THE SURGERY OF THE NOSE AND
ACCESSORY CAVITIES.

An Abstract of the Bradshaw Lecture delivered at the Royal College of Surgeons of England on December 1st, 1892.

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(Concluded from page 1223.)

TREATMENT OF NASAL POLYPI.

IF nasal polypi are fairly obvious from the front it may be assumed that larger ones hang down into the posterior nares. A properly made and slender polypus forceps, with blades serrated down to the hinge, is the best instrument for removing nasal polypi of any size, as they usually are when first attacked. It is essential to introduce the left forefinger into the posterior nares so as to guide the forceps. A 20 per cent. solution of cocaine applied both to the anterior and posterior nares (the latter with a bent brush) will do much to make the procedure painless, but the operator should invariably protect his forefinger with a piece of thick india-rubber tubing, since the best disposed patients are apt to close their teeth involuntarily under the influence of pain. The use of a general anæsthetic is to be deprecated, partly on account of the obstruction to respiration produced by the growth and the finger of the operator, but mainly because of the danger of blood entering the air passages. However successful the first operation, patients commonly shortly reappear with fresh developments. The tendency of the mucous membrane to hypertrophy is not removed by the operation, and a perfect cure could hardly be expected from a single operation. Small polypi are apt to develop on the curved edge and concave surface of the turbinate bones, and eventually to invade the nares. In inveterate cases of recurrent polypus portions of the turbinate bones might be removed with scissors. In ordinary cases, however, the common nasal snare of cold steel wire, which has been in common use in general hospitals for years, is the best instrument. If the nose be well cocaineised by making the patient sniff up the solution from a brush, or by employing a small spray apparatus, a bivalve speculum can be introduced and a good reflected light thrown into the cavity. The small polypi projecting from the mucous membrane can be caught *seriatim* in the noose, and plucked away with little or no pain or hæmorrhage. The abraded surface may be touched with a solution of nitrate of silver, or with a hot wire. Several operations of the kind may be necessary before a cure is effected.

But while recognising the advantages of carefully conducted operations on small polypi, I must enter a protest against the method, too often adopted by the specialist, of making a series of attacks upon large polypi without effectually clearing the nasal cavity. The result is to give rise to great irritation of the nasal cavity, with considerable fever and general *malaise*. If the nostrils are once sufficiently cleared to allow of their being thoroughly irrigated with mild antiseptic solutions, there is no danger of any complication of this kind arising, and the treatment of hæmorrhage by hot water douching becomes at once available should it be required.

"NECROSING ETHMOIDITIS."

In connection with polypus nasi I am obliged to allude to a disease which has been described as of frequent occurrence by Dr. Woakes, and by him alone—the so-called "necrosing ethmoiditis." According to this author the disease starts from frequent and prolonged catarrh, sometimes from the exanthemata, sometimes from injuries. At the commencement of the attack small projecting formations are seen on the middle turbinate bone; these formations become enlarged, and lead to dislocation of the bones and deformity of the nose. In this later stage the existence of bare rough bone is said to be easily ascertained. Still later cleavage of the turbinate bone takes place, and new polypoid formations are superadded to the other symptoms present. At a meeting of the

Medical Society, Dr. Woakes declared that he had never yet examined a case of nasal polypi for necrosis of bone without finding it. A normal middle turbinate bone was but rarely found. Now it is very remarkable that no single author whom I have consulted confirms these pathological views, or has ever met with the disease in question; but the most recent of all, Zuckerkandl, of Vienna,¹ speaks so forcibly upon the subject, that I hardly venture to quote him. He says:—

The statement made by E. Woakes cannot be sharply enough criticised on account of the operative conclusions which the author draws from his mistakes, and every medical man may be warned against giving any credence whatever to these statements, which are evolved more out of the inner consciousness of the author than from correct investigation. I have not observed necrosis of the bone in a single case; on the contrary, we have seen that the bony part which exists in the basis of some polypus become elongated and softened.

MALIGNANT NASAL GROWTHS.

Polypi occasionally affect the whole of the mucous membrane of the nasal cavities, and produce very serious symptoms by invading the antra, frontal sinuses, and even the orbits. Vascular growths present themselves in the nares occasionally, causing more or less obstruction of one nostril only, and bleeding freely upon any manipulation. These, if within sight from the anterior nares, are, I believe, almost always growths projecting from the antrum, and are either epitheliomatous or sarcomatous in their nature. It has occurred to me on many occasions to see well-marked cases of tumour of the upper jaw, which in the early stage were thought to be cases of ordinary nasal polypus, and in which temporary relief had been given by ablation of growths with polypus forceps. I would urge upon surgeons the importance of examining microscopically any growths removed from the nose which did not present the ordinary gelatinous appearance of mucous polypus, or the ablation of which was accompanied by unusual hæmorrhage, with a view of determining whether it might not be a protrusion of columnar epithelioma or sarcoma from the antrum requiring a more extensive operation. The results of operation for epithelioma of the upper jaw are so disastrous in their after-history, that it would be of the greatest importance to the patient that the root of the disease should be attacked as early as possible.

