SUPPURATIVE OTITIS MEDIA TREATED BY ZINC IONIZATION.*

BY

T. B. JOBSON, M.D.,

REGISTRAR, CENTRAL LONDON EAR AND THROAT HOSPITAL; EAR,
NOSE, AND THROAT SURGEON, ROYAL SURREY COUNTY
HOSPITAL, GUILDFORD.

DURING the past year 50 patients attending the Central London Ear and Throat Hospital were referred for treatment by ionization. They included 57 suppurating ears, and of these 45 were treated by ionization. In 29 of these the otorrhoea rapidly ceased; 2 relapsed after a few weeks, 13 were not cured, and of 3 the result is not known. This gives a percentage cure of 60.

Of those not cured 6 were cases of cholesteatoma and 2 were old mastoid operation cases. Neither of these classes is quite a fair test of this method of treatment. If we omit these eight failures the percentage cure works out at 80. By cure I mean complete cessation of discharge; I take no account of cases improved.

The cases were referred by various members of the staff; most had been under the ordinary antiseptic treatment for some time.

Fifty Cases of Suppurative Otitis Media.

No. of suppurating ears	...	...	...	...	57
Ears ionized	...	...	...	...	45
Ears not ionized	...	...	...	...	12
Result of treatment by ionization (45 ears)—					
Cured	...	...	...	...	29
Not cured	...	...	...	...	13
Unknown	...	...	...	...	3
Condition of the 29 cured—					
Still dry	...	...	...	...	27
Relapsed	...	...	...	...	2

Attic and Cholesteatoma Cases.

These were of the well known type with tiny attic perforation either in Shrapnell's membrane or burrowing under the anterior or posterior ligament of the malleus. The membrane itself was glued to the inner wall of the tympanum by cholesteatoma, and was by the pneumatic speculum shown to be either totally fixed or mobile only in small areas. These cases, which generally have only a scanty foul-smelling discharge, usually have symptoms of toxæmia, such as headaches, giddiness, and chronic ill health. They are the most dangerous class, always on the brink of a calamity. In the hope of benefiting this type of case I tried various preliminary methods of treatment, such as drops of liquor pepticus, liquor pancreaticus, and aniline oil with spirit. After these had been used for a week I washed out the tympanum with warm ether followed by the zinc solution and then ionized. My hope was that the cholesteatoma would be partially disintegrated and thus capable of being washed out. My only reward was a temporary improvement. Not one of these cases was cured. I am firmly convinced that such cases are not curable by any form of antiseptic treatment nor by ionization.

Cholesteatoma is in a class by itself. Our knowledge of its causation is incomplete. At present the only efficient treatment is a radical mastoid or possibly ossiculectomy operation. Occasionally a case that seems to be cholesteatoma does dry up, leaving a wax-like fixed drum, but such cases are the exception.

Of the other patients who were not cured one had definitely chronic mastoiditis. One had subacute otitis, as shown by redness of the drum and pulsation of the pus coming through the perforation; she had headaches and probably also mastoiditis. One was a child of 2 with pin-hole perforations. The mechanical difficulty in washing out the tympanum was the cause of failure here. The other cases were examples of septic Eustachian tubes, and were referred for treatment of adenoids, oral sepsis, etc. One case which appeared suitable in that she had an adequate central perforation did not dry up. Three cases

sent for treatment were nearly dry, and were not ionized. Another case with polypi dried up after removal of the polypi without ionization.

Technique.

This is described fully in Friel's *Ionization*, and I will not go into detail, but would emphasize the importance of the preliminary toilet of the ear. The tympanum must be emptied of pus and debris; mopping, suction, intratympanic irrigation, instillation of cocaine and adrenaline, all help to produce the open tympanum desired, for it must never be forgotten that sterilization takes place only over the area covered by the zinc solution.

Number of Treatments.

The majority (22) of the successful cases were ionized only once; 4 received two treatments, 2 received three treatments, and only 1 as many as four. If the case does not dry up after two or three ionizations it is not likely to yield to this form of treatment. We must then diligently search for the cause of the chronicity. This may be remediable if it is sepsis coming back from the nasopharynx. If it is due to an infected mastoid antrum a mastoid operation is indicated; if it is due to a closed tympanum with septic pockets inaccessible to the ionizing fluid the problem is very difficult. Evidence of carious bone associated with polypi calls for a mastoid operation.

The results obtained have been gratifying; many have been dramatic. One case which had been discharging for twenty-seven years dried up with one treatment. (She, with some other patients, was exhibited before the meeting.) Another case had a history of twenty years' suppurative, another of ten, yet in each case they were dry after one ionization. Another case, which had attended for treatment at the hospital for three and a half years (displaying marvellous patience), was cured after two ionizations. It is extraordinary that sepsis should remain limited to the tympanic cavity for such a number of years; but that it is so must be a fact. Were they cases of chronic mastoid disease—a view held by Mr. Heath—sterilization of the tympanic cavity by ionization would cause only a temporary improvement and they would rapidly become reinfected. The possibility that the antrum might be filled with the zinc solution and might be ionized concurrently with the tympanum is, in my opinion, not credible.

A gain to the surgeon practising this method of treatment is that his knowledge of the topography of the diseased drum is greatly increased. The appearance of the membrane of a "closed" tympanum is very deceptive. A depressed area adherent to the inner wall frequently simulates a perforation, and frequently one's first impressions have to be amended by subsequent observation. The passing of an intratympanic cannula is a great check on the correctness of one's idea of the topography of the perforated drum.

My experience of these cases and others forces on me the conclusion that in zinc ionization we have the most efficient method of treatment of tympanic sepsis of a certain type. It is not suitable for acute or subacute cases or for attic cases with cholesteatoma. Of course, in treating any case of otorrhoea, oral and post-nasal sepsis must be eliminated to prevent infection; this is just as true of cases treated by ionization as by any other method. The criterion of suitability is an open tympanum with an adequate perforation leading to it in which the sepsis is limited to the tympanic cavity. A tympanum "closed" by polypi or cholesteatoma is unsuitable. The advantages of treatment by ionization are:

- (1) It will cure any case of otorrhoea which is curable by drops.
- (2) It will accomplish this in one-hundredth part of the time, thus saving an enormous amount of the patient's, doctor's, and hospital's time.
- (3) It will cure a large number of cases which do not mend with ordinary antiseptic treatment.

My thanks are due to Dr. Dan McKenzie, in whose clinic I carried out the work, and also to the other members of the staff who so kindly referred the cases.

* Read at the monthly clinical meeting at the Central London Ear and Throat Hospital, June, 1923.