CONCLUSION.

A brief retrospect over the intranasal methods of operating upon the ethmoid shows us first of all that, to accomplish successfully any operation worthy of the name, an intimate knowledge of the anatomy, both regional and surgical, is essential. This knowledge, like a two-edged sword, cuts both ways, for it not only gives the operator confidence to remove tissue fearlessly, but also the wisdom to exercise caution when approaching a dangerous area. All of us who have concerned ourselves to any considerable degree with intranasal ethmoid surgery must have been convinced that it is impossible in every case to expose completely the mucosa of each and every ethmoid cell—at least, such holds good in my own experience. There exists, unfortunately, no anatomical configuration of these cells which can be used as a normal model; but in operating (despite all the stereoscopic skiagraphs we might have had made) it is the ideal normal that we must keep in mind, and if in the midst of the exenteration we encounter great variations, they must at once be considered anomalous, and we proceed with the operation accordingly. Small wonder is it then that certain deep-lying cells escape our attention, this being the reason why in these cases our ultimate results are not 100 per cent. perfect. Indeed, it is now my custom to try to impart this knowledge to those patients of better understanding before attempting any operation, and to state that, in my opinion, the improvement should be measured by a certain percentage according to the severity and condition of the case—say from 60 to 95–100 per cent. representing, of course, the perfect result. While all of my patients have by no means been restored to their original normal functioning activities, I have, nevertheless, long since become convinced that, when properly executed, the intranasal operation on the ethmoid offers the least dangerous, if not the most facile, opportunity to the patient for relieving him of his distressing and oftentimes dangerous infection.

THE CONSERVATIVE AND SURGICAL TREATMENT OF CHRONIC ETHMOIDITIS.*

BY

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THERE is, I suppose, no subject that is so fraught with difficulties and doubts for the rhinologist as the problem of chronic ethmoiditis. In the first place, the ethmoidal labyrinth varies enormously in anatomical configuration and complexity, so that, like finger-prints, no two ethmoids are exactly alike. In the second place, the position that the ethmoidal capsule occupies in the nasal cavity and its close relations with other sinuses make it difficult to determine precisely the extent of actual disease. The varieties of infection and the reactions of the individual to them provide further stumbling-blocks in the path of exact diagnosis and a proper line of treatment; moreover, there is a curious lack of unanimity about the classification of chronic ethmoidal disease, so that in many cases it is by no means clear to what particular condition a suggested method of treatment may refer.

It is, I think, of the utmost importance that we should at the outset determine what kinds of inflammatory processes we are prepared to recognize as affecting the ethmoidal labyrinth. Few will, I imagine, dispute the fact that clinically we may recognize two varieties: (1) chronic catarrhal inflammation (polypoid degeneration), and (2) chronic suppurative inflammation. Whether these are distinct pathological entities, whether the one can progress into the other, and whether both varieties may be combined in the same ethmoid, are questions upon which there are so many opinions that discussion of them would only tend to obscure our main issue. I am, however, prepared

to take my stand on the existence of these two clinical varieties of inflammation and to deal with the matter from this aspect.

In the first instance let us consider a case of moderate polyposis; this has occurred as a result of prolonged inflammatory irritation of the ethmoidal mucosa, and the polypi are to be regarded as the product of hyperplastic inflammation of the covering of the ethmoid bone. That they are commonly seen on the free edge or from the under surface of the middle turbinate is due to the fact that this structure, which is simply a folded over portion of the ethmoid, is the most prominent feature in the upper part of the nasal cavity.

Their obvious presence may, or may not, lead one to suppose that similar changes may be present in neighbouring tracts of the ethmoidal mucosa, which may for the moment be out of sight; the possibility is not excluded that the source of irritation may be found in discharge from a neighbouring sinus as opposed to the possibility of purely superficial irritation of the mucosa from a variety of definitely local causes.

