for a swelling over the gum. If the swelling be thus fixed to the jaw, and the gum be swelled opposite the reflection of the cheek, and an adjacent tooth be found carious or very tender to percussion, the diagnosis is established. There is often a history of toothache which subsided when the swelling arose. In some cases pus may be found welling up by the side of the tooth.

CHAPTER XXVIII.

DIAGNOSIS OF DISEASES OF THE NOSE.

THE four chief signs of disease of the nose are: *epistaxis*, *discharge* from the nose, *obstruction* of the nose, and *deformity;* and it will be well to consider these individually before proceeding to the diagnosis of separate diseases.

1. **Epistaxis,** or bleeding from the nose, may be *traumatic*, and occasioned by direct injury of the nose itself, or by fracture of the base of the skull (*see* page 83), or *idiopathic*. When idiopathic it may result from local congestion, from disease of the vessels, from altered blood states, or from the rupture of vessels in very vascular growths in the nose. This last cause is at once to be recognised by the obstruction which accompanies the bleeding. Idiopathic epistaxis occurring in young persons otherwise in good health, and especially when preceded by flushing of the face, noises in the ears, giddiness, and headache, is to be attributed to *congestion;* when occurring in the course of fevers or in patients with disease of the liver, it is to be attributed to *alteration in the condition of the blood.* In elderly patients, when preceded by signs of cerebral congestion, and the blood is dark and venous in character, it is due to *congestion*, but when the blood

bright red in colour, flows out very fast, and especially if the superficial arteries are tortuous and rigid, it may be attributed to *rupture of an atheromatous artery.* Epistaxis also occurs from *hæmophilia.*

2. **Discharge from the nose** varies much in its characters; it may be very thin and watery, mucous, mucopurulent, purulent, sanious, mixed with foul-smelling crusts, odourless, or horribly offensive. Mucous and mucopurulent discharge is caused by acute and chronic catarrh, and by mucous polypi; purulent discharge may be due to empyema of the antrum, to alveolar abscess bursting into the nose, to ulceration of the mucous membrane of the nose in ozæna, or to suppuration of the frontal sinuses; an abscess of the brain may discharge through the nose; a very thin watery discharge is caused by polypi in the antrum, and also by escape of cerebro-spinal fluid; sanious pus indicates ulceration; great fœtor of discharge indicates retention of the matter in the nose and its decomposition, and it is usually associated with ulceration of the mucous membrane or necrosis.

Something may be learnt from the mode of escape of the discharge; where this is constant it is probably from the nasal cavity itself; where more or less intermittent it points to the fluid accumulating in some neighbouring cavity, and from time to time escaping into the nose; if it is ascertained that the flow of fluid is greatest when the head is resting on the opposite side it strongly indicates that it is secreted in the antrum; when position has no influence upon the flow it may come from the frontal sinuses, and the bone should be examined for signs of distension of this cavity; headache also should be enquired for. Increased discharge in damp weather is often observed in mucous polypi.

3. **Obstruction of the nose** is indicated by a "nasal" tone of voice, the patient's inability to blow

or sniff up through the affected nostril when the other is compressed, and sometimes also by epiphora. It may be due to displacement of the walls of the nose from fractures and other injuries, to outgrowths from the walls or neighbouring cavities into the nasal fossæ (swelling of mucous membrane, polypi, hæmatoma, abscess, and sarcoma of upper jaw, etc.); and to foreign bodies blocking up the passage; these may be introduced from without, or slowly formed *in situ* (nasal calculi). Similar obstruction to respiration is also due to adenoid vegetations in the choanæ. With mucous polypi the obstruction is greater in damp than in dry weather.

4. **Deformity of the nose** may be *congenital* (when it usually consists in lateral deviation of the septum nasi), or *acquired;* when the latter it is either *traumatic*, the direct result of the violence, or *idiopathic*, occasioned by destruction of more or less of the bony framework of the nose and collapse of that feature, or by distension of its cavity by the progressive growth of a tumour within it. The distinctions between these forms is therefore quite obvious. When the nose is greatly widened transversely, and the eyes pushed outwards and separated from each other, the deformity, which may reach a hideous and exaggerated degree, is known as "frog-face."

Examination of the nose.—The nose should first of all be examined externally to detect any alteration in its contour. Compressing one nostril with his finger the surgeon should request the patient to sniff strongly through the other, when the fact of any obstruction will be at once made apparent; the second nasal fossa must then be similarly investigated. Then placing the patient facing a good light the surgeon should gently press up the tip of the nose, when he will be able to see the anterior nares and the septum, and detect deviation of the septum, ulceration of the

anterior nares, or a presenting polypus. To examine the cavity of the nose a speculum should be introduced, and a strong light thrown in by means of a mirror; if any growth or obstruction be seen, a probe should be passed up to it to ascertain its consistence, and an attempt should be made to move it. The posterior nares may be examined by the finger thrust up behind the soft palate, or by "posterior rhinoscopy," a small mirror being introduced into the pharynx behind the velum, and illumined as in laryngoscopy; if the patient be under the influence of an anæsthetic the surgeon may be able to pass his little finger into the nose from the front.

