TREATMENT OF

CHRONIC AURAL DISCHARGES.

BY JULIAN J. CHISOLM, M. D.

PROFESSOR OF EYE AND EAR DISEASES IN THE UNIVERSITY OF MARYLAND, AND SURGEON IN CHARGE OF BALTIMORE EYE AND EAR INSTITUTE. SURGEON OF PRESBYTERIAN EYE AND EAR CHARITY HOSPITAL,
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A PAPER READ BEFORE THE BALTIMORE ACADEMY OF MEDICINE.

(Revised from North Carolina Medical Journal, May 1878.)

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Chronic Aural Discharges.

Chronic aural discharges have so long been an opprobrium to the profession that it has become the habit with many physicians to ignore their treatment. *Let it alone and the child will outgrow it,* is the stereotype professional phrase which I hear daily from patients who have exhausted their patience in awaiting this outgrowing. I have heard of cases of aural discharge lasting through a long life, literally from the cradle to the grave, and never were cured. These cases had sought relief from more than one medical source, and had derived great consolation from this oracular opinion delivered with the positiveness that professional ignorance alone engenders.—*Let it alone, it is a good vent for the system !!!* "*Stop it and your lungs will suffer !!!*" Or if the patient be old enough he is made to rejoice in the knowledge that in this discharge resides his immunity from apoplexy, and he is thoroughly scared from seeking relief from this annoying disease, by having these words ever ringing in his ears. *Check it at your peril !*

On the contrary a long running ear is always a dangerous companion. The drum cavity from which the discharge escapes is surrounded by bony walls which isolate it from most important neighboring structures. The roof of this cavity is separated from the brain by a very thin plate of bone, and at times inflammation has extended from the ear through this bony partition directly into the brain, causing death. Should the inflammation extend in an other direction it will cause plugging of the large veins coming out of the skull and equally bring about a fatal result. Such serious accidents, and many other very dangerous complications, may at any time come on in connection with a running ear, and hence attention can not be too early given to the arrest of this very annoying and dangerous disease.

The explanation for the false positions so constantly assumed by even good practitioners is found in the recognized difficulty with which chronic otorrhœa is checked by the family physician, even when carefully treated; and the impossibility of controlling it under the routine advice given to patients of syringing their ears, without being told how to do it.

If the pathology of aural discharges be understood and the rough anatomy of the ear kept well in mind, much of the difficulty which

surrounds this important medical subject can be dispelled, and the successful treatment can be made comparatively easy.

In order to lay down a few simple rules for our guidance in the treatment of otorrhœa, we must recall the fact that the hearing apparatus has three natural divisions. The external ear and passage from the drum-head out is covered by skin, continuous with that of the face, and is therefore a dermic tube, liable to any of the diseases which affect the skin proper. The middle ear, or drum cavity, lying behind the drum-head with mastoid cell appendages, *is a diverticulum from the throat*, and is lined by the universal mucous membrane which faces all cavities of the body having an outlet The susceptibility of mucous membranes to inflammation is enjoyed by the drum cavity in common with all other mucous sacs, and the extensions of inflammations from the throat into this part of the ear is the common cause of ear ache, aural discharge and deafness. The serous tissues of the closed sacs, pass from the brain envelopes, through the aqueducts of the temporal bone into the labarynthine cavities of the inner ear. Thus we have *external* dermic, *middle* mucous, and *inner* serous spaces, all represented in the auditory apparatus, and of these the mucous is by far the most prone to take on suppurative inflammation.

There are three conditions known as otorrhœa or aural discharge, which differ widely in pathological significance. *The first* is an acute form accompanied by severe pain, some external swelling, and a stuffed sensation in the ear, with rapid deterioration of hearing. After a few days and nights of more or less suffering, matter oozes from the ear and the stuffed feeling diminishes. As the symptoms subside, hearing is restored, and the patient soon feels quite well. This condition is known as furuncles, or circumscribed abscesses in the lining of the external passage, identical with boils upon the skin. These will even disappear of their own accord as common experience proves they having run a more or less rapid course. As an evidence of disturbed health in young adults, such painful boils in the ear passages are very prone to recur, following each other at short intervals, often at times in one ear and then in the other. Attention to the general condition of the system, with the use of tonics and liberal diet, will correct this evil even should the ear be ignored; although hot soothing fomentations, more especially when used as an adjunct to free scarification of the swelling, will rapidly expedite a cure.

A second condition of a running ear is called *otitis externa*; a discharge from the skin surface of the external ear passage, accompanied

by much pain, itching, injection, and swelling of the dermic lining. At first the discharge is watery, gradually becoming purulent. When the periosteum, which lies between the skin and the bony tube, is involved, abscesses may form which may eventuate in necrosis of a portion of the bony wall, with fistulous openings, both within the passage and behind the ear near the mastoid region. Although the continuance of these discharges depend much upon the general depression of the system and show a disposition to dry up as the body at large improves, the comfort of the patient is much enhanced by daily local cleansing with warm water and soothing astringent applications. Should a piece of dead bone result from the inflammation, the discharge will continue for months or even years until the dead fragment come away.