It is possible for the mucous membrane covering the ethmoid to become primarily diseased and for the hyperplastic mucosa, owing to its favourable *milieu* of warmth and moisture, to manifest itself as polypus formation. This is the simplest condition; it might, in its early stages, yield to such conservative measures as nasal lavage and the occasional application of mild caustic or astringent solutions, or, in slightly more advanced cases, to the correction of any obstruction which was causing undue congestion in the region of the middle meatus, together with the removal of the polypoid hypertrophy with suitable forceps. This latter procedure should not cause the fact to be overlooked that the inflammatory process has probably spread to the deepest layer of the mucosa, which is the periosteum of the underlying bone, and that the correct removal should always involve a portion of this bone. The snare is an unsuitable instrument for this purpose, and has been abandoned in my clinic for many years.

It is not, however, likely that measures such as these will often suffice, since the cases do not usually come under our notice until they are more advanced and the inflammatory process has definitely spread into the ethmoid cells themselves. When this has occurred it is all but impossible to estimate the extent of the disease, and for that reason it is incumbent on the surgeon to proceed circumspectly.

The chief aim should be to ensure a free airway and free drainage. If this is assured we may expect that a certain number of cases will undergo resolution. Can we attain this object better than by the removal of the middle turbinate? I think not. I am not myself amongst those who regard the middle turbinate with great veneration, and I would far sooner remove it in its sodden polypoid bulk than burrow blindly beneath it in a vague endeavour to open the operculum or break through the bulla. Simple removal of the turbinate without any further intervention will improve the drainage and will cure a certain number of cases.

These conservative measures may suffice for a small proportion of our cases, but in the majority the disease has spread too deeply and the bone has already become friable from osteoporosis. These cases demand more severe measures if a cure is to result.

The problem now is so to plan our operation that definitely diseased tissue is removed with as little interference to healthy structures as is possible. Every surgeon will have his own method of achieving this. Some may rely on repeated "nibblings" with a variety of forceps, whilst others may tear cells open with hooks and remove the debris with a sharp spoon. Others, again, may direct their attention to a particular group of cells that experience teaches them to suspect, and by encompassing their destruction not only remove an area of disease, but also free the ostia of neighbouring sinuses.

Thus far one may go with comparative safety in the belief that little or nothing has been done to destroy healthy tissue or spread infection broadcast through the

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labyrinth. At this point, then, let us leave this type of inflammation and turn our attention to the chronic suppurative variety.

Here we have a different clinical picture in which polypi are usually absent, whilst crusts and purulent discharge take their place, along with a group of symptoms—pharyngeal, laryngeal, or gastric—due to irritation by or absorption of the septic secretion. It is clear to our mind that the ethmoidal cells are infected, though how extensively we cannot say.

We should therefore once again adopt our conservative attitude and by removal of the middle turbinate do our best to ensure efficient aeration and drainage. This may be followed some considerable time later, if necessary, by a limited morcellement of the area from which the discharge appears to come. Some cures undoubtedly result from these procedures, and it will be well to allow a fair margin of time for this to occur. There will inevitably remain a not inconsiderable residue of cases in which we have done apparently very little to alleviate the patient's symptoms. When this impasse is reached in either type of inflammation (and it is at this point that they converge and we may consider them together), we are confronted with the question whether to hold our hand lest worse befall or whether there is a possibility that a more complete surgical procedure may result in the eradication of the disease.

We are at the parting of the ways. The moment has now arrived when the thought of complete exenteration crosses our minds, and we may well consider what is the best way to achieve it. Several ingenious intranasal operations have been devised. Attention might be drawn to the merits of Mosher's method in which, beginning at the agger cell, the curette is passed through an anatomical void lateral to the main mass of the ethmoid, and, after hitching up against the anterior face of the sphenoid, breaks the whole ethmoidal capsule into the nasal cavity. This might be compared with Sluder's procedure, where the same result is achieved by two skilfully directed cuts with special knives, the one vertically from back to front beneath the turbinate, and the other horizontal from within laterally and just below the base of the skull.

Can these or any similar operation effect the desired object? After many years and extended trials of such operations I am driven to the conclusion that by no intranasal procedure that I know of can the ethmoidal labyrinth be completely exenterated.

It is for this reason that I wish to bring to your notice and in some way to urge the claim of an external operation. If, for the moment, I pass over the possible merit of any transantral operation such as that recently advocated by Horgan, it is merely because my experience of it is limited to so few cases.

