Houseman

Notes on Otorrhœa.

The discharge which so frequently accompanies many of the diseased conditions of the ear has for long been known as otorrhœa. For some *reasons, I think, such a name is to be much regretted, as too many, I fear, seemingly blind to the fact that this term denotes merely a symptom of varied pathological conditions, treat it as if all cases depended on one and the same cause.

It is obviously useless to attempt to cure an old standing discharge complicated with, say, a large polypus, by means of the daily use of a weak astringent solution, although a similar line of treatment might cure a case of simple otorrhœa, merely depending on a chronic catarrhal condition of the lining membrane of the tympanic chamber. The only way, then to hope to successfully treat this common

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symptom of aural disease is, in the first place, carefully to ascertain its cause.

But unfortunately such a preliminary step is often neglected, and every one who has seen aural out patient work in our special hospitals, must have been struck by the many persons with old standing ear discharges, who present themselves after having been using ear lotions for years without any benefit, & who on examination are found to be suffering from perhaps some old standing polypus or still worse from disease of the mastoid cells, or some other more important part essential to perfect hearing. Unfortunately many of such cases are too far diseased to hope for much benefit being derived from treatment, where, had a timely examination been originally made, irreparable disease, life long deafness, nay, even worse, in some cases, deaf mutism might have been obviated.

This deepseated prejudice against

the local treatment of aural diseases is not confined entirely to the public, but amongst its adherents are to be found members of our own profession. The number of patients who state that their family medical attendant has for long refused to interfere with their ears, telling them that as years go on they will grow out of it, or that by arresting such discharges, brain mischief, or fits may be induced, is indeed astonishing. and while one must take the ordinary outpatient's story cum grano, still from the number of corresponding statements one hears, one is lead to fear that even now there are by no means few adherents in our profession to the old and erroneous ideas of Du Verney, Itard, Lallemand & Williams.

In 1844 Wilde, in his essay on "The Causes and Treatment of Otorrhoea entered a strong and eloquent protest against expectant treatment in aural

diseases, and certainly since his time most medical men have followed his teaching.

But while all must regret that still expectant treatment is somewhat frequently advised, cases unfortunately do occasionally occur, where (after a patient has lived in comparative health for years with an otorrhoea. (troublesome only on account of the discomfort it produces) death rapidly follows attempts at cure.

Formerly sceptical about such mishaps, a case came under my notice when Surgeon to the Newcastle Throat & Ear Hospital:-

A man, aged 37 came with a history of ear discharge of 15 years duration, dating from an attack of scarlet fever. He had never had any pain or tinnitus, or vertigo, & his hearing power was but slightly impaired. The discharge however had always been a source of great annoyance to him. I remember

him telling me at the time that he was afraid I would have to use some very powerful treatment to him, as for 2½ years he had been persistently using various ear lotions prescribed by several practitioners in Northumberland ~~without~~ avail. - The duration of the case, made me suspect diseased bone, but on carefully percussing the mastoid, I could not produce any pain or tenderness. On specular examination I found an old & large perforation, from which a fairly healthy, somewhat watery, inodorous, discharge was exuding. I shall have occasion under the head of treatment to again refer to this case, in which, after a weeks treatment, the patient unfortunately died. I must however state that, although there was no tenderness on percussion of mastoid, no history of pain or other subjective symptoms, judging from the rapidly fatal issue, I hold that

in all probability, there was some grave latent cerebral disease of old standing which was called into activity by my treatment, but which independently of it, would sooner or later have proved fatal.
I brought the case under the notice of the Newcastle on Tyne Clinical Society in 1885, and the general opinion was in favour of my view. Unfortunately no post mortem exam-ination could be obtained. I find similar cases have been recorded by Benjamin Brodie. Itard & Valsalva (Wilde's Aural Surgery 1853. P. 406).
As regards the prognosis of an otorrhoea, a guarded opinion must always be given, for, no matter how simple appearances may look per speculum, one can never foretell with any degree of certainty, how and when it may be cured. In some cases indeed palliative antiseptic treatment is all that can be done, there being no possibility of ever effecting a cure.

