

factory when the case is still in the early stage, and when no great damage of the aural mechanism or marked impairment of the function yet exists.

We know that an acute cold in the head may so far affect the hearing as to render the individual quite deaf.

I submit that all chronic conditions of catarrh of the nose or naso-pharynx, whether associated or not with more solid obstructive conditions of the nasal cavities, slowly but surely affect the tympanic cavity. The diminished supply of air to the tympanic cavity is quite sufficient to account for all the pathological conditions and symptoms found in this form of middle-ear disease.

*Treatment.*—Generally speaking, I have nothing to suggest to you that is new in treatment, except the fact that a great many cases of what I would call latent obstruction to the nose are missed because examined when the patient is up and about, and gravity has reduced the swollen condition of the interior, rendering the nose patent by day, but leaving it obstructed when the individual is in the horizontal position.

I would specially to-day urge upon you the importance of an early recognition of this affection, of a more frequent examination of the hearing of those subject to chronic catarrh of the upper respiratory tract. We are all painfully cognisant of our inability to cure or even relieve more than a small proportion of the more advanced cases, and we are equally conscious of the fact that the earlier stages of this affection are more amenable to treatment, and in such cases we are more hopeful of a marked degree of improvement.

Future progress in the treatment of this affection is not to be looked for in punctures and operations on the drum-head and in cleverly devised expedients to circumvent the inevitable. It is by the early recognition of this affection, when a nasal wash and a Politzer's bag will go a long way in restoring the patient to health and comfort.

---

## ETHYL CHLORIDE AS A GENERAL ANÆSTHETIC IN NASAL SURGERY.

BY JOHN MACKIE, L.R.C.P. ED.

IN intranasal surgery, such as operations on the turbinals and sinuses, the question of an anæsthetic is often a pressing one. Cocaine, though invaluable when only the mucous membrane and subjacent parts have to be dealt with, is not so satisfactory when the deeper structures are involved. Gas is unsatisfactory, from

the shortness of the anæsthesia, as also from the tendency to struggling under its use.

Chloroform and ether, on the other hand, while they introduce an element of dread into the minds of our patients, cannot well be used in the upright position, a matter certainly of inconvenience to the operator.

Some five months ago I had my attention drawn to chloride of ethyl as a general anæsthetic, and at once put it on trial. I have had it in use ever since, and find that it has greatly simplified and facilitated my work in nasal surgery. In operations on the turbinals and sinuses, I find that I have used it twenty-seven times, four times in adenoids, twice in septal deformity. In addition, I have given it for dentists and general surgeons fifteen times, making in all forty-eight administrations. In no case have I had the slightest anxiety or seen one dangerous symptom. In one or two cases, notably in one full-blown alcoholic, I found the administration rather expensive, from the amount of the drug required, while in a few of my earlier cases, I expect from my dread of giving an overdose, the anæsthesia was shorter than was convenient.

The mode of administration which I have found most satisfactory is to press the mask well over the face so as to exclude all air, and to give the drug briskly and continuously, taking care to send the spray right into the gauze in the ball of the inhaler. For a short operation, such as the curetting of the anterior ethmoidal cells, I have found from a half to three-quarters of a minute of this brisk administration sufficient. This will give an anæsthesia of from two to three minutes. For longer operations it may be pushed considerably beyond this. The action of the drug is so energetic that there is some difficulty in being sure as to the extent of the anæsthesia, but by quickly removing the mask and testing the conjunctival reflex I have generally been able to satisfy myself as to this. From the local action of ethyl chloride in the nasal passages anæmia is produced, and we have practically a bloodless operation. This is a decided advantage. The anæmia, however, soon passes off, and violent hæmorrhage may ensue, and if you have allowed your patient to leave you without providing for this by plugging, you may meet with unpleasant results.

From my experience of ethyl chloride, or, as its purified form is named, "kelene," I should say that, while it is certain to find a place in surgery generally, in nasal work it will prove of inestimable advantage, not only as a convenience for the surgeon, but as a safe and almost pleasant means of enabling a patient to undergo what otherwise must be a very trying ordeal.