

A SUGGESTED OPERATION FOR TURBINAL CATARRH

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Tréve neiméigedari lias :
Coméirri cen ancirr, víamme, vígallíae
—Tréve Eipeann.

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AS in nasal cases the term catarrh is apt to be used, in a sense as broad as its Greek derivation, to include any "down flowing" backwards or forwards from the nasal cavities irrespective of the source or quality of the fluid, it is too loose accurately to define the character of the disease which is the subject of this paper, which does not treat of gross and obvious lesions such as empyemata or polypoid degeneration of the ethmoidal labyrinth. And yet the disease which for the moment I refer to the inferior turbinated bodies is the commonest as well as the most intractable cause of catarrh and nasal obstruction, and of the discomforts to which these conditions indirectly give rise. It is not necessary to remind the rhinologist of the peculiar structure of the inferior turbinated bones which differentiates them so much from the other nasal shelves or lamellae that I have ventured elsewhere to describe them with their cavernous, vascular and swelling fringes as "turbinal organs." They might be called "vapour kidneys" if for no other reason than emphatically to draw attention to the importance of the double function of these indispensable structures ; a function the very delicacy of which leaves it unperceived. By the vapour they make they maintain a constant climate for the upper part of the respiratory tract, thus insuring that the air will not enter the lungs devoid of moisture ; and by a rare sense, analogous perhaps to the sense of smell, they taste the intangible thin air and inform us of its quality. It is by means of them that the difference between the crisp air of an Alpine height and the twice-breathed air of a town can be perceived. And the removal, injury or derangement of them testifies to this conversely : Air-hunger, complaints of nasal obstruction (from inability to feel inspirations) or asthma may follow. It is highly probable that their swelling or shrinking is connected in some intimate way with atmospheric and

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pulmonary conditions and the amount of oxygen in the blood and the pressure of the blood itself : but this relationship is at present obscure and is not likely to be traced satisfactorily in climatic conditions such as these, wherein the air is saturated to dew-point for the greater part of the year and in which there is so little "drying" that they are constantly engorged and unrelieved of their mucous.

Let us examine the nose in a person who suffers, or let us say, rather, is subject to, the discomfort of a constant or frequent non-purulent cold in the head. The inferior turbinated bodies may be only slightly swollen with a few white threads of mucous stretching like short spider lines from their surface to the septum, evidence that at no remote time the turbinated bodies swelled until they touched the septum and obstructed free nasal respiration. If the nose be examined when the turbinated bodies are not swollen (they will often be seen shrinking during the examination) the middle meatus and the edge of the middle turbinal will look as if the nose had just been washed out with water. It will look wet and reflect the light, whereas the normal nasal mucosa looks dry. Many cases of nasal trouble come before the surgeon in which the nose is not complained of : a case of hawking from the "back of the throat" in the morning, or a case of neuralgia in the eye, or frontal pain and headache, "hay-fever" or a feeling, as one patient described it, "like a hot sponge in the upper jaw." It is my practice to explore the upper maxillary sinuses of every nose I examine with a puncture needle as a matter of routine and to examine, first in a black tray and then in a tumbler, the water that has been washed through these spaces ; and my experience has justified this course. If there come from them a washing rich in thin blue streaks of mucous mixed with small dirty yellow flocculi, *and if on transillumination the pupil reflex is not visible*,* I diagnose an infiltrated sodden state of the lining mucosa of these spaces. Let us consider what this means. If the lining membrane of the antrum be oedematous it will be most oedematous round the ostium where it is even loose normally, and it will tend to close the ostium and thus to convert the antrum of Highmore into an air-tight box.

*I emphasise this in response to a demand from a physician of wide experience, for a ready method for ascertaining the condition of the antra in patients during a general examination.

But it will be a box from which the air will soon be absorbed by the blood in its vascular walls and the negative pressure thus made will exert suction on the ostial mucosa, and make its swollen condition more swollen and cause engorgement of the vascular turbinated bones (by a cupping action of the common blood supply) until there is set up a vicious circle of nasal obstruction. "Pressure," "weight," "neuralgia," "pain in the head or eye," all the sequelæ in degrees varying as the various branches of the Vth nerve, reflect the distress produced by the want of ventilation ; and to this is added hypersecretion from the engorged turbinated bodies. This is a state which, if it recur frequently and be left for years unrelieved will end by the mucous secretion becoming pathogenic, and will affect the general health of the patient.† And the constitutional effects may be as many as the diatheses of the patient vary : headache, rheumatism, malaise, depression, auto-intoxication (the nose can absorb nearly as well as the stomach), "asthma," evening fatigue, tinnitus, unrefreshing sleep and bad taste in the mouth in the morning. Pus in the crypts of a sessile tonsil is often found in cases of such antral catarrh. It is impossible to diagnose or to enumerate all the sequelæ that may follow frequent colds. They are best measured by the degree of relief that follows on their cure.

The foregoing picture is, of course, exemplary and drawn only for the sake of illustration. Ideal conditions are not found in Nature even amongst the diseases. All these signs and symptoms could hardly occur in any case. It is not even necessary for the ostium to be occluded to produce discomfort. If the mucous membrane lining the antrum be infiltrated the effect will be felt in a variety of ways by the whole nose. And the inferior turbinated body is rich in erectile tissue, the action of which is characteristically unaccountable.