The dangers, too, which all sufferers from otorrhoea are exposed to, are not as a rule sufficiently recognised although a glance at the anatomy of the parts will convince the most casual observer of their reality. — The extreme thinness of the upper tympanic wall, the fact (which I think has perhaps, not been usually enough emphasised) that in the young, amongst whom are by far the largest number of sufferers from otorrhoea, the squamous and petrous portions of the tympanic roof are but loosely united by an intersutural membrane — the great delicacy of the bony septa separating the chamber on the one hand from the internal jugular vein, on the other from the internal carotid artery — the openings into the mastoid cells, and the canals transmitting the petrosal & other veins — & the spaces in the diploe conveying vessels from the tympanum to the dura mater, & lastly the passage

in the labyrinth transmitting the seventh pair, are all channels by which septic matter may be conveyed from the tympanum to more dangerous parts, and the complications to be especially dreaded are, extension of the disease to the cerebral meninges, cerebral abscess, caries of the tympanic walls, erosion of the large vessels, phlebitis and pyaemia.

Symptoms attending otorrhoea:-

(a) Deafness, varying much in different cases is almost constant, and although it is sometimes so very slight as not to cause any inconvenience to the patient, still I doubt whether a case ever occurs where by applying the watch test a certain amount of defect cannot be recognised. Personally I have never found this symptom absent. The size of the perforation, which, at first sight, one would suppose to be an important factor in the

causation of this symptom in reality seems to have little to do with it; and one is frequently astonished to find a hearing power of 30/50 accompanying a large perforation, whilst in some cases, where the perforation is so small as to be with difficulty recognised, the watch can only be heard on contact with the auricle. Even where nearly the entire drum has disappeared, and the small bones become destroyed, there is occasionally a wonderful amount of hearing power left, probably due to the oval window remaining intact.

(b) Tinnitus, is not, I think, a common accompaniment of the conditions upon which otorrhoea depends. but seems much more frequent in cases of non suppurative tympanic disease, foreign bodies in the external canal, and in the so called "nervous" cases.

(c) Pain is the exception in cases of non complicated chronic discharge depending on tympanic catarrh, provided there is free access for the discharge through the perforation. I believe, however, that in most cases of chronic suppuration, by carefully percussing over the mastoid process, a certain amount of deep seated pain may nearly always be detected, but frequently it can only be elicited by such an examination, the patient never in an ordinary way feeling any discomfort from it. The import of recognising this symptom, as indicating an abnormal condition at least, of the mastoid cells, if not caries or necrosis, cannot be overestimated, as being an indication for early activity as a preventive again septic disease, or implication of the adjacent lateral sinus.

(d) Dr. McBride has recorded epileptic fits as occasionally complicating an otorrhoea (Epilepsy, Vertigo & Ear Disease 1880) Edin Med. Journal.

and the same writer also mentions
(e) Vertigo, as being not uncommon;
and he calls attention to Urbantschitsch's
observation that in not a few cases
(f) the taste becomes impaired, owing
to the implication of the chorda
tympani in its passage through
the tympanum. (Guide to Study of Ear. P. 57)
Such a condition I have never met in
aural practice, but its possibility
is self evident.
The odour of the discharge has
sometimes been looked upon as
being of importance from a diagnostic
point of view, many having held that
fetor indicates the probability of diseased
bone, but although this may sometimes
occur, it is so uncertain as to be absolutely
useless as a diagnostic.
My experience in out-patient work
is that badly smelling discharges are
the exception rather than the rule,
and as hospital patients usually are
essentially dirty in their habits, one
can hardly look on uncleanliness

as the cause of such conditions, nor can it be entirely due to the decomposition of pent up discharges, prevented from escaping per meatum by mechanical obstructions, such as polypi, as the most offensive case I ever saw was that of a young medical friend of mine who had suffered for some years from an otorrhoea, and in whose ear there was perfect drainage, and who carefully twice daily washed out the parts with antiseptic injections.

