The Operation for Excision of the Ossicula in Chronic Aural Catarrh with Instance of a Failure.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY

H. V. WÜRDEMANN, M.D.,

OF MILWAUKEE, WIS.

Reprinted from the "Journal of the American Medical Association, October 22, 1892.

CHICAGO:

PUBLISHED AT THE OFFICE OF THE ASSOCIATION.

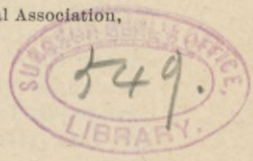
1892.

The Operation for Excision of the Ossicula in Chronic Aural Catarrh with Instance of a Failure.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY
H. V. WÜRDEMANN, M.D.,
OF MILWAUKEE, WIS.

Reprinted from the "Journal of the American Medical Association, October 22, 1892.



CHICAGO:
PUBLISHED AT THE OFFICE OF THE ASSOCIATION.
1892.

THE OPERATION FOR EXCISION OF THE OSSICULA IN CHRONIC AURAL CATARRH WITH INSTANCE OF A FAILURE.

BY H. V. WÜRDEMANN, M.D.,
OF MILWAUKEE, WIS.

Before taking up the subject matter of my paper I would like it to be distinctly understood that I intend casting no aspersions upon aural operative procedures. My standing upon this subject may perhaps be known.[19] I refer more particularly to excision of the ossicles in chronic suppuration and in chronic aural catarrh. I have had marked success both previous to and since the one disastrous result which forms the nucleus of this paper.

Sexton,[14] Burnett,[4 5 6] Colles[7] and others in this country do not mention any bad results, from the operation occurring in their practice. The latest article[9] that I have seen relating to operative interference in chronic aural catarrh says: "With reference to surgical procedure I can truly say that in no case have I seen a bad result follow any of the operations, either immediately or subsequently, and in nearly all cases there has been a certain amount of improvement either in diminishing the tinnitus or in improving the hearing". Most papers go on in this strain and say that while we can never promise in a given case what the amount of improvement will

be, we can promise that the condition will not be aggravated and that the chances for improvement are certainly favorable.[9] This was and is still, my opinion for cases that I accept for operation.

In all the literature of the subject at my command, I can discover but little mention of accidents occurring during or after the operation, and these have all been in suppurative cases. I can find, in only three instances, the admissions of but two operators, of unfavorable results upon the hearing. In 1889 Wetzel[18] reported two cases in which the hearing had been made worse, in the one where the mastoid antrum had been opened during the excision and in the other where the stapes had been interfered with. Yet the latter has occurred in other instances without ill effects and the bonelet has been bodily removed experimentally in animals whose hearing was still preserved.[3]

Reinhard,[11] of Duisborg, in a paper upon Hammer-Amboss-Excision, admits that in only one case in his practice, which however "could not be controlled," was there any malefic effect upon the hearing. In the discussion upon this paper, Schwartze[12] said that neither he nor his associates had, or had heard of a death following the operation and that he had seen no ill effects beyond paralysis of the facialis and vertigo. He claims that the former is the fault of the operator, being produced by injury to the Fallopian canal from the incus hook. This need not happen in operating for proliferous disease as removal of the incus is unnecessary.[15 17] In one case Schwartze[12] had seen vertigo, persisting for over a month, following the operation. I have noticed temporary disturbance of the sense limited to the tongue tip of same side[19] and in a case operated on two months from date of writing, although some relief was experienced from the tinnitus and deafness, there is yet complete absence of this sense in the end of

the tongue on operated side. After operation for non-purulent disease suppuration is a common event as shown by reports of others.[5][14] In the year previous to the date of case reported in this paper I had excised the ossicula in six cases [19] and since that time in five more. Four of these have been for non-suppurative inflammation. In only one instance has suppuration followed. I may add that my cases are carefully chosen according to the rules laid down by Burnett [4] and by Sexton.[14]

