much good, the surgeon can always fall back on the more radical measure.

Here we must not confuse the terms radical operation and radical cure; in both instances the adjective will be correctly used, but in the second case we cannot guarantee that the term "cure" will be justified by results.

Those who have frequently performed the operation (the so-called Caldwell-Spicer operation) will agree with me that in spite of all care taken to explore every nook and cranny of the antrum and to remove the pyogenic membrane hidden therein, yet some small portions may escape the curette, which will ultimately infect the newly-grown granulating surface and so rob us of our desired result. The operation is one of some magnitude, and necessitates a prolonged anaesthesia of at least thirty to forty minutes, and the patient will be laid up for a week or more, during which his convalescence may be rendered unhappy by considerable pain, swelling and oedema of the soft parts over the antrum. Hence it seems obvious that at least a fair trial should be given to a simpler proceeding (alveolar puncture), which even in long-standing cases sometimes gives a perfect result. The only exception I would make to this rule would be for a patient whose circumstances demanded as short a treatment as was possible, and in whom one found the nasal mucosa in the middle meatal region in such a state of advanced polypoid degeneration as rendered it practically certain that a similar condition was present in the antrum. In such a patient only careful curettage, combined with free drainage, would offer any prospect of success. This point would not be insisted on were it not for the fact that from time to time it has been advised that the radical operation should be adopted in the first instance in all cases of chronic antral suppuration.

REFERENCES.

- ¹ *Proceedings of the Laryngological Society*, November 1st, 1901. ² *Lancet*, 1901.

THE TREATMENT BY ASCH'S OPERATION OF DEVIATIONS OF THE NASAL SEPTUM,

By EUGENE S. YONGE, M.D. EDIN.

Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of the Throat.

IN view of the common occurrence of deviations of the nasal septum in healthy persons, it is almost a work of supererogation to mention that treatment of the condition is only required in the minority of cases; in fact, in those instances where definite symptoms are found, which are referable to the displaced structure. In certain individuals the deflection is largely concerned in producing not only marked nasal symptoms, but also in bringing about disabilities which are not confined to the nasal cavities themselves, but affect correlated organs and induce grave discomfort or even suffering. The condition is usually most marked in the triangular cartilage of the septum. The cartilage may be more or less displaced into one or other nostril, or the deformity may be of a sigmoid character, obstructing alternately the right and left passages; there may be an angular deflection, an obtuse bending or a combination of these conditions, possibly combined with distinct spurs or outgrowths.

In marked degrees, then, of nasal obstruction caused by one or other of the above forms of deviation, it may become necessary to advise an operation for the rectification of the distorted structure. A large proportion of the operations, which have from time to time been recommended with this object, have been far from universally successful; indeed, their very number is almost an index of the generally unsatisfactory nature of treatment as applied to this disease. The septum, like the habitual criminal, is a confirmed "recidivist," and by reason of its resiliency is most apt, after a straightening operation, to creep back to its old malposition. The destruction of this quality of resiliency appears to be thoroughly effected by the operation suggested by Dr. Morris Asch, and communicated by him to the American Laryngological Association in 1890. The method has met with a very considerable measure of success, and its essential objects are accomplished by making a crucial incision in the nasal partition,

breaking down the resistance of the segments so formed at their bases, and by this means coercing the now flaccid structure into a new situation, where it is imprisoned by splints until it has become fixed.

Asch's operation has now been performed by a large number of surgeons, especially in America, and the consensus of published opinion, so far as I have ascertained it, has been strongly favourable. A number of modifications and "improvements" have been suggested, but, with one or two exceptions, I have not been able to convince myself of their usefulness. In fact, in certain instances the collection of "improvements," added to the remnants of Asch's original method, has appeared to connote an operation—possibly one of some value—but not that which was recommended by the original suggester, although labelled with his name; moreover, my own experience of the operation points to the conclusion that extremely good results are to be obtained by a pretty close adherence to the method as described by Asch himself.¹