Though I referred the catarrh to the inferior turbinated bodies, I hope I have shown that the enlargement and hypersecretion of these is but an effect produced by infiltration of the antral lining. The cause is in the antra of Highmore, and therefore it goes without saying that cauterisation of the inferior turbinated bones as is commonly practised, reduction of them by the snare or wholesale

†It will explain why it is that an empyema is found as a rule on the narrow and more congested side of the nose.

removal by the barbarous spokeshave, is operating on an effect and is as futile as it is mischievous. Nor will resection of the septum—which I have seen undertaken with the object of giving the turbinated bodies room to swell—cure the catarrh or lessen the nasal obstruction. While the antral lining is sodden there can be no relief. The antra of Highmore must be denuded, drained and ventilated. Nothing less will cure. Apart from the presence of pathogenic organisms I advocate the opening of the antra of Highmore in cases where nasal obstruction and catarrh is caused by the inferior turbinated bodies swelling constantly: and, except at the age of puberty, even for the condition that is described as "angio-neurotic oedema" of these structures. The indication for operation is intolerable discomfort; not necessarily a recognised pathological condition or disease. I have opened more than a thousand antra in such conditions as I describe and with the most encouraging results; and I have had my own antrum operated on to cure recurring colds and constant obstruction which refused to yield after the posterior moriform enlargement had been removed by snaring; and after a septal spur had been sawn off sub-mucously. The result is so satisfactory and the relief so sudden that I can now realise how insidious can be the progress of the disease that can increase imperceptibly for years until life becomes miserable and strength and energy are depressed.

This is shortly the technique for the operation through the canine fossa which is named after the leading rhinologist in the different countries in which it is performed.

I must ask indulgence for describing with a slight modification the well-known Caldwell-Luc operation. But as, before advocating what may be a severe operation for the relief of what is sometimes more a discomfort than a disease, I have endeavoured to reduce it to the simplest and shortest procedure, I may be pardoned if I describe technique.

1. On anaesthesia, pass a catheter through the nose and, bringing it through the mouth, attach one tail of a piece of twine to which midway is fastened a vaselined gauze plug made to fit the posterior choana and short enough to disappear behind the velum so as neither to awaken the pharyngeal reflex during the operation, nor, by causing the velum to bulge forward against the tongue, embarrass the anaesthetist.

The cheek is retracted in the usual way and a pad inserted to prevent blood running back along the line of the reflection of the mucous membrane to the cheek, and reaching the pharynx.

2. Carry an incision (along the line of its reflection) through the mucous membrane and periosteum from the canine root to the first premolar about one-third of an inch above the margin of the gum, care being taken not to make it so high as to expose the fat of the cheek.

3. Shove up with gauze the mucous membrane and periosteum *together* (to prevent hematoma).

4. Open the antrum on the flattest part of the canine fossa with a small trephine. See to it that it does not slip into the cavity and wound the lateral nasal wall, to do so would cause hemorrhage. This accident is likely to happen in edentulous people whose molar bones are brittle as eggshells and not much thicker. Carry the opening towards the middle line with one punch of Hajek-Claus' forceps which will enlarge the trephine opening about half as much again. The smallness of the opening is a safeguard against post-operative neuralgia.

5. Peel off the cedematous lining by means of a blunt hook bent at right angles (a dental scaler) and endeavour to draw it forth entire. If this be impossible remove it gently with a flexible curette guarded by gauze. There is danger of osteomyelitis if the curetting be too vigorous in septic cases—a danger which is far greater in the frontal sinus. Introduce a small post-nasal mirror and examine the surfaces that cannot otherwise be seen.

6. When all is cleaned like an egg-shell, with a bayonet-shaped chisel one-third of an inch broad make a vertical cut from the nasal floor behind the anterior insertion of the inferior turbinated bone. From the top of this vertical cut make another horizontally backwards for about one inch and make a third cut parallel to this along the floor of antrum and nose. Insert the scaler into the nose under the inferior turbinal and push the oblong piece thus cut into the antral cavity. It will hinge outwards; and it can be broken off cleanly by means of a strong packing forceps. Punch away loose periosteum with a sharp conchotome. On no account should the inferior turbinated

bone be injured. Thread a ring-knife and pass it from the nose into the antrum. Seize the loop of thread and having removed the ring-knife pass the end of a tampon of one-inch iodoform gauze tape and draw this out through the nose. Having dried the antrum and swabbed it with tincture of iodine, fill it loosely with the iodoform gauze tape. Remove the pad from the cheek. Stitch the periosteum firmly with two or three sutures of cat-gut, and swab with tincture of iodine to prevent infection from the mouth. Remove the post-nasal plug. Next day the iodoform gauze tape is withdrawn and the patient may sit up. Warn patient against blowing nose forcibly and causing emphysema. On the fourth or fifth day any swelling of the cheek will have subsided, and the patient may leave hospital. I irrigate the antrum subsequently once or twice with sterile soft water above blood heat to remove clots.

Given a good anæsthetist, this is a very simple operation and may be performed by anyone who is possessed of the necessary tackle.

I have operated thus on more than a thousand cases—double and single—I have never seen septic pneumonia follow. The only untoward sequelæ were neuralgia, or the necessity of washing out the antra for three weeks or more on account of the original infection persisting beyond the usual time or the ethmoiditis being either chronic or slow to recede. Therefore, I consider that it puts the patient to no risk beyond that of an anæsthetic, and though it may seem a radical treatment for a mild malady, it is in my experience (subjective and objective) far less harmful than interference with the turbinated bones; and it is the only procedure by which the chronic nasal obstruction and turbinal catarrh may be relieved permanently. Whether from the cumulative effect of many colds or from changes in the bony structure of the nose or merely from biotripsis which rubs us all the wrong way, this condition is commonest at and after middle age. And while I do not hold that a good operation justifies any diagnosis, I think I may venture to say, as far as any affirmative can hold good in such a progressive science as surgery, that the procedure I recommend for the cure of turbinal catarrh will be found to be justified by its results.