CLINICAL NOTE

ANTROSCOPY

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ANTROSCOPY is a method which allows the inside of Highmore's antrum to be seen through a specially constructed instrument called Stout's antroscope. This consists of a metal trocar and mandril, plus an electric endoscope to be passed through the trocar once the mandril has been removed. An electric battery is also provided.

Pilling & Son in Philadelphia, Pa., U.S.A. make a very good instrument with a splendid optical system which gives a perfect view of the inside of the antrum.

The instrument is used exactly in the same way as when a puncture of the antrum is performed *viâ* the inferior meatus.

As an anæsthetic, a strong solution of cocaine should be used, painting not only the inferior meatus but also the head of the inferior turbinate. As the instrument is a little thicker than the ordinary puncture trocar, it is necessary, now and then to have to break the inferior turbinate towards the middle line, so as to allow the trocar to pass into the inferior meatus.

The antrum should not be washed out before antroscopy, because it is very difficult to blow out every single drop of fluid, thus air bubbles remain which distort the usual picture and may lead to misinterpretation.

This method is recommended in those cases in which transillumination and X-rays do not agree. For instance when transillumination seems normal and X-ray pictures show the presence of a thickened mucous membrane and especially show the presence of polypi. Or the contrary case. It is also recommended when the two above methods agree as to the cloudiness of the antrum, but there is no pus nor drainage of any kind. Obvious sinus suppurations need not be submitted to such a method unless one wishes to examine the mucous membrane just for scientific satisfaction.

The optical system situated laterally, near the tip of the instrument, allows a wide circular fringe of the antrum to be inspected. The further the visualized object the larger it looks, up to the distance of about 2 centimetres. Near details may look small, but any way very much larger than what they really are. One learns how to gauge sizes by examining antra in cadavers.

If we consider the antrum cavity as having a pyramidal form, three walls, angles and triangles will have to be taken into consideration. The base of the pyramid is formed by the lateral nasal wall, and here we will always see the ostium maxillaris. Its form and size are always different but always to be seen. Figs. 1 and 2 show the aspect of two normal ostia, one in a cadaver and Fig. 2 the one of a healthy sinus.

It may happen that the mucous membrane is only very slightly swollen and the instrument, on entering the sinus and going through the bony wall,

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may tear the mucous membrane and part of this tear cover the ostium. If this is suspected, the instrument has to be pushed slightly further in. Under the said circumstances, the mucous membrane may also bleed, this soils the optical part of the instrument and the blood accumulates in the lower triangle or alveolar recess and spoils part of the circular picture to be inspected. If the antrum has been washed out, air bubbles are to be seen in the lower part or alveolar recess, as can be seen in Fig. 3.

The tip of the pyramid is the malar recess, which can always be seen very well. Sometimes it will appear as can be seen in Fig. 4, which was the case of a normal cadaver antrum, other times as it appears in Figs. 5 and 6. No. 5 is a case in which the malar recess is surrounded by a number of polypi, the round contour of which was beautiful to see. No. 6 was a normal case which had a tear of the mucous membrane, showing that what was taken for normal was really a slightly swollen membrane, gauged because of its colour and comparison with the depth of the malar recess.

The alveolar recess, when normal is to be seen as several cavities, two or more recesses. In pathologic cases of polypi, we may have pictures such as in Figs. 7, 8, 9 and 10. No. 7 shows a very large polyp on the left hand side, an upper normal piece of mucous membrane and a long tear of the thickened mucous membrane of the inner wall of the antrum. No. 8 shows a beautiful polyp with its vessels, hanging from the orbital wall of the antrum. No. 9 shows three tightly packed polypi. No. 10 shows two hanging polypi.

Other pictures can be had such as Figs, 11 and 12 which show very thickened mucous membranes, sloughy, covered with thick pus.

As for the colours to be seen they vary quite a lot. The normal colour of a healthy antrum is yellowish, because this is the colour of the underlying bone. The mucous membrane is very thin, like tissue paper. Tiny blood vessels can be seen running in different directions. The moment inflammation starts, then the membrane turns red, blood vessels are not to be seen and the whole picture has a dark red colour. Polypi have a gray tint, very different to the surrounding mucous membrane. It is very difficult to mistake a polyp for something else, it is so very characteristic.

No mishaps have ever been met with, though many cases have been examined. Pain after the operation is very slight. We have never had a hæmorrhage.

Summarizing: Antroscopy is a very useful, easy and not dangerous method of examining the interior of Highmore's antrum

Pictures were taken from my assistant Mr. B. Goeck's Thesis for graduation.

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