I am rather inclined to think that there are constitutional peculiarities in some persons, no matter how cleanly they are, which account in a measure for this most disagreeable complication. It is a matter of daily observation, that in some persons of the most cleanly habits, who take their daily bath, perspiration, almost directly it is excreted, becomes offensive, & I take it that a similar idiosyncrasy may account for a bad smelling ear discharge. But while owning the uselessness of

putting much faith in the smell of an aural discharge, still valuable information might be gleaned in doubtful cases by a microscopic examination of the pus, on the possibility of detecting bony particles in suspension, such a discovery being conclusive evidence of tympanic caries.

Blood, mixed with an ear discharge, would naturally suggest the possibility of a polypus or of granulations, as complications.

Before examining the ear in a case of otorrhoea, the meatus should always be first washed out carefully with warm water, and during examination, I prefer the expanding ear speculum to any other, the light being obtained from an ordinary Morell Mac Kenzie's lamp. In some cases no perforation is to be found, the discharge depending on causes external to the tympanum, but in far the largest majority, a perforation is visible, sometimes indeed almost

all the membrane having disappeared, while in others the aperture is so minute as only to be recognised during inflation of the eustachian tube when the escape of a bubble from the tympanum will indicate its position. The appearance of the tympanic mucous membrane, too, varies greatly in different cases, sometimes being pale red, at other times very deep coloured. Dr. McBride refers to some cases where the discharge ceases while the perforation remains unhealed & to such he gives the name of dry perforations. I only ~~remb~~ remember having seen three of such, in none of which the hearing power was much impaired, but in which all efforts directed towards healing the perforation proved useless.

Otorrhoeas may be divided into two great classes.

(1) Extratympanic cases, or cases in which the conditions on which the discharge depends are external to the tympanic cavity, and the drum is consequently intact.

(ii) Intratympanic cases, or cases which depend on pathological conditions of the tympanum, and which, are consequently accompanied with perforation.

While the first variety are comparatively rare, as contrasted with the latter, still on account of the difficulty occasionally experienced in effecting their cure, they are by no means unimport^t.

The causes of Extratympanic otorrhoea are:-

(i) Porrigo, Crusta Lactea, herpetic and other eruptions extending inwards, especially in scrofulous subjects. (Wilde Diseases of Ear. 1853 Page 399).

(ii) In delicate subjects one may have an external otitis produced by mechanical injuries, leading to somewhat tedious discharges.

(iii) Polypi have been cited as a cause, taking their origin from the walls of the external canal, but the likelihood of such an event seems to me highly improbable, when one considers the structure

of these parts. I have never seen a polypus growing from any part of the meatus, and I find that Dr. McBride throws doubt on their existence (Page 66-67). Mr. Noughton Jones, however, ~~seems~~ seems to have met with them, as he states that they may grow "from any part of the meatus or just in front of the membrane." (Aural Surgery 1881. Page 138). I have seen conditions, which at first sight appeared to be polypi, but which on further examination proved to be old standing accumulations of pus under the skin.

(iv) Diffuse erysipeloid inflammation of the face may occasionally, spreading down the meatus, be the starting point of a very intractable attack of otorrhoea. One such case came under my notice in 1885, and proved very difficult to cure but eventually yielded ~~to a~~ under a course of cod liver oil, & the daily application of a solution of nitrate of silver.

(v) An external otorrhoea may be the result of a badly treated abscess of the meatus.

(vi) In scrofulous subjects an unhealthy discharge occasionally is seen: sometimes in connection with diseased bone or cartilage, or enlarged glands; in other cases without any such complication.

The causes of Intratympanic Otorrhoea are the numerous factors which may produce suppurative tympanitis:-

(a) Most frequent in occurrence, most virulent in nature, and most disastrous in its sequelae is that form of inflammation of the tympanum which follows scarlet fever, measles, and diphtheria; and unfortunately, as this variety very often occurs in infants, too often the first indication of its existence is discharge from the ear consequent on rupture of the membrana. Many cases of lifelong deafness might be saved by carefully watching the ears in every case of scarlet fever, and as soon as suppuration

in the tympanum shows itself by bulging of the membrane and other symptoms, incising the part and following up the treatment by daily warm antiseptic injections.
Objections might be raised to such a plan by the busy general practitioner, who may have his epidemic to attend in addition to other equally important work, but when one considers the extremely disastrous results following neglect of this affection in its early stages, and the strange yet occasionally undoubted fact that it may sometimes occur with little or no accompanying pain, the import of a daily inspection of the ears in every case of scarlet fever becomes self evident. Nor is it enough to infer that if the throat affection be very slight, the chances of consequent tympanitis are minimised, for there is undoubted evidence that this affection does not always owe its origin to inflammation spreading along the eustachian tube, but that sometimes the inflamm-

tion spreads from the surface of the body along the external meatus, & thus to the tympanum.