The diseases of the nose will, by means of this examination, readily be divided into those in which there is obvious obstruction to respiration, and those in which there is discharge only, the nasal fossæ being free. The cases in which the discharge has a very offensive penetrating odour are known as cases of ozæna.

A. **There is an inodorous discharge from the nose without obstruction.**—If the discharge be mucous or mucopurulent, it is known as *chronic coryza.* Where this occurs in infants, and leads to difficulty in sucking, and snuffling respiration, "the snuffles," it is a characteristic feature of *inherited syphilis.* When met with in older children, or young adults, and the mucous membrane is found swelled and congested, it is probably due to *struma*, and other evidences of this diathesis should be sought. If fissures and small ulcers are seen in the mucous membrane, it is probably *syphilitic*, and the patient should be carefully examined for evidences of secondary syphilis; *mucous patches* may be found in the nose. In middle-aged and elderly persons the lining of the nostril may be found red and irritable, with dry adherent scabs, or thin watery discharge (*eczema*); such patients are often gouty.

If the discharge be purulent and continuous, examine the floor of the nose carefully for a sinus, and look at the upper incisor teeth; if such a sinus be found, and one of the teeth be carious and tender, it is a sinus left by an *alveolar abscess*. If the discharge of pus be more abundant, and occur periodically, especially when the patient lies down on the opposite side, or blows his nose violently, it is probably an *empyema of the antrum*. If any of the upper teeth are carious this will confirm the diagnosis. In these cases the nasal cavity is healthy, and there is usually no distension of the antrum; the patient may be conscious of an unpleasant smell, and of a nauseous taste in the morning from the pus trickling into his pharynx. If there be a periodical discharge of pus, preceded by headache and sleeplessness, and unaffected by position, it is probably due to *suppuration in the frontal sinus*; any bulging of the walls of the sinus forwards, or into the orbits, will establish this diagnosis.

If there be a constant or intermittent trickling of thin watery fluid from one nostril, and the nasal cavity is quite free, a *polypus in the antrum* must be suspected; if the fluid run out more quickly when the head rests on the opposite side, the diagnosis is strongly confirmed.

B. **There is ozæna.**—Enquiry should be made as to a history of injury, syphilis, and struma, as either of these conditions may induce ozæna. In some cases the history does not reveal any of these causes, and then the affection is known as idiopathic, or spontaneous ozæna, or better, "atrophic catarrh"; by some this would be called "true ozæna." In all cases a probe should be carefully passed to detect bare bone, as necrosis is a very frequent cause and complication of ozæna. Syphilitic ozæna is far more rapidly destructive than is the strumous form, often leading quickly to perforation of the septum and falling-in of the nose; while, after months or years of strumous ozæna, only ulceration of the mucous membrane may be detected. It must not be forgotten that the impaction of foreign bodies may lead to a fœtid discharge.

C. **There is obstruction in the nasal fossa.**

(1) If the cavity is seen to be filled up with a yellowish or grey soft body which yields and moves before a probe, or moves with strong respiration, it is a *mucous polypus*. These polypi are often multiple, they grow slowly, never cause marked deformity of the nose or frequent and profuse hæmorrhages; they may cause epiphora, and loss of smell; they occasion more distress in wet than in dry weather.

(2) If on examining the cavity a soft red mucous surface is seen projecting from the outer wall of the nose, which is not moved by the probe or by respiration, it is to be distinguished as *hypertrophy* of the mucous covering of the inferior turbinated bone; it is frequently seen in chronic coryza, and might be mistaken for a polypus.

(3) If the nose is found to be obstructed by a deep red or livid mass, firm to the touch, of steady growth, which has been frequently attended with severe epistaxis, the surgeon may diagnose *fibrous polypus*, which should rather be spoken of as a *sarcoma*. This disease is most often seen in young subjects, and it causes great distension of the nasal fossæ, spreading through the septum, widely separating the eyes, filling the antrum, and projecting into the pharynx and mouth. The surgeon should endeavour by his probe or finger to find the point of attachment of the polyp; it may spring from the base of the skull and grow through into that cavity, causing coma and death.

