of cases in which an improvement of symptoms was found a diminution in blood pressure was also found, in a much smaller group improvement of symptoms occurred with no change, or even with a rise in pressure. Such apparent improvement in symptoms did not always coincide with an improvement from the physician's point of view.

Again, many of these patients have not only labile systolic pressures, but also have an optimum level—that is, a level at which they are most free from symptoms. I have known this level to be as high as 280 mm. Hg. One possible reason for this is that the pressure must be maintained at a certain height in order to maintain an efficient coronary circulation. As a corollary to this, I suggest that one should always try to obtain evidence of the condition of the circulation in the coronary arteries before attempting any treatment which may suddenly reduce the pressure—for example, in some patients venesection lowers the systolic pressure more rapidly than in others, and I have seen a very alarming syncopal attack follow venesection for the relief of hypertension in a patient with an unsuspected coronary lesion.

While a sudden lowering of tension is one of the most characteristic features of a coronary embolism, it is not a constant one; but to find that a patient's systolic pressure has dropped 60 mm. since his last examination should always prompt careful inquiries as to an unusual "bilious attack," or unexplained sternal or epigastric pain, suggestive of an unsuspected coronary catastrophe.

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CONSERVATIVE MASTOIDECTOMY FOR CHRONIC SUPPURATIVE OTITIS MEDIA

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Although preventive measures such as the establishment of aural clinics at schools and hospitals, the removal of tonsils and adenoids or other sources of infection in the nose and nasopharynx of children, and the proper care of patients during the exanthematous fevers have done much to reduce considerably the prevalence of chronic otorrhoea both in children and adults, there still remain a large number of individuals who continue to suffer from this distressing and potentially dangerous complaint.

Sometimes this chronic condition is due to disregard of cleansing methods of treatment during the early stages of the disease, or to the failure to remove from the nasopharynx those causes which tend to maintain the source of infection. More often, in spite of the many well-known methods of dealing with the local infection, such as cleansing treatment of the ear, use of vaccines, ionization with zinc or other metallic compounds, introduction of various powders, minor operative measures for the purpose of promoting better drainage, as, for example, the removal of polypi and granulations, or the incision

of the drumhead, the inherent chronicity of the disease prevails, and few, if any, of these methods of treatment have any effect. This chronicity depends upon the fact that, after eliminating the possibility of constant re-infection via the Eustachian tube, the pathological anatomy of the attic and antral regions of the middle ear is such that it does not permit easy access of cleansing or bactericidal fluids to these areas, whether the disease is established in the mucosal lining alone or, as is more commonly the case, in both the mucosa and underlying bone. Even the advocates of treatment by ionization do not claim success in these cases, but confine themselves rather to the treatment of those regions of the middle ear—that is, the tympanum proper—where the disease is readily accessible to the influence of the zinc ions. What, then, is to be done further for those cases which do not respond to any of the simple methods of treatment, but which drag on interminably from year to year, the patients suffering not only the discomforts of a discharge and of impaired hearing, but also the effects of a chronic systemic infection, and in which there is always the possibility of extension of the infection to the mastoid, the labyrinth, or the intracranial contents?

It is the purpose of this article to advocate in such cases an operation which aims not only at the eradication of the disease and its possible sequelae, but also at the preservation of hearing. The operation is a modified form of the so-called conservative mastoidectomy first advocated by Heath in this country more than twenty years ago, and nowadays termed transantral attico-tympanotomy. It is an extension of the simple (Schwartz) mastoid operation to include the opening up of the attic and tympanic regions of the middle ear by removal of the bridge of bone over the aditus, together with the bone that forms the outer wall of the attic, conserving at the same time the integrity of the soft parts of the external auditory meatus and the continuity of the latter with the tympanic membrane. Thus diseased areas of osteitis in the antrum or attic can be exposed and curetted, granulations and necrosed ossicles removed if necessary, the whole area cleansed, and the soft structures replaced almost in their former anatomical positions. Fresh adhesions will have to be formed between the postero-superior margin of the tympanic membrane and the denuded inner wall of the attic, the aim of this being to restore to the tympanic cavity its former closed state, containing air that is shut off from the external auditory meatus. To promote these adhesions the meatus is kept firmly packed for a few days with narrow ribbon gauze soaked in spirit; the mastoid wound is drained posteriorly in the usual manner. The daily dressing is simple, causing a minimum of discomfort or pain to the patient. Healing is generally complete in two to three weeks, when the patient is able to resume his normal occupation.

The advantage of this operation over the older classical radical or complete mastoidectomy is beyond question; hearing is preserved and there is a better prospect of obtaining a dry ear.

The types of cases most suitable for operation are those in which the greater part of the tympanic membrane remains intact and where the perforation, usually marginal, is situated either in the superior or attic area or posteriorly, when a chronic antritis may be suspected. Cases of chronic suppuration with a very large destruction of tympanic membrane are not suitable for this form of operation; moreover, since the condition is usually a safe one, owing to the free drainage that exists, treatment by simple cleansing methods is adopted. The classical radical operation is becoming a relic of the past, and should now be reserved only for those exceptional cases where a cholesteatoma has totally destroyed the middle-ear contents, or where a graver complication, such

as a labyrinthitis with meningeal symptoms, demands, as a means of approach, a greater exposure of the inner tympanic wall.

In this short article it is not possible to give a detailed description of the types of case suitable for operation, of the technique of the operation itself, and post-operative treatment, nor to enter into the arguments upon which is based the preference for this form of operation; these are matters for the aural surgeon himself. My main purpose is to draw the attention of the general practitioner to the fact that, in spite of the prejudice that still unfortunately prevails against any form of mastoidectomy as a means of treatment in cases of long-standing chronic discharge of the middle ear, the results of transantral attico-tympanotomy are sufficient to justify him, where practicable, in advising patients to undergo this form of treatment.

