

what bulged outwards, and the hearing is more or less impaired. In most cases the throat is sore and the pharynx deeply congested. Usually in this disease pain is the first symptom complained of; but previous to its setting in the patient may have been aware of a certain fullness in the ears, with slight dullness of hearing, and perhaps a certain stiffness about the muscles of the throat. The pain may vary very much in different persons; in some cases I have seen the disease go on to suppuration, without being severe enough to prevent the patient from attending to his business; while in others (usually those of a nervous temperament) the pain has become so severe in a few hours as to cause even a strong man to cry like a child. Fever is a prominent symptom in this disease, and the temperature may rise above one hundred degrees, (100.)

CAUSES.—Among the causes of this disease may be mentioned cold, the introduction of water into the external meatus while swimming (especially salt water), coryza, small-pox, scarlet fever and measles, the accidental introduction of water into the middle ear by the use of the nasal douche or other means.

In the treatment of this severe form of inflammation we have first to relieve the pain, reduce fever, and, if possible, prevent the extension of the disease to that more severe type, acute suppuration of the middle ear, with spontaneous perforation of the membrana tympani.

For the relief of pain, especially in children, perhaps no remedy will give more relief than a continuous stream of (not warm water), but water just as hot as can be introduced into the meatus without scalding the patient. The best method of introducing the water is by means of an aural douche. A syphon formed by a piece of small elastic tubing will answer the purpose very well.

Should the injection of hot water and the administration of a full dose of morphia prove insufficient to give relief we must then have recourse to the local abstraction of blood. This may be accomplished by leeches applied to the tragus, or by Hortloupe's artificial leech. But the treatment which, in my hands, has proved the most successful and satisfactory is paracentesis of the membrana tympani.

Therefore, in every case of acute inflammation of the middle ear, in which the pain does not immediately yield to hot water and a full dose of morphia, say  $\frac{1}{3}$  to  $\frac{1}{2}$  a gr., for an adult, and

where the membrane is red, swollen and prominent, I consider it but loss of time to employ other means for the abstraction of blood,—I at once puncture the membrane.

A case which will not yield to the above-named remedies, will, in all probability, cause spontaneous rupture of the membrane. Why not anticipate this by a neat puncture? It will at once relieve the tension of the parts, by the flow of blood from the membrane, and the escape of mucous or other fluids from the tympanic cavity.

The pain experienced during the operation is trifling, and the relief almost instantaneous. The bleeding should be encouraged by the warm water douche, which may be used from time to time, should there be any recurrence of the pain. And here let me remark, that I do not approve of the application of poultices, which are so commonly used in these cases. The chief thing to be dreaded in these acute cases is the formation of pus, and I have no hesitation in saying that they are almost sure to bring this about. Poultices should only be used as a "dernier resort," and, when used, they should be small enough to be introduced some distance into the meatus. If there is tenderness over the mastoid process a poultice may be placed over it, too, but it should never be placed over the auricle, as it is apt to produce painful swelling in that region.

The following cases, the result of causes before mentioned, will illustrate the beneficial results of an early puncture of the membrana tympani: 1st From Cold.—C. B, æt 27, went for a long drive during the afternoon, and, as the day was mild, he substituted a felt hat for the fur cap he had been previously wearing. During the following night he experienced the most excruciating pain in the right ear, for which he dropped warm laudanum into the ear. This gave him very little relief, and he was unable to sleep during the remainder of the night. In the morning, when he consulted me, he was still suffering so as to scarcely be able to keep quiet, while I examined the ear. I found the membrana tympani very red, swollen, and bulging outwards. For treatment I used Politzer's bag, and finding that there was no perceptible change in the shape of the membrane I immediately perforated it in the lower posterior segment, close to the handle of the malleus. The pain was somewhat increased at the moment the puncture was made, but, after the escape of a few drops of blood and mucus, the pain was almost instantaneously re-