One year ago a strong healthy man of sixty consulted me about his ears. He complained of deafness, noises in the head and vertigo for which he sought relief. He claimed that the right ear had discharged, many years ago, and since had been totally deaf on that side. For about five years the left ear had been failing until now conversation was carried on with difficulty. Status præsens:—R.E.,H.D.,loud sounds. Tuning fork of low pitch by aerial conduction. Bone conduction better than on other side. Drum-head retracted with chalk in membrana flaccida. L.E., H.D. Watch p-150, whisper 2 cm., voice 1 ½m. Drum-head retracted and opaque; malleus not freely movable. Eustachian tubes on both sides patulous. Has hypertrophic rhinitis and deviated septum.

I treated the nasal hypertrophy after Bosworth's [2] method and made local applications to the naso-pharynx with marked benefit. Treated the middle ear of both sides by catheter, using camphor iodin and camphor-menthol vapors for three weeks, and followed by the injection of sodium bicarbonate solution for over a week with absolutely no improvement of hearing on either side.

The tinnitus was still about the same, and despairing of improvement by other than surgical means, I suggested an operation. In July following I removed the membrana tympani and malleus under ether anæsthesia. The operation was clean and although several attempts were made to reach the incus it was not obtained. These were made by the incus hook and no reckless gouging was done. Although the anæsthetic was given by a skilled assistant the patient did not take it well, he became cyanotic at times and the progress of the operation had to be delayed. There was excessive vomiting after recovery. When he came to his senses he complained greatly of vertigo. This was ascribed to the after effects of the ether. On testing his hearing on

the evening of the second day I found him so deaf as to only understand shouted words, and upon investigating the cause I was surprised to find that he was *totally deaf on the operated side*. No other reaction followed, until five days later, he had pain at night, and on the next morning an acute otitis media set in which ran its course in two weeks. For four weeks after there was an occasional mucous discharge, the tympanum being dry for days together. All this time the operated ear continued stone deaf. The after treatment for the first few days consisted in "letting bad enough alone," and after the acute attack of inflammation set in, was gentle wiping out of the canal by cotton wet with 3 per cent. boric acid solution. After several days of this a little powdered acid was blown in the ear after cleansing. Internally I gave him drop doses of tincture aconite and later pilocarpin, with no appreciable effect from the latter on the hearing. A couple of months later, when the ear seemed quiet, I commenced the use of galvanism with the result of setting up sufficient irritation in the operated ear to cause an acute discharge. This was tried several times and further treatment of that side given up as a hopeless case. During this period I had been treating the other ear by active and prolonged massage, applied both directly to the malleus by a cotton-tipped probe and by Siegel's otoscope. Also continued inflation by the catheter, etc. To our gratification this ear rapidly improved in hearing until after one month's treatment he could hear the voice at 1½ m.

About this time I sent the patient in consultation to Bishop, of Chicago, who treated him for a couple of weeks, with the idea of helping the hearing on the operated side. Dr. Bishop had better luck than I with electrical treatment, and wrote[1] me that the patient could, at the time of writing, hear the upper notes of the scale. This I observed on his return. The patient was obliged to visit New York, and while there, on the advice of Dr. Bishop, consulted an aurist by whom I understand little encouragement was given. He was placed upon specific treatment later, with no results as regards the deaf ear, which since that time has remained in about the same condition. The noises in the head ceased entirely a few days after the operation and have never returned. The loss of these, however, does not make amends for the loss of hearing. Since that time I have succeeded in bringing up his hearing distance on the non-operated side to voice at two meters.

