ON ETHMOIDAL ABSCESS.[1]

BY WILLIAM LAMB, M.D., M.R.C.P.

FROM a practical point of view ethmoidal abscesses may—as far as my experience goes—be divided into two groups :

1. Those in which the abscess forms a swelling which bulges into the nose.
2. Those in which there is no visible swelling in the nose.

Cases belonging to the first group rarely come under observation in the early stages. Usually when first seen the nasal swelling is very marked, and appears as a smooth rounded tumour of firm consistence bulging downwards and forwards in the nostril, and blocking its lumen more or less completely. This swelling is formed either of the middle turbinal, or the bulla, or some other ethmoidal cell, greatly dilated and distended with pus. If the case be of considerable duration—as most of them are before we see them—there will usually also be bulging of the inner wall of the orbit, with some displacement of the eyeball and consequent disturbance of vision; and if left to itself the abscess will point and burst in this region, rupturing either into the tear passages (lachrymal sac) or through the skin near the inner canthus, towards the upper and inner angle of the orbit.

The symptoms complained of in these cases are mostly ocular, especially double vision, and the patients naturally seek relief at the hands of the ophthalmic surgeon. Nearly all my best cases of ethmoidal abscess have come to me from ophthalmic *confrères*, with the request that I would "see if there was anything wrong in the nose."

I have said that these abscess cavities are formed by dilatation of the middle turbinal, or the bulla, or some other ethmoidal cell; but I must add that it is rarely possible to say which of these structures is at fault, owing to the advanced stage at which cases come under observation. The nostril is usually found nearly completely blocked by a dilated bone-cyst, which is firmly adherent both to the septum and the outer wall of the nose. I suspect that the middle turbinal is the most frequent starting-point, but I have never seen a case at a stage when it was possible to differentiate with certainty; and after operation I have never been able to find any trace of a compressed and atrophied middle turbinal, such as one might expect to find if the abscess had originated in the bulla,

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or in some other cell of the labyrinth, and had pushed the middle turbinal over against the septum.

In this connection it is interesting to notice that a cavity corresponding exactly with the cavity of a middle turbinal abscess sometimes exists ready formed in cases of rarifying ethmoiditis without a trace of suppuration. A striking instance of this occurred to me recently. A girl of fourteen, K. O——, came to the hospital complaining of pain about the bridge of the nose and headache. The middle turbinal on one side was considerably enlarged and pressed against the septum. On removing the anterior end of this enlarged turbinal, I found that I had exposed a large cavity which was not confined to the middle turbinal, but extended upwards as far as the inner wall of the orbit, as I readily ascertained by measuring with a probe. The cavity was quite empty, and was bounded by a beautifully smooth white shining surface, which reflected the light and rendered the interior plainly visible, and this surface, when examined with a probe, felt as smooth and hard as ivory. No doubt we have all met with smooth white eburnated surfaces on the outer wall of the nose in cases of rarifying ethmoiditis, but I have never seen such a large cavity in a case of that kind, nor one that corresponded so exactly with the cavity of a middle turbinal abscess. It happened that I had had several cases of ethmoidal abscess in succession, and was actually treating such a case at the time when the girl K. O—— came under observation; and it was impossible to avoid being struck by the fact that here was a clean, empty cavity topographically identical with the abscess cavities I had been treating. Two questions occur to me:

1. Does this large cavity exist in many cases of rarifying ethmoiditis?

2. Is it from the pyogenic infection of such a cavity that middle turbinal abscess usually arises?

It is, I think, certain that such cavities must be rare, for almost no intranasal structure is removed more frequently than the head of the middle turbinal; and although a small cavity is very generally bisected in doing so, the recorded cases in which a large eburnated cavity has been opened are, so far as I know, comparatively few. It is, however, probable that such cavities exist more frequently than is suspected, for I do not suppose they ever give rise to severe symptoms till they become the seat of suppuration. In the case of the girl K. O——, for instance, the symptoms were by no means pressing, and it was—to use a sporting phrase—a "toss up" whether I removed the front of the

turbinal or not. Had I not done so, it is, I think, probable enough that the cavity might subsequently have been infected during an attack of rhinitis, and have become the seat of a typical middle turbinal abscess, pointing or rupturing on the inner wall of the orbit. The probable mode of origin of such a cavity is not difficult to understand when we recall the fact that the ethmoid bone is developed from four parallel lamellæ or turbinals, between which lie its various interturbinal passages or meatuses.

The cavity I have described occupies the entire length of the third ethmoidal lamella. This lamella forms the middle spongy bone (which frequently contains a cell at its anterior end), and it also extends as far as the inner wall of the orbit, where it enters into the formation of other cells. Absorption of the bony tissue which normally lies between the layers of this lamella would result in the formation of an elongated cavity exactly similar to that found in the girl K. O—— referred to.