While reference is made to fevers as important agents in the production of suppurative disease of the inner ear, I must mention the occasional occurrence of suppuration in cases of cerebro spinal meningitis. The comparative frequency of non-suppurative disease in this affection has long been known, but I think Von Ziemsson first called attention to the very rare development of the suppurative type. (Hilton Fagge's Medicine Vol I p. 597) Heller thinks that the affection arises from extension of the disease from the pia mater, while Prof: Knapp says that it commences as a purulent inflammation of the labyrinth.

(b) Secondly, perhaps in frequency may be placed that class of cases depending on cold, and in many cases arising from simple faucial or nasal catarrh. I think there can be no doubt that, (other things being equal) such cases are much

more amenable to treatment than the more destructive cases depending on the specific fevers. Cold may also attack the membrane, producing myringitis, which in some cases ends in perforation, with subsequent otorrhoea.

(c) Mechanical causes, such as the rupture of the drum head by that vile habit of boxing the ears, by sea bathing, or by the near discharge of artillery must be noted as possible. A girl, aged 17, once consulted me for discharge in the ear. I learnt that some weeks previously she had been at the artillery practice at the Tynemouth Castle, where her drum was suddenly ruptured. This case proved very troublesome, but eventually the perforation was healed, but there was considerable impairment of hearing.

Treatment of Otorrhoea & its Complications

(1) Constitutional. (2) Local.

(1) I have been in the habit of giving either cod liver oil or some other strength-

preparation in all cases of otorrhoea, where there is no evident exciting cause to keep up the discharge, such as a granulation or polypus, and I believe that such means are extremely useful, even in chronic cases, where there is no reason to suspect struma (or syphilis?) But, while such remedies are very useful, when combined with proper local measures, the cases must, I think, be very rare which are cured by constitutional remedies alone.

(11) Before examining a case of ear discharge with the view of ascertaining its cause, the importance of first thoroughly cleansing the external canal cannot be too strongly emphasised, for frequently the dried & accumulations of old discharge and dead epithelium give rise to be deceptive appearances, while at the same time they obscure the drum. In most cases all that is necessary is to syringe out the ear with warm boracic lotion or water, but sometimes, before the hardened masses can be extricated, preliminary

instillations of bicarbonate of soda in solution, are necessary, and in such cases a little soap powder mixed with the water used for syringing is useful. But after all foreign bodies are removed from the canal, one sometimes cannot get a satisfactory view of the drum head on account of the lining being in a sodden state, if one may use the term, which I take it, is due to the constant moistened condition of the parts (Such a condition as one sees on the skin of the hand after long immersion in hot water). In these cases matters may be much improved by the use of glycerine for a day or two, which, abstracting the moisture, enlarges the lumen of the canal.

Having, then obtained a full view of the membrane, one may recognise many conditions:-

(a) It may be intact - (in cases where the discharge arises from some external cause.

(b) The perforation may be so small as not to be evident unless, during examination, inflation per eustachian tube, be performed.
(c) The perforation may be at once evident, varying from almost complete absence of the membrane, to an aperture of extreme smallness.
(d) Sometimes there is an appearance of pulsation in connection with the perforation, doubtless dependent on some enlarged vessel in the neighbouring remains of the membrane.
(e) Lastly, granulations or polypi may be observed as complications in many cases of perforation.
In treating discharges due to external causes one's chief reliance must be placed on constitutional remedies & I have usually found the local application of weak solution of nitrate of silver an exceedingly useful adjunct after which I use a little glycerine every evening.
In cases of perforation (uncomplicated)