NASO-PHARYNGEAL TUMOURS.

Hæmorrhage of a more profuse character, occurring at intervals, will probably be due to some form of naso-pharyngeal tumour, which though for the most part only fibrous, are most serious in their development, being generally attached to the base of the skull. These tumours occur for the most part in young persons, and would appear to be in some way connected with the development of the cranial bones. In rare instances actual protrusions from the cranial cavity in the form of meningocele or encephalocele have been mistaken for naso-pharyngeal growths, and in more than one case have been attacked by the surgeon with fatal results.

Naso-pharyngeal tumours produce the ordinary symptoms of obstruction of the nasal cavities, accompanied by mucous and occasionally purulent discharge and deafness. A curious symptom which has been observed in many of those cases is drowsiness, the patient sometimes falling asleep even when standing upright. As the tumour enlarges it either encroaches upon the pharynx and thrusts forward the palate, or, growing forward, expands the nose, giving rise to the hideous deformity known as "frog face," and by pressure on the lachrymal ducts it causes epiphora.

The prognosis of these naso-pharyngeal growths is always serious, especially in the young subjects in whom they most commonly occur, but instances are recorded in older patients of spontaneous disappearance by sloughing, one of which occurred to Mr. Birkett, who had occasion to tie the left common carotid on account of the hæmorrhage.²

OPERATIONS FOR NASO-PHARYNGEAL TUMOURS.

Operative interference being generally a matter of necessity on account of the urgent symptoms, the surgeon may, if the growth be pedunculated, be able to deal with it most satisfactorily with the wire *écraseur* introduced through the nose. I have thus succeeded in encircling a naso-pharyngeal fibroma by means of the forefinger introduced behind the palate with the best result. The galvanic wire *écraseur* may also be employed in the same way, and has the advantage that the hot wire arrests

¹ *Normale und pathologische Anatomie der Nasenhöhle*, vol. II, 1892, p. 120.

² *BRITISH MEDICAL JOURNAL*, February 13th, 1888.

all hæmorrhage should the growth prove to be of a vascular and sarcomatous nature.

Maisonneuve's Operation.—In order to reach a naso-pharyngeal growth more readily from the mouth, division of the soft and even of the hard palate, as proposed by Nélaton, has been undertaken. Perhaps the most satisfactory method is Maisonneuve's "palatal button-hole," which consists in dividing the greater part of the soft palate to admit the passage of the finger and of instruments, whilst maintaining the integrity of the posterior portion and uvula, so as to permit of easy coaptation of the palate by stitches on the completion of the operation.

Rouge's Operation.—In cases where the nasal cavity is already seriously involved, operations from the face may be required, and of these Rouge's is probably the best and simplest. It consists in detaching the upper lip from the upper jaw as far as the first molar tooth on each side, by an incision carried through the mucous membrane. When the anterior nasal spine is reached, the cartilaginous part of the septum nasi is detached from it, and the nose drawn up so as to get a view into the anterior nares. If necessary, the ala nasi also may be detached, and the nose be completely turned up on to the forehead, when the anterior nares can be readily reached and enlarged if requisite to give admission to the cavity. Professor Annandale has shown that, by detaching the whole length of the nasal septum and then dividing the hard palate with the saw, it is possible to separate the superior maxilla for an inch, and thus gain more complete access to the naso-pharynx.³ The great advantage of Rouge's operation is the complete absence of external scar.

When only one nostril is involved, the surgeon may prefer to divide the lip in the median line, and to carry the incision into the nostril of the affected side, thereby obtaining free access, which can be facilitated if necessary by prolonging the incision around the ala nasi and detaching it from the bone. This is, in fact, the first step in the ordinary operation of removal of one superior maxilla, which has been practised on many occasions as a preliminary proceeding in the treatment of naso-pharyngeal polypus.

