Excision of ossicles and membrane in chronic suppuration of the middle ear / by Richard Lake.

EXCISION OF OSSICLES AND MEMBRANE IN CHRONIC SUPPURATION OF THE MIDDLE EAR.

By RICHARD LAKE, F.R.C.S.

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Operative treatment on the mastoid, in otitis media suppurativa chronica; has come very prominently forward of recent years, and it is with a view of pointing out the mean, which exists between the antiseptic local treatment of the ear, and the operation of opening the mastoid antrum (letting alone those far more serious operations on the lateral sinus, or for otitic brain abcesses which do not come within the list of methods of treatment of the above diseases), that this paper is written.

The occasions for removal of the diseased structures in this complaint are: (1) The cure of otherwise intractable suppuration. (2) Improvement of the hearing power. (3) A minimising of the risk of intracranial complication. (4) As a substitute for mastoid operation. From a consideration of these points, especially the first two and last, the exact indications for operative, and successful operative procedures should result.

I would like to remark at once, that save in the exceptional circumstances which will be pointed out as

we proceed, no operation should be attempted unless the suppuration is of *over* three months' standing, and has resisted antiseptic treatment carefully carried out for that time, or unless the discharge is for ever recurring.

For the cure of this disease, it is necessary not only to remove polypi, granulations, and sequestra, but, and in this lies the key to the value of the operative treatment, also to supply efficient and free drainage ; it is precisely in cases in which the perforation is high up in the membrane that the operation is most useful, for instance, in Shrapnell's membrane, in the posterior superior quadrant. For although these two points are both at the lower part of the attic, yet we know unfortunately that true basal drainage rarely obtains here, and that the irregularities and divisions of the attic, its inaccessibility to antiseptic irrigation, cause the contrary really to be the case. Neither in the remaining cases, those in which the two large ossicles are partly destroyed, and their bodies alone, with more or less of the membrane remaining, is drainage free for the semi-necrotic ossicles are partly shut off from the exposed cavum by cicatricial tissue, pus percolating through its meshes.

With respect to necrosis of the ossicles, it has been said, and I think rightly, that the malleus alone is rarely affected ; but when one ossicle only is affected it is usually the incus, naturally, there is no regular rule for the extensive destructions of membrane which are accompanied by destruction of the handle, and sometimes exfoliation of the incus, so that when excising the malleus the incus should be sought for.

But by removing the ossicles and membrane we have not in all cases finished our work, for a study of speci-

mens, and published results, will show that a large proportion of these cases are not really cured by these proceedings even in the large perforation cases with long-standing suppuration, since in these, as previously stated, the attic and antral orifices are not infrequently obstructed by a mass of cicatricial bands or webs with caseous pus and detritus ready to take an active septic development from suitable stimulation ; as a result of this condition it behoves the operator to remove with curettes all the tissue from these regions, and to combine this with a careful irrigation with an efficient antiseptic, after using hydrogen peroxide. I believe that if this be done carefully in suitable cases it will frequently obviate the necessity of the mastoid operation, though if after this has been done suppuration continues the major operation is clearly indicated, and should be done without hesitation. It is also probable that a removal of the anterior attic wall would be advisable in many cases.

Now with regard to the improvement in hearing ; after this operation no one who has performed this operation with a sensible appreciation of its objects, can fail to have been struck by the usual marked improvement in the cases so treated over those which have been quieted down by a long and often tedious treatment of antiseptics, when from one cause or another more radical measures have not been possible.

The acoustic functions of the organ are always adversely affected in the latter, often indeed to a point of absolute suspension, with a probability of ultimate destruction, together with the permanent risk of intercranial disease, or a recurrence of the distressing discharge. By an intelligent appreciation of the aim of

this operation is meant the recognition of *all* the objects in view, that is to say, the *whole* membrane must be removed to obtain the happiest results in the improvement of hearing. The object being to expose the stapes, and not to have it covered by a piece of useless membrana tympani, which will most probably later on form adhesions, thus still further preventing sound waves reaching the stapes direct.