I have been disappointed with the many astringent injections such as zinc lead and tannic acid, but in my experience no line of treatment is so successful as the frequent insufflation of boracic acid powder after careful syringing of the parts. Should the discharge be very offensive a small addition of iodoform powder to the boracic acid is very useful. The disagreeable smell of the iodoform may, according to Dr Robert Sinclair of Dundee, be much mitigated by triturating it with a fourth part of tannic acid, and Dr. MacNaughton Jones uses Balsam of Tolu for a similar purpose (Aural Surgery. 1881. 252 Page). In addition to this treatment the occasional politzerisation of the affected ear, combined with instillation of boracic lotion is very important, with the view of washing away secretion from every portion of the tympanic cavity. The application of a strong solution of nitrate of silver to the edges of the perforation is sometimes

of great value in hastening the cure. Dr McBride recommends, in cases where the tympan-
-ic membrane is swollen and granular, that rectified spirit should be instilled into the ear. I have frequently used this remedy in such cases with marked success, but prefer its admixture with an equal quantity of glycerine to the pure spirit. In some cases of old standing otorrhoea, where, from the smallness of the perforation, drainage of the discharge becomes a matter of difficulty, the possible advantage of carefully enlarging the opening is worthy, I think, of consideration. I fail to see any advantage to be gained by the method of treating otorrhoea by packing the external canal with dry boracic acid & leaving it in situ for days, as recommended by Pomeroy (Diseases of Ear. 1883. Page 237) as, all the advantages of the boracic acid treatment, appear to me to be equally well obtained by the more cleanly & simpler method described above. The plan of washing out the ear

recommended by Hinton, in which, after fitting an air tight nozzle into the external meatus, & connecting this with a syringe, he sought to wash out the tympanum per eustachian tube, seems to me to be not entirely devoid of danger. The only cases in which I ever tried it, was followed by somewhat persistent attacks of vertigo. When one considers that in many cases the aperture of inlet for the injection into the tympanum (the perforation) is larger than that of its outlet (the tympanic termination of the eustachian tube), the lumen of which we have every reason to believe is much narrowed in many cases of chronic tympanic disease, by the swollen condition of the mucous membrane, the possibility of producing a considerable amount of intra-tympanic pressure by Hinton's treatment seems to me to at once suggest itself. Again with a diseased & softened condition of the tympanic mucous membrane, combined with an effete

septic discharge, one can conceive how by Hunter's method, under increased pressure, septic material might be forced into the circulation, and produce blood poisoning. For the above reasons I have always avoided syringing out the tympanum by the eustachian tube. Occasionally however, especially in some of those cases depending on the ravages of scarlet fever, so direct is the communication between the external meatus and the throat, that, during ordinary syringing some of the fluid escapes into the latter channel. Three such cases have come under my notice.

Sometimes one meets a case of otorrhoea which seems to defy all ordinary methods of treatment. Such a case I referred to at an earlier part of this paper. Having noticed in Dr Pomeroy's book (Page 235) how highly he spoke of strong solutions of nitrate of silver in some cases, I determined to give such a line of treatment a trial.

He says "On the whole nitrate of silver "
is one of the most effective remedies in "
the treatment of suppuration of the ears. "
It has the advantage that it is of service "
when there are granulations or polypi. "
There is no way of determining the proper "
strength except by trial..... An average "
strength for children would be from "
2 to 20 gr. to the ounce, and for an adult "
from 20-80 gr." He goes on further to mention
a case in which he used a solution of
100 grains to the ounce, which "diminished
the discharge and was not accompanied
with pain". He used a dropper & fairly
inundated the parts, the head being
turned so that the meatus pointed up-
wards, & while in this position inflation
was performed, to still further insinuate
the remedy into every part of the tympanum.
In my case I tried this method, but
contented myself with a xv gr. solution
to the ounce, with the unfortunate
result that the patient, as above stated
died of cerebral abscess.
When polypi are small, or granulations

complicate an otorrhoea I always give the alcohol and glycerine treatment a trial before adopting more radical measures. Even in cases of large polypi, such a line of treatment may, I think, be first used with advantage. The method frequently employed of twisting out a polypus by means of forceps is, I think, essentially bad, as when one considers that the greater proportion of such growths spring from an already diseased tympanic mucous membrane, ~~such~~ it becomes evident that such treatment must necessarily disturb the relations of the contiguous parts much more than their removal by means of Wilde's snare.