The technique of the operation is very briefly as follows: The patient, with the head drawn over the edge of the table, is anaesthetized to a point bordering on complete insensibility. The little finger is introduced into the stenosed nostril, and the point of greatest convexity of the cartilaginous septum determined. Also the presence, nature, and location of any adhesions which may exist between the septum and the lateral wall of the nasal fossa are decided upon. After breaking down the adhesions, if present, either with the finger or a curved gouge, Asch's cutting forceps are inserted, the narrow blade being in the stenosed nostril and the wide, cutting blade in the opposite one. An incision is then made parallel to the floor of the nasal cavity, and, if feasible, across the greatest convexity of the deviation. The haemorrhage for a few minutes is decidedly brisk, but there need be little delay in making the second incision, which should intersect the first at right angles and as nearly as possible at its centre. The patient is now turned over on his side and the accumulated clots of blood are allowed to flow from his pharynx and nasal fossae. After the return of the patient to his former position a little more anaesthetic is administered, and by means of the finger introduced into the stenosed nostril, the segments which have been formed by the crucial incision are thoroughly broken down at their bases and pushed into the non-stenosed nostril. On this point depends, to a great extent, the success of the operation, for unless the fracture of these segments is assured, the resiliency of the cartilage will not be overcome and the operation will fail. The septum is then thoroughly straightened with Adam's forceps, and the nasal cavities are sprayed with ice-cold Dobell's solution, or some similar alkaline and antiseptic wash. The finger is then felt to pass easily to the posterior nares through the formerly narrowed cavity. A well-fitting Mayer's splint is introduced into the previously stenosed nostril, and a smaller one, with a view to controlling haemorrhage, into the other. The smaller splint is removed on the following day but the larger one is not removed for two days, after which it is cleansed and removed every day for five weeks. The nares, for the first two weeks at least, should be sprayed daily with a mild detergent solution.

A pair of cutting forceps with blades bent at a right angle are convenient for making the horizontal cut but they are not essential.

The chief difficulty appears to be the accurate performance of the two incisions in relation to the floor of the nose, to the greatest convexity of the deviation and to each other; and, as visual inspection is in my experience impracticable, it is necessary to be guided by external landmarks. There may also be, especially in narrow nostrils, some little difficulty in introducing the broad blade of the cutting forceps. A gentle boring movement of the wrist, employed as the blades are being passed into position, has usually been sufficient to overcome this.

As I have indicated above, my personal experience of this method has been very favourable, and I mention below some representative instances in which the improvement has been sufficiently prolonged for the cases to be reasonably looked upon as successful ones. I have not had occasion to note, either in these cases or in any others, untoward effects of any kind, except a minute perforation of the septum

which occurred in Case II which has not given rise to any symptoms.

CASE I.—Male, aged 16; was sent to me in February, 1901, for obstruction and deformity of the nose and excessive nasal discharge. The obstruction and nasal discharge had been noticed for about a year, and had caused the boy a great deal of discomfort. The external deformity appeared to have existed from early childhood. The extremity of the nose showed a marked curve upwards and to the left, whilst the inferior border of the triangular cartilage of the septum was displaced in the opposite direction, and presented about the middle of the right nostril (Fig. 1). There was almost complete stenosis of the right naris

Fig. 1.—Case I before operation. Marked septal deflection associated with external deformity. A portion of the lower end of the triangular cartilage of the septum is seen presenting in the right nostril.

Fig. 2. Case I five weeks after operation, showing patent right nostril.

owing to the presence of the deflection. Asch's operation was performed about three weeks after first seeing the patient. There was, after the operation, neither pain, reaction, nor abnormal temperature, and the patient was discharged from hospital in about eight days, he having learnt to withdraw and insert the nasal plug himself. Fig. 2 is from a photograph taken some weeks after the operation. When seen in

December, 1901, he had a clear breathing passage on both sides, and the improved condition produced by the operation ten months ago persists. The excessive nasal discharge ceased soon after the operation.