With regard to the second question—viz., as to whether a middle turbinal abscess often or usually arises from the infection of such a pre-existing cavity—I have only one remark to make. It is this : In opening ethmoidal abscesses from the nose I have repeatedly observed while cutting away the cyst-wall that the bone was in a condition of rarefying osteitis, dense but brittle, and the interior of the abscess-cavity presented an extremely hard, uneven surface. This would rather indicate that these abscesses tend to occur in bones affected with rarefying osteitis; and if this be so, may not the reason be that such ethmoids are already furnished with a cavity, which only awaits the advent of pyogenic organisms to form an abscess? I offer this as a suggestion which may perhaps account for some cases, especially those in which the pus seems to reach the inner wall of the orbit with much greater ease and fewer symptoms than one would expect in an abscess originating in the nose.

The treatment of ethmoidal abscesses which bulge into the nose is extremely simple. As much of the lower part of the cyst as is accessible is cut away with forceps, so as to lay the cavity freely open, and suppuration generally ceases in the course of a few weeks, or at most a month or two. The posterior part of the cyst will often require to be removed later, in order to restore the air-way through the nostril. Should free suppuration continue after drainage is established, it will generally be found, I think, that the disease is not confined to the ethmoid, but involves the frontal sinus. In one of my cases—an extremely chronic one of thirteen years' duration—the frontal sinus had apparently been affected

secondarily by erosion of the thin plate of bone that separates the cavities in front; but I believe this is exceptional, and that it is commoner for the frontal sinus to infect the ethmoid, or for both to be simultaneously affected at the beginning of the illness.

In the second group of cases of ethmoidal abscess—viz., those in which there is no visible swelling in the nose—the abscess develops in the ethmoidal cells external to the middle spongy bone, between it and the orbital plate, and points and discharges by preference on the inner wall of the orbit, either through the lachrymal bone and sac—as in one of my cases—or through the skin above the inner canthus. The external signs and symptoms in these cases do not differ from those of the first group, with the important exception that there is no rounded swelling to be seen presenting in the nostril. The nose may be freely pervious, and appear practically normal, the middle turbinal showing no change either in position or size.

In the treatment of this group of cases it is generally recommended to make an incision over the bulging part of the inner wall of the orbit, and break through into the nose, so as to establish free drainage. This, no doubt, is an effectual procedure, but before resorting to it I should in every case remove the anterior half of the middle turbinal; and further, I think in most cases I should endeavour to open the abscess cavity from the nostril. I have done this in three cases during the last three years, and the results have been quite satisfactory. In two of the cases the abscess had already burst—once into the lachrymal sac and once through the skin—and in the third case an external operation had been performed some time previously; but the opening into the nose was firmly closed, and the patient was sent to me suffering from severe headache, feverishness, and œdema of the eyelids. This was my most troublesome case, as I had to break through into the posterior cells. Cocaine anæsthesia sufficed in two of these cases, and in the third general anæsthesia with ethyl chloride was adopted, the patient sitting upright in a chair.

This concludes what I have to say, gentlemen, about ethmoidal abscess. I have not attempted to write a complete or systematic paper, but merely to record some of the facts of my own experience, in order that I might have the advantage of hearing your comments upon them.

Note.—The girl K. O——, whose case is referred to above, came up for treatment a fortnight after I had removed the head of the middle turbinal and exposed the eburnated cavity. The cavity was suppurating, and the soft parts being somewhat swollen,

it was possible to remove with the snare a second and larger segment of the middle turbinal. This cut the cavity at a point where the inside measurement was seven-eighths of an inch; but of course the section was oblique. After this suppuration gradually subsided, and the patient's headaches disappeared almost entirely.

AN UNUSUAL CASE OF EMPYEMA OF THE MAXILLARY ANTRUM.[1]

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Mrs. T——, aged thirty-five, family history unimportant, consulted me two and a half years ago for right nasal obstruction, with nasal and post-nasal discharge. There was a history of gradual failure of health for some years, accompanied by so much muco-purulent expectoration that she was supposed to be suffering from consumption, though no definite lesion had been found. Pus was noticed coming from the middle meatus of the right nostril, in which situation were also found many small granulations and polypi. Transillumination showed a somewhat dull light beneath each eye, very much more marked on the right side. An exploratory puncture through the inferior nasal meatus showed foul pus in the right antrum. The middle meatal region was then cleared of granulations and polypi. As the patient lived some thirty miles from my office, and was unable to remain in town longer than a few days, alveolar drainage was decided upon, which necessitated the sacrifice of a healthy tooth. Lavage of the cavity was performed by the patient daily for two weeks, using an indifferent aseptic fluid, resulting in a permanent cure of her nasal trouble, with marked benefit to the post-nasal discharge. I might also add that for several years before I saw her she had been having polypi removed, but as the antral mischief was untouched they readily recurred.

I did not again see the patient until about nine months ago, when, following an attack of what she called *grippe*, associated with severe faucial neuralgia, considerable purulent discharge was noticed in her left (that is, opposite) nostril. The purulent expectoration was rapidly increased. I diagnosed a purulent sinusitis in this side, probably an acute exacerbation of a chronic and

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