was the primary place, were caused by chronic middle-ear suppuration, and most frequently by cholesteatomatous inflammation.

This leads naturally to the idea that also in cases where no thrombus is found by operation there is a formation of clot in the bulb. The fact that a majority of my cases of this class were of a more benign form speaks apparently against this theory, as the thrombophlebitis of the jugular bulb is frequently of a more malign character. I have, however, observed several cases of evident thrombosis of the bulb take a very favourable course.

According to my personal experience I am, therefore, inclined to take up the position that *the otogenic sepsis is a pathogenic unity, which—perhaps with a very few exceptions—is caused by a thrombophlebitis of the sigmoid sinus, or of the bulb, or of both united.* This position leads to sequences of practical significance as to the operation treatment, as I hope to have the opportunity of pointing out later.

CHOANAL POLYPUS.

By W. S. Syme, M.D., F.R.S.E.

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It has seemed to the writer that a more extended experience of these growths renders it necessary for us to reconsider certain views which have been accepted concerning the method of their production and the signs associated with them.

It was formerly held—I do not know if it is still held—that for their production an accessory antro-nasal ostium situated posteriorly to the usual ostium is necessary; or, in other words, that the pedicle of the polypus can be traced through an accessory ostium to its origin in the lining of the antrum. There is no doubt, of course, that in some cases such an accessory opening has been found, and one can readily understand that an opening in the recess formed by the posterior wall of the antrum with the antro-nasal wall would be a very convenient exit for a polypoidal thickening of the lining membrane in this region, a frequent site, moreover, for this diseased condition. In the majority of cases, however, no such accessory opening exists. The polypus arises in the neighbourhood of the ordinary ostium, enlarged, it may be, and finds its way through it to the middle meatus where the configuration of this passage, the air current, and the effect of gravity

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in the lying position determine its gradual passage to the posterior naris. Here it attains its usual, but not invariable, spherical shape.

Every polypus which, arising in the antrum, passes into the middle meatus, does not, of course, find its way to the posterior naris, or, stated differently, all antro-nasal polypi are not antro-choanal. It is not unusual to find antro-choanal polypi associated with antro-nasal polypi. Two very good instances of this association have just come under my observation. In one case, a girl of twelve, a polypus had been removed, not by a specialist, on several occasions from the left nostril. When seen, the left posterior naris was obstructed by a very good specimen of choanal polypus, and there were small polypi in the anterior part of the middle meatus. The antrum was operated on by way of the canine fossæ. The choanal and nasal polypi were found to arise from one stem which had its origin on the antral side of the ordinary ostium. In the second case, that of a woman, polypi had also been removed on several occasions from the nostril, the right. Polypi were found in the anterior part of the nose, and there was also a distinct choanal polypus. On lavage, a clear straw-coloured fluid was evacuated from the right antrum. (The presence of such a fluid is not confined to antro-choanal polypi, however). The polypi were removed, four in number, and each with a long thin pedicle. The antro-nasal ostium, very large in size, was then seen. There appeared to be complete absence of the membrane closing the nasal side of the maxilla, an anomaly which I do not remember to have observed or seen reported before. It was possible to look, without difficulty, into the antral cavity, the glistening posterior wall being distinctly seen. The antrum was opened by the canine route. Further degenerated lining membrane was found, but it was easy to demonstrate the position on the antral side of the lower border of the large ostium from which the polypi had sprung.

All choanal polypi are not antro-choanal. This, of course, is not an original observation. There is no reason why a choanal polypus should not take its origin from any of the accessory cavities, especially from those of the posterior group. At one of the meetings of the Scottish Otological and Laryngological Society I showed a specimen of spheno-choanal polypus which was traced to its origin just on the inner side of the edge of the sphenoidal ostium. By the way, though I have not infrequently removed actual polypi from the sphenoidal sinus, it has been my experience that their presence in the sphenoidal sinus is not nearly so common

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as in disease of the maxillary antrum. No doubt the structure of the lining membrane of the sinus accounts for this, as it does for the proportionately less discharge found in this cavity in cases of sphenoidal sinus disease.