When an aural discharge has been of long continuance, the diagnosis of *otitis media* may safely be made, and most frequently a history of acute aural catarrh of the drum cavity, usually called earache, can be traced. Its earliest condition was probably an inflammatory extention from the throat, causing injections and swelling of the lining membrane of the drum cavity, quite enough in these cases to close the eustachian opening which leads directly from the upper part of the throat to the middle or drum cavity of the ear, and makes of the drum a shut sac. The products of inflammation soon fill this small cavity. Then commences the acute pain of internal distension and nerve pressure both upon the promontory or inner wall of the drum space and the drum head. Finally after a few days of feverish excitement and severe suffering in head, neck and throat, the purulent collection bursts through the drum membrane by ulceration, more or less extensive, and the distressing symptoms which accompany the appearance of a discharge from the ear subside. In many cases of acute suppuration of the middle ear, rupture of the drum head brings the same relief as the bursting of the skin in the spontaneous discharge of a whitlow. A rapid disappearance of the mucous congestion may permit the drum cavity to resume its normal conditions. Even the opening in the drum head may in time close by firm and complete cicatrization and hearing be perfectly restored. This consummation often obtained when the drum head is timely incised for the evacuation of the matter is by no means the rule, especially when the case has been allowed to run its own destructive course, without the restraining advantages of judicious treatment.

When such cases finally come under the observation of a specialist he finds a fœtid discharge of long continuance accom-

panied usually with very deficient hearing. An examination of the affected ear, with the speculum in a good light, will nearly always reveal the red exposed congested mucous lining of the drum cavity, as seen through an opening more or less extensive in the drum head. The view can only be obtained after a thorough cleansing of the external meatus by warm water injection. Often in these chronic cases the lining membrane of the eustachian tube, from the throat entrance to its opening in the drum cavity, has thinned to such an extent as to allow again air to pass through the passage from the throat into the ear; and the forcible blowing of the nose may make the ear whistle, a simple and sure means of diagnosing a perforation of the drum head.

In all such cases, the muco-purulent discharge, however copious, is the pathological excretion from the mucous lining of the drum cavity. It must accumulate in the drum before it escapes through the abnormal opening in the drum head, and finally finds its exit at the outer ear. This thick secretion must take some time to traverse this passage of 1½ inches in length. Often 24 hours are consumed before the secretion of one day formed in the depths of the ear can make its appearance at the outer orifice, as the discharge which escapes has to be pushed forward by later formations.

We all know that pus when first formed is a bland, innocuous, taintless fluid, organized like the blood with liquid and solid elements. The floating, fleshy particles, which we call pus cells, under the high temperature of the body 98° must, if retained for many hours become, as putrescent as would blood or flesh after a sufficiently lengthy exposure to a summer's heat. This decomposed fluid, offensive and irritating in its nature, excoriates the surfaces which it overlies, and through a continuous excitation promotes the formation of more matter. The presence of the discharge therefore keeps up the disease; or as we may more tersely put it, the running ear causes the continuous running of the ear. Such are the cases to be found in the practices of every active physician, who often being wearied by their obstinate persistence seeks refuge in advising patients to put up with these diseases as a supposed safe guard against more serious maladies.

In mapping out a course of treatment I will make in the onset a very bold statement which any one can verify, viz: *that cleanliness alone will cure many of these most obstinate cases of otorrhœa*, and that really the question of most importance in the treatment of these disgusting as well as dangerous affections, is how can we obtain this

desirable cleanliness? *Washing with simple warm water will secure it if properly done;* and the mode of doing it when once known is found exceedingly easy.

There is one point which admits of no question, viz : *that an offensive ear is a foul one, regardless of the number of times per day it is syringed*, or the diligent care bestowed upon it by patient or friends. Fœtid pus always means pus some time secreted, and which must have had many hours to metamorphose itself from its primitive bland state to that of an offensive irritating liquid. *If the ear is always allowed to contain fœtid pus it will continue to discharge whether the duration of the disease has already been months or years.*

Successful surgery secures its greatest triumphs in close attention to little things, and the surgeon who wishes good results must see to it that all the detailed arrangements for carrying out his plans are clearly understood by nurse or patient. The aurist cures patients of chronic discharges which have so long baffled the family physician by a course of treatment often identical in its wording with that previously used. Thoroughly syringe your ear with warm water and use a prescription of astringent drops, are the instructions given by both family physician and aurist. The physician believes that he has done his full duty to his patient when he has advised the purchase of a syringe, and has written the prescription. The patient doing as directed, buys a syringe, usually a small glass one because it is cheap, and with such an instrument it is impossible to thoroughly cleanse the ear. Let him with it throw in warm water for ever so long a time, he stlll leaves the drum cavity and the depressed portion of the passage full of thick offensive pus, upon the top of which he now instills a few drops of the astringent solution. Of course, there can be no commingling of these thick and thin liquids. The astringent never comes into contact with the diseased surface, so completely covered with the tenaciously sticking pus, and persistence in the medicated application brings no good results. The aurist gives the same advice and writes the usual zinc and carbolic acid ear drops. But he goes further! He tells his patient to buy only the proper ear syringe that can be worked with one hand alone ; and of these the simple rubber bag is the best. He explains how the other hand must be used to straighten the passage, by drawing the ear upwards, backwards and outwards. Then he shows how the water is to be thrown by the syringe into the ear passage, downwards and inwards which will surely carry the stream into the very drum cavity and thoroughly cleanse it. If after a few syringe fulls of warm water have