Langenbeck's Operation.—In order to obviate the deformity consequent upon actual removal of the upper jaw, Langenbeck proposed to resect the upper part only, leaving it attached by the nasal process which served as a hinge, so that the bone might be turned aside for removal of the polypus and be again replaced. An incision, convex downwards, was carried from the ala of the nose to the malar bone and back along the zygoma. This was met at the malar bone by a second incision from the nasal process of the frontal bone along the lower margin of the orbit. Detaching the masseter the forefinger was passed through the pterygo-maxillary fissure into the sphenomaxillary fossa, both of which had been enlarged by the pressure of the tumour. A keyhole saw introduced along the finger was made to cut horizontally forward above the level of the palate as far as the nostril, and the upper incision having been deepened, the soft parts were raised from the floor of the orbit and from the angle between the zygoma and the malar bone. By introducing an elevator into the sphenomaxillary fissure, and thence across the floor of the orbit as far as the lachrymal bone, the whole piece was then lifted up, bending upon its attachment to the nasal and frontal bones as upon a hinge until it was completely turned inwards and upwards over the opposite side of the face.

Operations by Depressing the Lower Jaw.—Huguier and Cheever have each devised a method of temporarily depressing the upper jaw so as to reach the naso-pharynx. Both operations consist in a vertical division of the hard palate close to the median line, and a horizontal section of the superior maxilla and palate bone from the pterygo-maxillary fossa forwards to the nostril below the level of the malar bone. On the completion of the operation the depressed portion is restored to its position and held in place by wire sutures. In one case Cheever carried out this proceeding on both sides simultaneously, but with fatal result;⁴ but Tiffany subsequently repeated the proceeding with success.⁵

DISCHARGES FROM THE NOSE.

Discharges from the nose are of various kinds, the simplest being the ordinary mucus of the nasal cavities, which becomes exaggerated in ordinary nasal catarrh or acute rhinitis. A cold in the head cannot, perhaps, be strictly called a surgical affection, since it is but a part of the general catarrh, but the pain caused by extension of the inflammation to the frontal sinuses is severe enough occasionally to give rise to unnecessary alarm. In my experience, anything like permanent mischief resulting in the frontal sinuses is extremely rare, and the seat of chronic discharge is more likely to be found elsewhere than in those cavities.

A clear watery discharge from the nostril appears to be often the result of senile changes without actual disease, but cases of profuse watery discharge generally depend upon some polypus affection. The use of astringent snuffs, and especially the sulphate of zinc, as recommended by Brodie, appears to keep these watery discharges in check, and operative interference would not be justified unless there were unusually good grounds on which to found a diagnosis of polypoid growths in the antrum or elsewhere.

Purulent discharge from the nostrils may result from exaggerated rhinitis, or, if chronic, may depend upon the presence of a foreign body. In children especially it is well to examine the nares thoroughly, and to use the nasal douche until a full stream is readily passed through the nose in both directions, so as to wash out any possible foreign obstruction,

the introduction of which has long been forgotten. Numerous cases of the formation of calcareous masses or rhinoliths by the deposit of saline materials upon foreign bodies are recorded. When met with these must be crushed with suitable forceps, and removed with as little damage to the mucous membrane as possible.

OZÆNA.

The chronic purulent discharge of children commonly known as ozæna is essentially a fetid atrophic rhinitis characterised by dilatation of the nasal cavities and widening of the nose, so as to produce in extreme cases the deformity known as "saddle nose." The tendency of the purulent discharge is to dry in the cavities of the nose, and to produce yellow or greenish crusts, which adhere finally to the atrophied mucous membrane. This is especially the case on those parts of the mucous membrane which are ulcerated, as they commonly are, but it may be questioned whether the ulcers are caused by the crusts, or *vice versa*. The majority of sufferers from ozæna are well-marked tuberculous or syphilitic subjects, and in the latter the discharge is often kept up by necrosed bone, the presence of which can be detected with the probe through the anterior nares, or by the finger introduced into the naso-pharynx.

TREATMENT OF OZÆNA.

The methodical employment of irrigation with warm detergent lotions is the first and most important detail of treatment; and I prefer the terebinthinate fluid, known as Sanitas, well diluted, for the purpose. Powerful continuous nasal douches are apt to set up mischief in the middle ear. A small nasal douche, with only a tumblerful of water, is the only admissible form of continuous douche; but a better plan is to employ an ordinary Higginson's syringe, so that the muscles of the palate may act only when the impact of the water is made, and thus the Eustachian tube be closed. The forcible interrupted current has the further advantage of more readily dislodging the crusts. After thorough washing, the application of glycerine, in the form of glycerine of borax, with a brush, is most useful; and in bad cases may be followed up by the application of the glycerine of carbolic acid to both anterior and posterior nares. To obviate the stench which is so prominent a feature of these cases, the use of a snuff of iodol and borax (1 to 7) has proved satisfactory. Residence at a bracing seaside place is advantageous to the strumous cases, and the sea-water may be advantageously tried as a douche. Cod-liver oil or the syrup of the hypophosphites is also useful. In the cases of ozæna dependent on congenital syphilis, mild mercurial douching may be used, and mercurial ointments, or, better, oleates diluted, may be applied to the ulcerated surfaces. At the same time, the iodides of potassium or sodium should be administered internally in full doses. When bone is exposed and necrosed, time must be given for its complete separation; and in extensive necrosis it would be justifiable to have recourse to Rouge's operation.