In regard to the probable lesion after the opera-

tion I would suggest a hæmorrhage in the labyrinth happening during the anæsthesia or during the excessive vomiting thereafter, with subsequent organization of the blood clot. In respect to the advisability of the operation in this particular case, I would state that hereafter I shall not operate upon patients of his age. In a private communication from Colles,[8] of New York, over this case, he raised this objection and wrote that he did not think that the labyrinth was primarily involved and thought that improvement could be expected after cessation of the suppuration. Subsequent observation has not upheld this opinion. Dr. Colles considered sclerosis an unfavorable symptom. Stacke,[16] of Erfurth, also holds this view. On the other hand Sexton,[14] Burnett[6] and Schwartze[12] consider that the advance of progressive sclerosis may be effectually stopped by the procedure. My experience tends to substantiate the latter statement. Randall[10] and Seiss[13] do not consider the operation advisable in chronic aural catarrh.

One lesson from this case is that our prognosis as to the results of excision of the drum-head and malleus must be guarded and the patient must not have rose colored anticipations of the probable amount of benefit to be derived from the operation.

REFERENCES.

1 Bishop, S. S., Personal Communication, July 7, and Nov. 3, 1891.
2 Bosworth, F. H., "Dis. of Nose," p. 145, 1891.
3 Botey, Richard, "Experimental Evulsion of the Stapes in Animals," Trans. 10th Internat. Med. Cong., Berlin, 1890.
4 Burnett, Chas. H., "Deafness, Tinnitus Aurium and Vertigo in Chronic Catarrh of the Middle Ear; Treatment by Excision of the Membrana Tympani and the Two Larger Ossicles." Internat. Clinics, Jan., 1892.
5 Burnett, Chas. H., "Excision of the Membrana Tympani," Jour. Amer. Med. Assoc., xvii, 475-478.
6 Burnett, Chas. H., "Excision of the Membrana Tympani in Chronic Catarrhal Deafness," Med. News, ix, 14.
7 Colles, C. J., "The Treatment of Chronic Purulent Otitis Media by Excision of the Carious Ossicles," Amer. Jour. Med. Scien., May, 1891.
8 Colles, C. J., Personal Communication, Aug. 13, 1891.
9 Dench, E. B., "Some Suggestions concerning the Prognosis and Treatment of Chronic Non-suppurative Inflammation of the Middle Ear," Archiv. Otol., April, 1892.

[10] Randall, B. Alex., "Suppuration of the Tympanic Attic and Perforation in Shrapnell's Membrane," Med. News, Sept. 27, 1890.
[11] Reinhard, C., "Beitrag zur Hammer-amboss-excision," Archiv. fur Ohrenheilk., Marz, 1891.
[12] Schwartze, Discussion on preceding, p. 126.
[13] Seiss, R. W., "Treatment of Inflammation of the Eustachian Tubes," Amer. Jour. Med. Scien., April, 1891.
[14] Sexton, Samuel, "Operation for the Relief of Deafness, Noises in the Head and Ears, and Vertigo due to Chronic Catarrh of the Drum of the Ear," Archives of Otol., April, 1891.
[15] Sexton, Samuel, Discussion in Section of Otol. and Laryngol., 42d Meeting Amer. Med. Assoc.
[16] Stacke, "Indications for Excision of Hammer and Anvil," Archiv. für Ohrenheilkunde, xxi, 201.
[17] Turnbull, Laurence, "Progress of Otol.," Annals Ophth. and Otol., April, 1892.
[18] Wetzel, "Die Excision d. Trommelfells u. d. beiden ausseren Gehorknochelchen," Halle, 1889.
[19] Würdemann, H. V., "The Treatment of Chronic Suppuration in the Middle Ear by removal of Carious Ossicles, Necrosed Bone and other Obstructions in the Tympanum," Med. Progress, July, 1891.

Discussion.