Another accepted view with regard to antro-choanal polypus with which I find myself in disagreement is that in most instances evidence of antral disease is absent. In most of my cases, certainly, lavage has given a positive result. It is, of course, conceivable that the change in the antral lining membrane may be limited to the site from which the thin pedicle of the polypus arises, as it is also possible that what is taken to be an antro-choanal polypus is in reality an ethmoido-choanal polypus. One might, I think, go the length of stating that almost invariably, sooner or later, lavage of a sinus from which an antro-choanal polypus has had its origin will give a definitely positive result. Transillumination in this as in what is commonly understood as antral disease, is of very minor value. It is really a question of degree of change in the lining membrane. I have operated on antral cavities associated with antro-choanal polypi which showed changes in the lining membrane varying in degree from that limited to the neighbourhood of the opening into the nose up to complete polypoidal degeneration. Removal of the choanal polypus may or may not be followed later by return of a choanal polypus. In most cases, at any rate, the actual antral disease will manifest itself and require treatment. It is, therefore, a sound rule that antro-choanal polypus should be treated by operation on the antral cavity by way of the canine fossa.

Perhaps I may here be permitted to describe the technique for local anæsthesia which I make use of in operating on the maxillary sinus. Apart from dispensing with general anæsthesia it has the advantage that the operation is almost bloodless and a careful inspection of the antral cavity is easily made, and, moreover, the operation takes much less time. The sinus is washed out by way of the inferior meatus, and then dried in the usual way by means of the air bag. Twenty minims of a 15 or 20 per cent. solution of cocaine, with the addition of 6 or 7 minims of 1 in 1000 adrenalin solution are then injected through the canula by a hypodermic syringe and a little air blown in to spread the solution over the lining membrane. The anterior part of the inferior turbinate and inferior meatus is anæsthetised by means of pledgets of cotton wool soaked in the same solution. The region of the canine fossa is then anæsthetised. For this purpose I formerly used alypin or

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Novocaine in 2 per cent. solution in normal saline with the addition of adrenalin. Lately I have used 1 per cent. cocaine. The mucous membrane and soft structures are injected and the injection should be carried down to the bone. In nervous patients a hypodermic injection of morphia, omnopon, or some such drug is sometimes given an hour or half an hour before, but it has been noticed that it tends to cause sickness during or after the operation. Even when it is decided to use general anæsthesia I am in the habit of treating the nose and antral cavity in the way just described, though I refrain from the injection in the canine region. We are all in the habit of combining the local application of cocaine and adrenalin to the nasal mucous membrane with general anæsthesia, so that there does not appear to be more danger in injecting them into the antrum, which is only a local application. Injection under the mucous membrane is in another category and is probably not without danger when combined with general anæsthesia.

CLINICAL NOTES.

A CASE OF HERPES ZOSTER OTICUS.

By Captain Archer Ryland, F.R.C.S.E., R.A.M.C.

The following notes are those of a case of herpes zoster oticus, admitted to the Cambridge Hospital, Aldershot, on June 8th, 1916.

The patient made the following complaints with regard to his condition:

1. Pain inside the left ear.
2. Aching pain and swelling of the left ear itself.
3. Slight deafness in the left ear, but no discharge.
4. Weakness of the left side of the face.
5. A sore feeling down the left side of the throat, and pain on swallowing.
6. Weakness and watering of the left eye.
7. Giddiness. Objects seemed to him to be rotating from his left to his right.

As the result of a careful interrogation it was elicited from the patient that the seizure started with a "cold in the head," and that the symptoms followed one another in rapid succession, appearing actually in the following order:

1. Pain at the left side of the throat.
2. Pain and throbbing inside the ear.
3. Burning pain, swelling, œdema, and livid discoloration of the pinna.
4. Appearance of herpetic vesicles on the floor and posterior wall of the left cartilaginous meatus.

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