(4) *Deviation of the septum* to one side may cause unilateral obstruction; it will be at once recognised by inspection, and especially by noticing that there is a

hollow in one fossa corresponding to the projection in the other.

(5) Where the septum is found projecting into one fossa without a corresponding depression on the other side, it is a tumour of the septum. Examine whether it is solid or fluid. If fluid and quickly formed, and attended with much pain and redness, it is an *acute abscess*. If fluid, chronic, comparatively painless, and not attended with œdema, it is a *chronic abscess*. If the swelling is firm and solid, but slightly yielding, it is probably an *enchondroma*, while if of stony unyielding hardness, it is an *osteoma*. (For *Hæmatoma of the septum*, *see* page 112.) If a firm rounded substance is found in one or other nasal fossa, not attached to either wall, it will be diagnosed as a *foreign body*. There may be a history of its introduction, or its examination after removal may show it to be a pea, small marble, or wad of paper, or some similar substance. If, however, it be found calcareous in nature, it is a *nasal calculus;* these calculi may develop round foreign bodies, which are then found in their interior.

Warts are sometimes seen growing from the mucous membrane; their fine branching surface at once distinguishes them from other tumours.

When the tone of voice indicates nasal obstruction, which is found not to be complete, and the nasal fossæ are free, a careful examination of the posterior nares and choanæ should be made, and if a mass of soft nodules be found there it will be recognised as *adenoid vegetations*, or hypertrophy of the adenoid tissue of the part. This is usually met with in delicate young persons, often in conjunction with hypertrophy of the tonsils; it causes a characteristic flattening of the nostrils, breathing through the open mouth, deafness, noises in the ears, slight discharge of blood into the pharynx in the morning, and excess of mucus in the pharynx, and sometimes chronic coryza.

CHAPTER XXIX.

DIAGNOSIS OF DISEASES OF THE MOUTH, TONSILS, FAUCES, AND GULLET.

The mouth.—The inside of the cheek may be the seat of *mucous patches*, of white patches of thickened epithelium (*ichthyosis*), exactly like and generally accompanying the same affection of the tongue; of *syphilitic ulceration*, and of *epithelioma*. The syphilitic ulcers are irregular, sinuous, often serpiginous, with raised sharply-cut edges, and leave firm depressed cicatrices.

In the floor of the mouth *syphilitic* and *epitheliomatous* ulcers are sometimes found. On passing the finger along the groove between the tongue and the jaw a hard, slightly tender swelling may be found; this is a *salivary calculus*. The patient will usually complain of pain and stiffness about the part, and the submaxillary gland may be found enlarged.

A fluctuating tumour under the front part of the tongue, pushing up that organ and interfering with its movements, covered with thin healthy mucous membrane, and having a translucent bluish appearance, is a *mucous cyst* or *ranula*.

If a fluctuating tumour in the floor of the mouth involve the tongue to a greater or less degree, be deeper in position than a ranula, and project and give fluctuation in the submaxillary region, it is a *sebaceous* or *dermoid cyst*.

A soft lobulated movable tumour in this situation is a *lipoma*.

The palate.—A narrow, highly arched palate is one of the effects of *inherited syphilis*. *Cleft palate* may be limited to a cleft of the uvula, or of the whole

soft palate; or the fissure may reach forwards along the hard palate up to the alveolar process, or it may extend through it on one or on both sides of the intermaxillary bone. Rarely, small clefts are seen in the posterior part of the hard palate only.

If the soft palate be of a bright red colour, and the patient experience little or no pain in it, examine the patient for other signs of *secondary syphilis*. If in the reddened mucous membrane small raised papules be seen, or superficial ulcers of the tonsil, the diagnosis is more certain. Oval or circular raised patches, with a pale blue, moist surface are *mucous patches*. If an ulcer of the tonsil have red swelled or undermined edges, and a shreddy base, suspect tubercle, and if there are similar ulcers on the tongue, or the patient be phthisical, or the discharge contain the tubercle bacillus, it is certainly a *tubercular ulcer*. (*See* page 426.)

Perforating ulcers extending quite through the soft or hard palate are *syphilitic*. They may be met with in various stages, with swelled reddened or sloughy edges, or granulating; or the surgeon may find the smooth cicatrised perforations which they leave behind. Firm circumscribed swellings of the palate, showing a tendency to soften, are *gummata*.

If an ulcer be found behind the last molar tooth and spreading up on to the palate, healing by one edge and leaving a hard depressed scar, it is to be recognised as a *serpiginous syphilitic ulcer*.

Extensive ulcers are sometimes seen involving the soft palate, and spreading to the tonsils and pharynx, covered with a foul grey slough, and leading to great destruction of tissue, and subsequent contraction; these are to be diagnosed as *syphilitic*. They will be distinguished from diphtheria or scarlatina maligna by the absence of the acute history and the other special features of those diseases.