EMPHYEMA OF THE ANTRUM.

A chronic discharge from one nostril of pus which is not offensive to others, or very slightly so, depends in the majority of instances upon empyema of the antrum. This may be caused by the irritation of decayed teeth, the roots of which naturally impinge upon and in many cases actually involve the floor of the antrum; or, as has been maintained of late by some rhinologists, may be caused by inflammation extending from the nasal mucous membrane. It is very difficult to prove either cause to be the only one, but, seeing that, in many cases of empyema of the antrum, the patient has suffered from his teeth but has made no complaint of the nose until the discharge made its appearance, the balance of evidence seems to be in favour of the dental origin of the affection. Be that as it may, it is certainly the fact that only of late years have surgeons recognised that a discharge of pus may be proceeding from the antrum without any of the symptoms of inflammation which have been described as pathognomonic of the affection. As most recent writers upon the subject have drawn their inspiration from John Hunter's description of the "abscess of the antrum maxillare" contained in his essay on Diseases of the Teeth, I may be permitted to point

³ *Lancet*, January 26th, 1889.

⁴ Medical and Surgical Reports of Boston City Hospital, 1870.

⁵ *Trans. Med. and Chir. Fac.*, Maryland, Balt., 1878.

out that his description refers to the rarer cases in which obstruction of the opening into the nostril has taken place, and not the more ordinary form of purulent nasal charge.

Hunter's description has been followed by most systematic writers of the present day, and I must confess to having reproduced it in the second edition of my work on *The Diseases of the Jaws*, published in 1872. I gradually became aware, however, that suppuration of the antrum was not necessarily preceded by any inflammatory symptoms, and I published a paper on the subject in the *Medical Examiner* of December 21st, 1876, from which I will quote a passage:—

The more common course of events is that without any acute pain the patient notices that he has a purulent discharge from the nose when blowing it, and perhaps is aware that when lying down, the discharge finds its way into the throat. This latter point is often overlooked, however, though there may be a complaint of a very disagreeable taste in the mouth, and a tendency to nausea in the morning, with a hawking up of pellets of inspissated pus. With all this there is no distension of the antrum, and it is this fact which frequently misleads the practitioner. Given a patient who complains of a purulent discharge from the nostril, with occasionally a disagreeable smell, and the case is too apt to be put down as one of ozæna, and treated by nasal douches, snuffs, etc.

These views were reproduced in the third edition of my work published in 1884, and also in the course of lectures "On Certain Diseases of the Jaws," which I had the honour to deliver in this College in 1887. They seem, however, to have attracted little attention. Ziem, Stoerk, and Mikulicz, who wrote upon this subject in 1886, are generally credited with originating the views which I have held and taught for many years.

Ziem appears to have himself suffered from empyema of the antrum, and describes his own illness most graphically in his paper. In 1877 he commenced to suffer from a fetid unilateral nasal discharge. Various remedies were applied to the nasal mucous membrane, but these, as well as internal medication and a stay of two years in Egypt, failed to produce any improvement. In 1883 the discharge became so profuse, and the stench so marked, that the necessity of giving up his practice became more and more urgent. He now decided to have the antrum opened as the first step in a thorough search for the source of the suppuration. The surgeon whom he requested to perform the operation was very unwilling to undertake it, because none of the recognised signs of empyema were present. When, however, the cavity was opened and washed out, a large quantity of pus came away, and finally a cure was effected.

The diagnosis of pus in the antrum is by no means always easy. The method of examination, recommended by Fränkel in 1887, is useful and simple. The nose having been thoroughly cleansed and it having been ascertained by inspection that the nostril corresponding to the suspected antrum is quite free from secretion, the patient is told to lie down across a chair or on a sofa, supporting himself with both hands on the floor and holding the head down with the affected side uppermost. After remaining in this position for half a minute he is to sit up without either blowing his nose or inspiring through it. The speculum now having been reintroduced pus will be seen in greater or lesser quantity in the middle meatus if the discharge really comes from the antrum.