CASE II.—Female, aged 38, consulted me in December, 1900, complaining of marked obstruction of the right nostril (but occasionally of both), headaches, and attacks of hoarseness. The septum was bulging into the right nostril, and synchia existed between the former structure and the outer wall of the fossa. There existed in addition some catarrhal pharyngitis and laryngitis. Asch's operation was followed by the disappearance of the nasal stenosis, and at the last interview the voice was clear and the larynx healthy. The headaches had also very much improved. In this case there was a small perforation of the septum.

CASE III.—Male, aged 9½, was sent to me at the hospital for a very pronounced obtuse deflection of the septum which projected into the left nostril, and could be seen without a nasal speculum as a pinkish mass. There was a complaint of nasal obstruction on both sides, that on the left being caused by the septum and that on the right by the hypertrophied inferior turbinal. The cautery was applied to the inferior turbinal on the right side in order to reduce it, and the septum was straightened by Asch's method. The patient can now breathe comfortably through both nostrils, and he remains well six months after operation.

CASE IV.—Male, aged 23. Consulted me principally for nasal obstruction, especially of the left nostril and deafness in the left ear. There was an angular bend of the septum obstructing the left nostril, and a condition of catarrhal rhinitis and also of naso-pharyngitis. He was operated on three months ago, and informs me at the present date (December, 1901) that he can breathe freely through both nostrils, and that his hearing has much improved. On examination, it was found that he was still somewhat deaf in the left ear; but considerable improvement was noted in the condition of the nasal cavities (apart from the freeness of the left nostril) and of the naso-pharynx.

The operation is suitable for almost all varieties of deviation of the cartilaginous partition, but more especially for the obtuse form. It is unsuitable for spurs and outgrowths, unassociated with an unduly-curved septum, and also for most cases where the stenosed nostril is already too narrow. And except in those instances where it is a prelude or an adjuvant to other nasal or accessory-sinus treatment, as in a case at present under my care, it should not be recommended unless there is a marked degree of obstruction associated with definite symptoms.

It appears, in view of the evidence which up to the present has accumulated in its favour, that Asch's method, if accurately performed, is one of considerable value. But a careful study of numerous anatomical preparations, and of the operation on the cadaver as well as on the living subject, has convinced me that unless the operator is very clear as to the topographical anatomy of the nasal cavities, the procedure is one which runs a great risk of being imperfectly carried out—in short, of failing and of becoming discredited. It is of course by no means sufficient to make, in the septum, two incisions which are believed to be somewhere in the desired direction; nor even when these are accurately effected should the surgeon be satisfied until the recalcitrant segments are thoroughly broken at their bases. Finally, it is not sufficient to insert the plug and, as it were, let the patient look after himself; the case should be seen every day for at least ten days, and afterwards at frequent intervals until the septum has become consolidated in its new position.

I am much indebted to Professor A. H. Young, of Owens College, Manchester, for kindly allowing me to examine a number of specimens in the anatomical department.

REFERENCE.

- ¹ De Schweinitz and Randall, *Diseases of the Eye, Ear, Nose, and Throat*, London, 1899.

THE INFLUENCE OF NASAL AND NASOPHARYNGEAL OBSTRUCTION UPON THE DEVELOPMENT OF THE TEETH AND PALATE.

By A. L. WHITEHEAD, M.B., B.S. LOND.,

Ophthalmic and Aural Surgeon to the Leeds General Infirmary.

NASAL or naso-pharyngeal obstruction to respiration may be defined, according to Mayo Collier,¹ as follows: "If, by day or by night, nasal respiration must be supplemented by oral respiration, then there is nasal or naso-pharyngeal obstruction." Nasal obstruction is due to abnormal conditions of the turbinate bones by bony or soft tissue hypertrophy, to deviations or exostoses of the septum, to congenital stenosis of the nares, foreign bodies, rhinoliths, new growths, to contraction by growth or inflammatory swelling outside the nose. Nasopharyngeal obstruction is due to the presence of adenoid