Dr. Randall said that the excision was done for two conditions so unrelated, that the suppurative and non-suppurative cases should be decidedly separated in discussion. His experiences in catarrhal cases had not been satisfactory—one of his cases, with no gain in hearing, having gone on to severe suppuration with mastoid empyema, burrowing to the neck and occiput, and life was saved by a hair's breadth. Gelle's test for stapes ankylosis often seemed the criterion in deciding between excision and stapes mobilization. In suppurative cases he was slow to operate, since most of the forty instances of attic disease with Shrapnell perforation, often with superficial cases seen in the last year, as in previous experiences, had improved so rapidly as to admit no question of operation. Done only in the most urgent and severe cases, the excision of the carious ossicles had proved disappointing. No instance of harm had occurred; nor a single brilliant result; the drainage had often not been specially improved as evidenced by the formation of new sinuses. In every case in which he had excised for caries, he regretted that he not done the more radical operation of Stacke, removing, as Walb puts it, the *bony* as well as the membranous outer wall of the tympanum. Thus only can the attic-caries be freely exposed to operative or other treatment. As to the operation in both forms of cases, the German experience was certainly much longer and larger than any on this side of the Atlantic, since Voltolini, Lucae, Hessler and Schwartze had each, probably, double the number of operations of Sexton or any other American.

Macluen Smith, Philadelphia:—Age has not in my hands

had any influence in the result of the operation, and yet we must certainly expect better results from the more recent cases.

The youngest case was a child six years of age suppurative in character. The eldest was a gentleman of seventy-two years (non-suppurative) with distressing "menieres symptoms" for twenty-six years. This case was not for sixteen years, able to leave his chair or bed without the assistance of an attendant. This case was operated on left ear three years since, which markedly reduced his symptoms; the right ear was operated on one year ago, since which time the patient is entirely relieved of vertigo and tinnitus, with sufficient restoration of hearing to enable him to appreciate most ordinary conversation, with continued improvement of hearing. We must, of course, look for and expect better results from the suppurative cases and I would consider it the surgeon's duty to give his patient the benefit of such surgical procedure, and thus reduce to a minimum the danger of mastoid and cerebral complications by allowing such pathological conditions to continue.

Dr. Richardson stated as this appeared to be an experience meeting he thought it wise for each to give his personal results. He had operated several times in these cases, but most of his work, like that of others present, had been for chronic suppurative cases, rather than the chronic catarrhal. In all he had done ten operations, eight for suppurative and two for non-suppurative catarrh. His six cases have already been reported, the other four are of too recent date to give results. An analysis of cases followed. In concluding he stated that he thought in many cases of disease of the attic, with involvement of the osseous wall and probable implication of the mastoid antrum he would prefer Stacke's operation to the present operation.

Dr. Seiss has not operated in catarrhal cases, and would not at present feel justified in doing so. In suppurative cases regard the operation as a distinct addition to aural surgery. Depends mainly upon mobilization of the ossicles to relieve hopeless sclerotic deafness—a long incision being made posterior to the malleus and traction made on the incudo-stapedial joint. Otherwise, incurable tinnitus may be almost invariably relieved by the speaker's method of freezing the mastoid. Ether, ethyolene, or chloride of ethyl may be used, are free from injurious results, and are most satisfactory in many cases, acting as a cure in a few cases.

Dr. Seth S. Bishop, of Chicago, said:—I have never hesitated to remove the drum head and ossicles when it was necessary to cure suppurative inflammation. But in the

class of cases mentioned by Drs. Burnett and Würdemann, my opinion as to our duty is not so clearly defined. I have been loth to operate for several reasons.

In order to collect statistical information on the subject, a year or two ago, through the medium of the medical journals, I invited all American aurists who had performed this operation to communicate to me the outcome of their experience. Such a small number responded, and the results given were so unsatisfactory, that I was forced to the conclusion that either very few had operated, or the results were not of a nature to encourage the operators to report them.

I have opened the drum several hundred times. A number of years ago I reported the results of 30 cases I had operated upon. I had removed either the whole of the drum head or parts of it for the relief of tinnitis aurium and chronic progressive deafness attributable to non-suppurative inflammation. Many cases are benefited to a very satisfactory degree. I met one of those referred to a few days since, an operator on the board of trade, who says now that the operation was a benefit to him.

