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Title pages

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PART I.

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XXIII. *Farther Observations on the Effects which take Place from the Destruction of the Membrana Tympani of the Ear; with an Account of an Operation for the Removal of a particular Species of Deafness.* By Mr. Astley Cooper. Communicated by Everard Home, Esq. F. R. S.

Destruction of the Membrana Tympani.

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CASE 1. A woman about thirty-six years of age consulted me, in December last, respecting some disorder in her child. In attempting to converse with her, I found her so extremely deaf that it was with difficulty I could make her hear me. Questioning her upon the subject of her deafness, she informed me that she had been thus afflicted since the year 1793; and I found that it had arisen from the tonsil glands becoming enlarged by a cold, which she caught in the winter of that year. As she was anxious to be relieved, I immediately punctured the membrane of the left ear, being that in which the hearing was most defective. The operation was no sooner performed, than, to my great joy, and of course to hers, I found that, in that ear, she could hear what I said to her, without any particular exertion on my part to speak loud. She staid with me about half an hour; and, when she left me, was capable of hearing every thing that was said in the ordinary tone of conversation.

CASE 2. ANN DALEY was admitted under my care, in GUY'S Hospital, on the 21st of January, 1801. She was so deaf that, unless words were spoken close to her ear, it was impossible to make her hear them. She had been thus far deprived of hearing for the space of six weeks; and the deafness had been occasioned by some ulcers which had existed in the fauces. On the 25th of January, four days after her admission into the hospital, I punctured the membrana tympani of the left ear; having previously taken care (the better to ascertain the effects of the operation) to hold a watch to the ear of the patient, the beating of

which she could not distinguish, unless it was pressed against her head. After the operation, I instantly repeated that experiment, and found that, with the ear I had punctured, she could distinctly hear the watch, though it was held at the distance of several feet; whereas, with the opposite ear, she was still unable to hear it beat, unless, as before, it was pressed against her head. Mr. STOCKER, apothecary to the hospital, witnessed the effects of this operation.

On the 28th of the same month, I performed the same operation on her right ear, in the presence of several medical gentlemen, who satisfied themselves as to the cause and degree of her deafness; the ear upon which I first operated having been purposely closed. As soon as the puncture was made, the trial with the watch was again resorted to; and she could hear it beat at the same distance as with the other ear; and could hear us speak, in the common tone of voice, as distinctly as we could hear one another.

To ascertain with certainty whether she really heard the beating of the watch, I placed it at a considerable distance from her, and asked her if she still heard it. To which she answered, "Yes, perfectly." I then stopped the watch, without her knowing it; and, the question being repeated, she listened for a while, then said, "I must have been deceived, I do not hear it:" but, the moment I set it again in motion, she called out, "I hear it now, and as well as I ever did in my life." In this state her hearing continues; the deafness having never, at any time, returned.

The cause of this deafness was obviously in the throat. The disease had not existed sufficiently long to produce any other derangement in the ear; and the good effect of the operation

was therefore so immediately apparent, that it could not be doubted by the most sceptical observer.

CASE 3. Mr. ROUND, of Colchester, consulted Dr. BAILLIE respecting his son, Mr. JOHN ROUND, aged 17, who had laboured, from his birth, under such a degree of deafness as would have incapacitated him from engaging in business. Dr. BAILLIE, having satisfied himself that there was no nervous defect in the ear, referred him to me. I found that this gentleman had been born with an imperfect state of the fauces, which rendered him incapable of blowing his nose; that the Eustachian tubes had no openings into the throat, and, therefore, that he was unable to force air from the mouth into the ear. The auditory nerves, however, were perfect; for he could distinctly hear the beating of a watch, if placed between the teeth, or against the side of the head; and he never had perceived any buzzing noise in his ears. I therefore advised him to submit to the operation of perforating the membrana tympani; to which he cheerfully consented. The moment this was done, a new world was opened to him; and the confusion produced by the number of sounds which immediately struck his ear, made him sink upon a chair, almost in a fainting state. From this state he recovered in about two minutes; and, finding that his hearing was completely restored upon the one side, he wished the operation to be performed upon the other; which was immediately done, with the same happy result, and without his experiencing the same confused sensation as before.

Near two months after the operation, I had the pleasure to receive an assurance from him, that he had suffered no relapse, nor any inconvenience from the opening which I had made, and that his hearing continued perfect.

CASE 4. Mr. BRANDON, of Upper Clapton, sent a person to me in January last, who had received a blow upon his head, which had occasioned symptoms of concussion of the brain, and was attended with a discharge of blood from each ear. From the effects which the blow had occasioned on the brain, he speedily recovered; but the deafness, which had immediately followed from the accident, continued. I cleared the meatus from the blood it contained, without any relief being derived to the patient; and, suspecting that a quantity of blood was lodged in the tympanum, and the vibration of the membrane thus prevented, I some days after punctured the membrana tympani. Upon withdrawing the instrument, some dark-coloured blood appeared on its point; and, whenever I examined his ear afterwards, there was the same appearance of blood mixed with the wax of the ear, which continued to discharge for about ten days after the operation, during which period the hearing was gradually restored. I have formerly known instances of permanent deafness from this cause; and I think it not improbable that the blood thus effused has become organised, and continued to fill the cavity of the tympanum.

EXPLANATION OF THE FIGURES. SEE PLATE XXXIII.

Fig. 1. Shews the external ear, the meatus auditorius, membrana tympani, and Eustachian tube.

A, The meatus.

B, The membrana tympani.

C, The cavity of the tympanum.

D, The Eustachian tube.

Fig. 2. Shews the perforating instrument, as it is introduced in the operation.

Fig. 3. The membrana tympani of Mr. G——, of which only that part which appears of a lighter colour remains.

Fig. 4. The membrane lacerated by a blow.

Fig. 5. The membrane lacerated in an attempt to extract a pin.

Fig. 6. Shews the membrana tympani of a medical man in the city, having a fungus projecting through it: in this ear, he is considerably deaf.

Fig. 7. The other membrane of the same gentleman.

Fig. 8. One of the membranes of Mr. P——, whose case I described in my former Paper.

Fig. 9. A membrana tympani in its natural state, shewing the attachment of the manubrium of the malleus.

Fig. 10. The appearance of the membrane after having been punctured.