TRANSILLUMINATION.

In 1889 Heryng, of Warsaw, proposed to effect the diagnosis of fluid in one antrum by illuminating the bones of the face by an incandescent lamp introduced into the patient's mouth. Mr. Nathaniel Stevenson was good enough to make a series of experiments upon himself and others in my presence to establish the truth of Heryng's statement, that darkness on one side of an illuminated face might be taken as probably symptomatic of empyema. But the conclusion we came to was that the thickness of the bone varies so greatly in different individuals, as Heryng himself has noticed, that the test proposed was not very reliable.

TREATMENT OF EMPYEMA OF THE ANTRUM.

The symptoms of, usually, one-sided periodical discharge of pus, which is not offensive or only slightly so and which is apt to flow when the patient is recumbent with the affected side uppermost, ought to direct the surgeon's attention to the antrum, for that empyema of the antrum is much more common than usually supposed cannot be doubted. Some years back I was consulted by a lady who had been under treatment for some months for a chronic discharge from the nostril, for which she had undergone one scraping operation without benefit. The discharge continuing it was suggested that the frontal sinus must be the seat of the disease, and it was proposed to trephine the sinus with a view of clearing up the question. As the patient was both young and good-looking her friends not unnaturally took alarm at such a serious pro-

posal as opening up the frontal sinus, and I was consulted. I came to the conclusion that in all probability the antrum contained pus, and I advised that a puncture should be made into it before any more serious operation was undertaken. This was accordingly done, a quantity of offensive pus was washed out and the patient rapidly regained her health.

When a carious molar tooth is present it had better be extracted, and a puncture made through one of the outer sockets; but if there is no tooth requiring extraction I prefer to puncture above the alveolus in the canine region, and I have seen no harm follow the proceeding. Whichever method is employed, the thorough washing out of the cavity forms an essential part of the treatment, and this can readily be effected through an ordinary Eustachian catheter fitted with an india rubber syringe. Whether a permanent silver tube should be fitted by a dentist, and secured by a plate to the neighbouring teeth, must depend very much upon the patient. If he can introduce the Eustachian catheter readily, and wash out the cavity easily, there is no occasion for a tube, but if, as often happens, the opening through the alveolus tends to close, and the patient is constantly in difficulties, then it is better, I think, to have a tube fitted, care being taken that it is only just long enough to reach the floor of the antrum, and not to go beyond it. This can be fitted with a plug to prevent the accidental passage of food into the cavity.

REFLEX NASAL NEUROSES.

Within the last few years a new importance has been given to nasal disorders by the reputed discovery that many obscure nervous affections are nasal reflexes, or dependent upon some abnormality of the nasal cavity. That some forms of asthma, and particularly the so-called hay asthma, may depend upon irritation of the nasal mucous membrane has long been known; but it is only since Hack's paper in 1882 that various and distant phenomena have been connected with the nose. Hack makes these nasal reflexes cover a sufficiently large field, namely, gastralgia and dyspepsia, cardiac palpitation, salivation, trigeminal neuralgia, cephalalgia, migraine, scotoma, ciliary neuralgia, photophobia, vertigo, and agoraphobia; while his followers give examples of epilepsy, neurasthenia, and nocturnal incontinence. Even exophthalmic goitre has been thought to be sometimes connected with nasal obstruction, and Professor Hack considered this obscure disease to be a reflex phenomenon due to "permanent irritation of certain peripheral terminal apparatus of the sympathetic nerve, which are expanded in the erectile tissues of the nose."

It must, however, in fairness be stated that amongst specialists themselves there has been, from the time when Hack's doctrines were promulgated, considerable scepticism concerning the widespread influence attributed by him and his followers to nasal affections.

THE PATHOLOGY AND TREATMENT

OF

SUPPURATIVE DISEASES OF THE EAR.

Being an abstract of the Harveian Lectures delivered before the Harveian Society of London.

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LECTURE II.—FACIAL PARALYSIS.

Any condition interfering with the free flow from the tympanum of pus there generated may be productive of the serious complication facial paralysis. We have already seen how, in an acute attack of otorrhœa, an unyielding membrane may be its passive cause. I need hardly say that when facial paralysis occurs from suppurative middle ear disease, degeneration of muscle soon sets in, to be followed, if the affection continues long enough, by distinct wasting; so much might, indeed, be inferred from the fact that the neuritis is peripheral. Correlated with and on the same side as the facial paralysis is loss of taste, not of sensation, over the gustatory part of the tongue—a phenomenon not always noted, but of interest physiologically, in that it proves conclusively that the gustatory fibres come from the chorda tympani. These