been in this way injected into the ear, a bit of raw cotton attached to the end of a match stick be carefully pushed to the very bottom of the ear passage, it will bring out with it no foul odor and should appear free from all stain. After such a proper cleansing, let the drops be applied. Now they are brought into direct contact with the congested membrane, and will do the healing work designed.

The law then becomes imperative, *a clean ear must be the foundation for any treatment intended to arrest chronic discharges.*

As to the local medication necessary, after the thorough cleansing has been obtained, an ear drop consisting of sulph. zinc, grs. iij; carbolic acid, grs. iij to ℥ i aqua is a prescription of general utility, and will cure a large number of cases of running *from the ear.* When the discharge of very long standing does not yield to this application, the zinc may be changed for any one of the mineral salts used for astringent purposes, as alum, borax, chlorate of potash, muriate of ammonia, sulphate of copper or bi-chloride of mercury. In some cases nitrate of silver in solutions of varied strength, from grs. ii and grs. x, to ℥ i of distilled water, will accomplish what the milder astringents failed to do. Even with the caustic solutions, the heroic application of a liquid gradually increasing in strength until it contains as much as 480 grains to the ℥ i. of water, has in a few very rebellious cases proved effective. When nitrate of silver drops are used in the ear, they should be allowed to remain in for only a few minutes, and then washed out by a stream of warm water, otherwise they will trickle down the neck leaving ugly black stains, which will very slowly disappear by the pealing off of the skin. Such marks on the side of the face or external ear indicate carelessness either on the part of the patient, or most frequently on the part of the surgeon.

Of late years desiccating powders have to a considerable extent taken the place of ear drops. When salicylic acid was brought forward as a purifier of great potency I experimented largely with it as a remedy for chronic aural discharges. I used it in powder, mixed one part to three, with oxyd of zinc or calcined magnesia. This powder was blown into the ear, after thorough cleansing of the aural passage, and with a success sufficiently marked to warrant a publication of my experience.

In latter years I have substituted for this powder, alum, which I have found more efficacious than any remedy previously used. By means of it I have cured discharges of fifty years standing in one week, and I now find very few aural discharges, however chronic, that

withstand its proper application. The method employed in using it to secure these good results is, first to thoroughly cleanse the ear, then wipe dry the passage by means of a loose cotton swab attached to the end of a match or special applicator; after which I puff into the ear powdered alum, *filling the drum cavity with it.* The very first application will often indicate a diminished discharge at the end of twenty-four hours. This ear is then washed out and the alum powder again applied. This treatment is renewed *once a day* until the discharge is so reduced that the powder blown into the ear continues dry upon its exposed external surface, not enough secretion being formed to permeate the mass of powder. If the powder has crusted in the ear, it may be left for a few days as a hard mass giving no pain and causing no annoyance. If after a week or ten days interval, the ear has seemingly stopped discharging, the alum powder remaining dry although in a cake, it may be syringed out, as if it were a foreign body. Under these conditions it usually leaves a healthy mucous membrane behind it.

Since powdered alum is so constantly and successfully used by me in aural discharges, I find it convenient to apply it through a puff bottle which expedites much the insufflation, and is far preferable to having it blown into the ear through a quill or pipe stem, or even rubber insufflator. In damp weather, I was formerly annoyed by the caking and lumping of the alum in the bottle which necessitated frequent drying and repulverization. At the suggestion of Dr. W. J. McDowell, I now add to the alum powder a small quantity of lycopodium which when thoroughly triturated with the alum, makes it more volatile and not at all disposed to lump: 5 grains of lycopodium powder to the drachm of alum is ample. In a few cases in which the alum has failed to stop the aural discharge, I have substituted tannic acid with advantage. With the proper use of these two powders, I rarely have need for other local medication in chronic otorrhœa.

In most cases of ear discharges of long continuance especially in children of enfeebled constitution, the general medication with cod liver oil and iron tonics must not be omitted.

In my own practice I have ceased to consider chronic aural discharges an obstinate disease; for under the thorough cleansing and the insufflation with alum or tannin, I find they yield more kindly to treatment than any other bodily affection that has been of long con-

tinuance. One advantage of no small merit in the powder treatment is, that it is incapable of abuse. An excessive application can do no harm.