Operation.—The most efficient antiseptic irrigation of the canal should be performed with a cool unirritating lotion (not a hot one), in order not to cause unnecessary relaxation to the vessels; also irrigate the attic, f open, by means of Hartman's cannula.

The ear is then packed with wool soaked in cocaine hyd., 20 per cent., and left for five minutes, even if general anæsthesia is used. Commence the excision by dividing the membrane at its attachment to the meatus, taking care that this circumcision is complete, a probe will demonstrate this. The tendon of the tensor tympani and the anterior ligament next require division; the membrane is then seized with forceps, snare, or extractor, and together with the malleus is dragged down and out. Hæmorrhage during the operation is to be checked by cocaine and pressure.

It is usually the extraction of the incus which gives most trouble, but a crotchet-shaped curette will usually extract it, or an incus hook may be used, but the incus is in difficult cases only a remnant. Hæmorrhage is sometimes very troublesome and persistent, but if this is so, patience will eventually conquer it.

Crotchet-shaped curettes should be used to clear out the attic thoroughly.

General anæsthesia is not necessary if the patient has sufficient self-control to keep still; moreover, I

think that it increases the bleeding on account of the posture of the head ; again, it is certainly less easy to operate with general anæsthetics than with cocaine alone.

During the operation there are certain details which should be remembered in this operation ; and one is not to cut the corda. In order to avoid this, great care is often required, indeed, it would in certain instances seem impossible to avoid doing so, for instance, in those cases in which the nerve either runs an abnormal course or is adherent to the membrane at the usual level. As a general rule, however, if when dividing the membrane at its posterior attachment care is taken not to have more than just the point of the knife through the membrane no accident will happen. The corda lies about 1-32nd of an inch beneath the membrane.

The second point is the necessity of dividing the anterior ligament of the malleus as well as the tendon of the tensor tympani, and this is most easily done with a rectangle tenotome ; this is passed upwards anterior to the head, its division being made by a forward and outward cut.

A third point is the division of the long process of the incus or the inco-stapedial joint. Experience shows that quite as frequently as not this is not necessary, not only because the joint usually gives way when the incus is pulled on, but because in long-standing cases the long process is frequently destroyed wholly or in part. If the points above mentioned are adhered to the whole strain of the pull on the malleus is transferred to the incus, and the latter bone will often come away also.

The following unsatisfactory results may ensue :—

Continuance of the discharge in spite of treatment, requiring the opening of the antrum. Transient vertigo is of no special importance, on account of its temporary character. But a more objectionable sequel is the formation of false cholesteatomatous masses in the attic, as has been reported by numerous observers, though I have not seen it myself ; there would be no particular difficulty in cleaning it, though it would probably recur, and is usually present before. The malleus may break off short, if it does the effect of treatment may be tried before further operation, as the whole trouble may have been in the neck of the bone. Section of the corda : this causes paralysis of the sense of taste on the same side of the tongue, in its anterior two-thirds, with a sense of numbness over the same region. This never lasts for more than two months. Transient facial palsy may occur if energetic curettage of the tympanum is required.

As in this paper other than suppurative conditions are not under consideration, I shall not touch on the other diseases, for the relief of which excision of the ossicles and membrane has been brought forward lately.

The following suppurative conditions are, in my opinion, sufficient to justify operation ; if careful treatment has failed to stop the discharge when consistently carried out for a period of from six weeks to three months, or if, the treatment being successful, there is great impairment of hearing, with good bone conduction, and the stapes not visible :—

1. Perforation in membrana Shrapnelli, with definite evidence of caries and deafness.

2. Perforation over foramen ovale, *i.e.*, in posterior superior quadrant.

3. Large perforation in the inferior half of the membrane, or including the whole membrane.

4. Perforation of the M.S. with destruction of the anterior attic wall and disease of the ossicles.

5. When there is evidence of caries of the inner tympanic wall, as evinced by lateral vertigo, &c., on syringing ; dizziness alone being usually the effect of pressure on the stapes.

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