In another case in which I removed both drum heads, one remained well open, after a partial regeneration of the membrane, for a year and a half with satisfactory results as long as the patient remained under observation. After removing the other drum head there was a slight muco-purulent discharge. While this continued the hearing was much improved. After this discharge ceased the hearing distance diminished. The patient insisted that if the middle ear was kept moist he would hear better. I filled the ear with simple vaseline, and at the expiration of a week the drum head was found reproduced. Other cases were only slightly benefited, and some not at all.

Now it is a reasonable inference that if this opening of the drum head benefits a patient, a complete and permanent removal of it will make the improvement permanent. If the mallet is not removed the drum head will probably be reproduced, and it may be even after the ossicles are extractep. I would suggest the minor operation of removing a section of the membrane as a preliminary test. If this is followed by considerable improvement, then I would resort to the more radical operation. This much can be said in favor of the test operation: the removal of a section of the drum head is not followed by any disastrous consequences.

These observations are all based upon the supposition that the labyrinth is not involved in the disease. Should there be sclerosis, atrophy or paralysis of the auditory nerve, of

course an operation to improve hearing is out of the question. But if the only trouble is that sound waves cannot reach the round window and foot plate of the stirrup because of the barrier interposed by the immovable ossicles and membrane, then an operation is a logical and promising procedure.

The case of failure reported by honest Dr. Würdemann, and for which report we owe him our acknowledgements, I have seen several times through his courtesy. A few weeks ago as this case was passing through Chicago, I made an examination and found that the right ear which had been nearly useless to him for many years, had been improving until he could hear loud conversation without the conversation tube. This ear had been treated but not operated upon. The operated ear remained useless for conversation, but he could hear me whistle all the tones except two of the scale from middle C upward one octave, through the tube. He could also repeat after me nearly all of the vowel sounds. The discharge had nearly ceased.

I may add, however, that nearly a duplicate of this case has recently come under my observation. Before the operation the patient said he heard his watch 2½ inches. A New York aurist removed the drum head, mallet and part of the anvil. The tinnitis was not relieved. He is totally deaf and has a purulent discharge from the ear.

Such cases are discouraging. In my opinion we should perform this operation only in such cases as I have described, after a preliminary test opening of the drum head, and giving the patient the benefit of any reasonable doubt.

Dr. Burnett said:—An accident following incision of the membrana and the auditory ossicula, was largely, if not entirely due to rough manipulation. Disturbances in taste after the operation is evanescent. When it has been disturbed in chronic suppuration before the operation, the sense of taste has improved after the operation.

Gelle's test for ankylosis of the stapes is not necessary in chronic catarrh if any hearing is present, as hearing would prove that the stapes is not entirely ankylosed. Even if ankylosis of stapes were to exist, this should not prohibit the operation of excision in aural vertigo and severe tinnitus. Stacke's operation, or Arbuthnot Lane's operation is a mastoid operation and not to be compared with excision of the membrana and ossicles in attic suppuration. If excision is performed promptly in attic suppuration there would be much less need for mastoid operations.

Dr. Würdemann, of Milwaukee, in closing the discussion:—Young men, as a rule, are apt to take up these new opera-

tions which are so highly advocated. I presume that I am no exception to the rule, but in regard to these chronic suppurative cases with necrosis of the ossicles coming to me (generally they are "rounders") I am disposed, after cleansing and antiseptic treatment has been tried, to urge an operation. Gentlemen, I get tired of treating these cases after a few weeks. In chronic aural catarrh I believe we should be conservative and choose our cases. My experience in non-suppurative disease is limited to four cases. In one total deafness followed the operation, as reported in this paper. In the second, a negative result; in the third, the tinnitus and deafness were markedly relieved, and in the fourth the results are not yet fully developed. In this last case I have been obliged to do two secondary operations on account of regeneration of the drum-head again diminishing the hearing.