More than twenty years ago, when I had the privilege of assisting Killian in some of his frontal sinus operations, I saw the ethmoid exposed through the external incision, but it was not until 1913, when I saw Dr. Coakley operate in New York, that I appreciated how much of the ethmoid could be dealt with through a very small external incision. Since that date I have practised a similar operation, in some ways modified and in some ways extended, in an ever-increasing number of cases.

I know that there is nothing new about an external operation; I merely claim that it has not been, and is not, performed nearly so often as it should be, and that in obstinate cases it gives a considerably higher percentage of cures than any other operation. I have employed it for fifteen years in purely ethmoidal cases, and, as I regard the ethmoid as the key to the frontal sinus, it naturally has formed the basis of my frontal sinus operation.

Through a very small incision in the delicate skin, just internal to the inner canthus, which leaves an almost invisible scar, practically the whole ethmoid can be dealt with, and particularly the fronto-ethmoidal and orbito-ethmoidal cells which are so often at fault, and which tend to keep up the ethmoidal disease. These cells cannot be safely and satisfactorily removed by the intranasal method.

If an infected high ethmoidal cell is found to be producing a mound in the floor of the frontal sinus, and is

affecting this cavity, it is the work of a few moments to remove a portion of the floor of the sinus, and thereby improve its drainage. Moreover, it gives excellent access to the cells of the superior meatus, and especially to that large posterior cell which is plastered on to the anterior face of the sphenoid and which so often remains unopened by any intranasal procedure. It is always quite remarkable to see how many cells remain unopened after what was thought to be a complete intranasal exenteration.

I do not wish to claim too much for this operation, for there remains a small percentage of cases in which apparently we cannot remove every infected cell, and these cases, though relieved, are not cured. I can only say that after an extended experience I regard this operation as of the utmost value, and the main point that I should like to make to-day is that, in well-established cases, the possibilities of the external operation should not be lightly dismissed or its performance unduly delayed.

THE HEREDITY OF DEMENTIA PRAECOX.

BY

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PRACTICALLY all authorities agree that, in common with other varieties of insanity, some defect in the heredity of the individual is at all events a predisposing cause of the dementia praecox (schizophrenia) from which he suffers. Given this "predisposition" it is further generally assumed that some additional factor is necessary for the actual lighting up of the psychosis, and that this necessary exciting cause may be one of apparently very slight degree if the predisposition is intense. In spite, however, of the most eager statistical research into the histories of tainted and untainted stocks, we know at the present date no more than this about the etiology of dementia praecox. The difficulties in the way of any accurate conclusions are apparently insurmountable, and the results of the inquiries which have been made show little similarity the one with the other. The long intervals between human generations on the one hand, and the unreliability of "family" information on the other, are the chief obstacles to conclusiveness. Further, inquiry is obviously useless except among the educated classes, but here secretiveness as to any known taint is especially pronounced. Then, again, the question is unsettled as to what abnormality is to be considered a "taint"—many writers include genius, and some immorality!

Kraepelin¹ considered "with all reserve" that the disease, though often "familial," was the result of an auto-intoxication due to a "disorder of metabolism," basing his theory on the fact that the first symptoms tend to appear at puberty and adolescence, and his views have received support from the work of Mott,² Lewis,³ and Gibbs, among others. It may, however, be very reasonably contended that the degenerative changes found in the sex glands are secondary to some deeper and earlier defect in the organism.

My experience of the peculiar incidence of dementia praecox among the Parsees of Bombay compels me to the opinion that "inbreeding" is a very definite cause of the disease. By "inbreeding" I mean, as the dictionary puts it, "breeding in and in"—not merely the occasional mating of cousins, especially of those of the first degree. The experience of the ages has led to various rulings against the marriage of cousins. These have been many, but I would mention especially the prohibitions of the Levitical degrees, of the Roman Law, of the Council of Agde (A.D. 506), and of the Canon Law, as evidence of this experience, as also the enactments of many American States at the present time.

Clouston⁴ when discussing his "insanity of adolescence," which approximates to the more recently differentiated dementia praecox of Kraepelin, refers to its marked incidence in Newhaven, and to the notorious "frequency of insanity among the old families of the Society of Friends,