsed between the performance of the first operation and publication. Such a short space of time is obviously absolutely inadequate to test the results of any operation, and more especially of an operation done for the relief of chronic changes in the middle ear and its adnexa.

Time may prove that a modified operation, as advocated by Mr. Heath, is an incomplete surgical procedure, founded upon an inadequate appreciation at the time of the extent of the pathological changes met with in a particular case of chronic septic middle-ear disease with bone ulceration, and that the publication of the results within a few months of the operations is premature.

Obviously where there is slight and localised disease such as can be reached and eradicated by an operation of a modified Stacke character, and where the membrane and the ossicles are left intact, a good percentage of hearing power should be retained. The question, however, which must arise before the minds of aural surgeons is whether, in cases of such localised disease as are

curable by such a limited operation as described by Mr. Heath, local medication would not have effected the same result.

In cases of deep-seated disease where urgent symptoms are present, where there is every probability of the existence of an extensive bone-lesion menacing the life of the individual, the ordinary dictates of surgery would suggest a free exposure of the whole mastoido-tympanal tract. Where, on the other hand, the lesion is a chronic suppurative inflammation of the tympanic mucosa, with possibly the existence of some limited bone-lesion, and where, after a careful and prolonged course of antiseptic treatment, healing has not taken place, a modified Stacke operation such as carried out by Mr. Heath will, no doubt, succeed in curing the existing disease and in securing the retention of a very fair proportion of good and useful hearing power.

The main deduction which would appear to result from the progressive evolution of the mastoid operation is that the operator must secure a free opening into the heart of the diseased territory, and that all subsequent manipulations must be subservient to the pathological findings present, always remembering that the greatest service will be rendered to the patient, and the best results secured, by removal of as little tissue as is compatible with the pathological exigencies of the particular case.

NOTE ON ENDOTHELIOMATA AND OTHER TUMOURS OF THE NECK.[1]

By Wyatt Wingrave, M.D.,
Pathologist to the Central London Throat Hospital.

During the past twelve months I have examined several growths removed from the cervical and parotid regions, and from the upper respiratory and digestive tracts, which belong to the group of tumours described as endotheliomata. They may be defined as neoplasms developed from and following the type of epithelioid or mesothelioid cells, such as are found lining blood- and lymph-vessels. When starting from the lining of perivascular lymph-spaces they are often termed "peritheliomata," but there is no essential difference in the character of their elements. Within the last few years these growths have received considerable attention

[1] Communicated to the British Laryngological, Rhinological, and Otological Association, January 4, 1907.