The following six cases, which were described at a meeting of the Section of Otology, Royal Society of Medicine, on December 4th, 1931, illustrate the results of treatment.

CASE I

Female, aged 36, with discharge from right ear since childhood. October 24th, 1930: tympanic membrane showed marginal perforation in post-superior quadrant; granulations present. October 29th: operation performed; stay in hospital three weeks. November 16th: ear dry; hearing of right ear—low whisper at 1 ft.

CASE II

Female, aged 21, with discharge from both ears intermittently for eleven years. December 20th, 1929: hearing—right ear, watch heard close; left, whisper at 1 ft. Both tympanic membranes showed marginal perforations post-superiorly; right ear discharging; left, dry. February 5th, 1930: operation on right ear; incus removed. Stay in hospital three weeks. November 16th, 1931: both ears dry; hearing—right ear, low whisper at 1 ft.

CASE III

Female, aged 10, with chronic otorrhoea of left ear since measles at the age of 3; tonsils and adenoids removed. June 20th, 1930: tympanic membranes showed posterior marginal perforation; hearing—watch heard close to ear. July 16th: operation; stay in hospital three weeks. January 20th, 1931; ear dry; hearing—watch heard close to ear.

CASE IV

Male, aged 30, with left chronic otorrhoea since the age of 14. June 17th, 1930: tympanic membrane showed a post-superior marginal perforation with granulations and a thick discharge; hearing—low whisper at 1 ft. August 13th: operation; wound healed completely in two weeks. November 20th, 1931: ear dry, but a very small central perforation still exists posteriorly; hearing—watch heard close to ear.

CASE V

Female, aged 29, with chronic suppuration of right ear since measles at the age of 12. October 22nd, 1931: attic perforation with granulations; hearing—watch heard close to ear. November 5th: operation; wound healed completely in three weeks. November 28th: ear dry; hearing—watch close.

CASE VI

Female, aged 28; bilateral chronic suppuration since early childhood, following measles. October 29th, 1929: symptoms of toxæmia; recent exacerbation, following cold. Right ear: marginal perforation with granulations in post-inferior quadrant; foul discharge; mastoid tenderness. Left ear: posterior marginal perforation, reddened membrane. Hearing of both ears good. November 1st: operation on right ear; lateral sinus exposed after removal of diseased bone. November 11th: operation on left ear; incus removed, and middle fossa exposed by removal of diseased bone. Both ears healed and dry within two weeks after operation. December 4th, 1931: right ear, dry; hearing—watch close to ear. Left ear: dry; hearing—low whisper at 6 in.

When demonstrating the above series of cases I drew attention particularly to the following points: the long period of chronicity in each case; the site of the post-auricular incision in the hair-line, giving rise to practically no deformity; the conservative treatment of external auditory meatus, tympanic membrane, and middle-ear contents (in two cases only was the incus removed); the short stay in hospital; and the successful preservation of useful hearing after eradication of the disease.

SUMMARY

1. Chronic suppurative otitis media (in reality, chronic mastoid disease) still remains far too prevalent in spite of its admitted dangers to the patient and the loss of national efficiency due to deafness.

2. Conservative mastoidectomy, though devised and advocated as long ago as 1907 by Charles Heath, has not yet gained that universal support it deserves.

3. A modification of Heath's operation, termed "transantral attico-tympanotomy," is now advocated, and the successful results in a series of cases are described.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

THE FIRST CASE OF SPRUE IN MALTA

The record of a "first case" from any given locality has its own peculiar interest, and as we are not aware of any previous case of sprue having been recorded from Malta, the following description seems warranted. It is interesting to note, incidentally, that Rogers (1929) refers to cases of sprue reported from South Italy and Sicily.

The patient was a retired Army officer, of pure Maltese race, aged 52 years. Symptoms commenced in October, 1929, with two or three loose motions daily; these were often frothy, and usually occurred in the mornings. Six months later he began to lose weight, and from September, 1930, till January, 1931, he noticed some soreness of the tongue. Various lines of treatment were tried without lasting benefit. We did not see him until December, 1930, and he could not come into hospital until the New Year. There was a previous history of typhoid in 1904, and bacillary and amoebic dysentery during the late war. The patient had spent all his life in Malta, except four years on war service in the Near East.

On admission there was considerable emaciation, the abdomen being distended with gas, the muscles thin and flabby, and the skin darkly pigmented; stools were loose, muddy coloured, offensive, very bulky, and sometimes frothy. At first their reaction was alkaline; later it became acid.

Detailed Investigation

After dental extractions for pyorrhoea detailed investigations were carried out. An x ray with barium meal showed no evidence of malignant or other organic disease of the alimentary tract. The fractional test meal showed marked hypochlorhydria, only a trace of free HCl being present. Both the urinary diastase test and Loewi's adrenaline eye test were negative. Blood examination showed: red blood cells 3,750,000 per c.mm., haemoglobin 75 per cent., colour index 1. The leucocytes were normal. Bacteriological examination of the faeces showed no evidence of dysentery organisms or of tubercle bacilli. Streptococci were isolated both from stools and from the roots of extracted teeth. Fat analysis of the faeces showed that the total fats varied from 28 to 43.6 per cent., of which approximately 36 to 48 per cent. was split, and 52 to 64 per cent. unsplit.

These results excluded such conditions as malignant disease, chronic pancreatitis, pernicious anaemia, and tuberculous infection. Taken with the clinical picture they provided very strong evidence for a diagnosis of sprue, so the patient was treated accordingly.