The mere removal of a polypus is rarely, if ever, followed by satisfactory results, unless the after treatment is very carefully attended to. I usually cauterise the stump about 30 hours after removal of the polypus, with chlor-acetic acid, a remedy which I was first led to use on the recommendation of Dr. Mac Naughton Jones, and which I

believe has advantages over nitric acid, or other appliances. No definite rule can be laid down for the frequency of cauterising a polypus stump after operation, & each case must be judged on its own merits by daily inspection of the parts. Unless, however, the stump be thoroughly destroyed, the growth is almost certain to reappear. As regards the use of cocaine in removing ear polypi I have been much disappointed, so much so, indeed, that I have discontinued its use. Amongst the serious complications of the diseased conditions on which otorrhoea depends may be mentioned, disease of the mastoid process, which is dangerous not only on account of its structure being so favourable to the retention of septic discharges but also on account of its near proximity to the lateral sinus. In treating any such case, then, the import of active and early treatment cannot be over estimated.

A girl E. G. aged 17, a domestic servant, some time ago came under my care complaining of pain in the mastoid region, which spread to

the ear whenever she caught cold, deafness, & discharge. On testing the affected side I found she could with difficulty hear the watch when in contact with the ear. Her symptoms were of nine years duration, and dated from an attack of scarlet fever. Six months before presenting herself at the hospital, an abscess formed in the back of her ear, and burst, leaving a sinus, discharging unhealthy pus from the mastoid process. A free discharge was also coming from the external meatus, and, on specular examination, a polypus, the size of a large pea, was found protruding through an extensive tympanic perforation. After 2 weeks treatment by antiseptic injections, the girl, getting no better, consented to have her mastoid process trephined. and this ~~process~~ was freely opened into by means of a gouge, the polypus being removed at the same sitting. A small drainage tube was inserted into the sinus leading to the mastoid, and through this, twice daily

a warm boracic lotion was injected, which, finding its way through the tym-panum, escaped per meatum.
Notes. Operation performed on May 31st 1885
June 1st Ear painful. syringed twice.
– 4th Pain nearly gone; discharge free.
– 16th Discharge much diminished.
Patient's hearing power much improved 9/50
We then lost sight of her, and I did not see her again till Feb 1887 when engaged in writing this paper. Her hearing was then but poor, but this she attributed to a severe head cold. The sinus had healed, there was no tenderness over the mastoid, and the perforation though still visible was much less than formerly, while the discharge was scanty. So far the treatment was satisfactory, but, as we cannot get her to attend now at hospital the probability of a permanent cure being made is small.
Other complications, less satisfactory to treat, but equally dangerous, are caries or necrosis of the bones of the tympanum haemorrhage from the large blood vessels & septic diseases. Such complications are

beyond the reach of special treatment, and much be met on general principles. As regards artificial drums, in cases where one cannot produce complete closure of a perforation, my experience of them has not been very favourable. The only ones I have used have been ones composed of a small piece of cotton wool, which, while I think they have all the advantages of other more rigid ones in the market, are free from the dangers which undoubtedly in some cases follow the use of the latter. In connection with this subject my friend Dr. Bramwell, at present house surgeon at the Newcastle Infirmary, had a very interesting case. A young man came to him with an old standing deafness in one ear. On examination, a dry perforation was found, & Dr Bramwell introduced an artificial membrane in the hope of improving his hearing. No sooner, however was it placed in position than the patient fainted, nor could he be brought to again

until it was removed. Nothing further was done for a week, when a similar experiment was tried with the same result. The conclusion we drew was that possibly the symptoms was produced by stimulation of the auricular branch of the pneumogastric nerve, producing inhibition of the hearts action. Such a possibility makes me extremely reluctant to use such aids to hearing, except the, to me, harmless cotton wool variety which is occasionally useful.

J. G. Houseman MB. 1881