When, on examining a throat, smooth rounded

perforations in the hard or soft palate, or wide destructions of the arch of the palate, or extensive cicatrices are found, they are to be taken as evidence of past *syphilitic ulceration*. The cicatrisation may shut off the nose from the mouth, or greatly narrow the orifice leading to the larynx or œsophagus.

Hard chancre and *epithelioma* are occasionally met with in the palate. If a patient be taken acutely ill with dysphagia and dyspnœa, and the throat show some swelling from the outside, while the soft palate is greatly swollen and œdematous, so as to conceal the back of the pharynx, the condition is *acute œdematous pharyngitis*.

The tonsils. — A. **Enlargements.** — If the swelling be acute the surgeon must inquire whether it is increasing or diminishing, and he should notice whether any part of it is "pointing," soft to the touch, or even fluctuating, and whether there is surrounding œdema. Where the swelling is chronic, its duration, its mode and rate of growth, its consistence, the limitation of the enlargement to the tonsil or its extension to the palate and pharynx, and the state of the cervical lymphatic glands are the points to be observed.

(1) Where the tonsil is acutely swelled, deep red in colour, with œdema of the anterior pillar of the fauces, and the patient is febrile, with great pain in swallowing and discomfort from sticky mucus about the fauces, it is *acute tonsillitis*. If the swelling be increasing, with severe throbbing pain, and part of the tonsil is found pointing or fluctuating, there is an *abscess in the tonsil*. Where small yellowish-white pea-like swellings, or ulcers formed by the bursting of these abscesses, are found on the surface, it is *follicular tonsillitis*. These follicular ulcers may coalesce into large ulcers with undermined and swelled edges.

(2) Where the tonsil is chronically enlarged the

surgeon has to distinguish between hypertrophy and malignant tumour. If the enlargement affect both tonsils, or, affecting only one, is limited to the tonsil, which is of a healthy pink colour, often much pitted on the surface, enlarging slowly, or quite stationary, and not causing pain unless it becomes acutely inflamed, it is *hypertrophy*.

(3) Where one tonsil is enlarged, the swelling being steadily progressive, and attaining a large size, involving the pillars of the fauces as well as the tonsil, and is covered with livid mucous membrane which may ulcerate on the surface, and there is enlargement of the lymphatic glands at the angle of the jaw and down the neck, the disease is *malignant tumour*. These growths are usually softer than hypertrophy. Both sarcoma and carcinoma affect the lymphatic glands, and to distinguish between them may be impossible. In young persons the disease will certainly be *sarcoma*, but in persons past middle life it may be *carcinoma;* this is much the rarer of the two diseases. The tumours when large may ulcerate, fungate, and bleed freely.

B. **Ulcers.**—(1) Small circular yellowish-grey ulcers of acute origin, formed by the bursting of tiny abscesses, are *follicular ulcers*.

(2) A superficial ulcer, attended with slight redness of the fauces and no induration, is probably a *secondary syphilitic ulcer*.

(3) If the ulcer be deep and excavated, with abrupt sharply-cut edges, and a dirty-grey base, without well-marked surrounding induration or glandular enlargement, it is a *gummatous ulcer*.

(4) If the ulcer be single and have an indurated base and thick everted edge, with extensive surrounding induration, and spread from the tonsil to the tongue or palate, and the glands at the angle of the jaw be enlarged, it is an *epithelioma*. This disease will be met with only in persons after middle life.

(5) If the ulcer be single, indolent with well-marked firm induration around it, and several glands under the jaw and down the neck be enlarged, hard, but quite movable, it is a *hard chancre*. The occurrence of secondary manifestations will, of course, corroborate the diagnosis. The tonsil is a not infrequent seat of *mucous patches*, which have their usual characters.

The pharynx and œsophagus.—The pharynx may be the seat of *syphilitic ulceration, sloughing*, and *cicatrisation*, and of *epithelioma*. Pendulous *fibrous tumours* of the pharynx are very rare, and are diagnosed when they are brought into the mouth. The affections requiring further notice are abscess, caries of the spine, and stricture.

1. When a patient complains of dysphagia and dyspnœa the surgeon should examine the pharynx carefully with his finger, and if he find a boggy or soft fluctuating swelling he will recognise it as a *retropharyngeal abscess*. If there be evidence of disease of the cervical spine (*see* page 439), any indication of dyspnœa or dysphagia should suggest this lesion.

2. When an irregular dirty ulcer is seen at the back of the pharynx, the surgeon should probe it carefully. If he feel bare dry bone he should diagnose *spinal necrosis*. This is nearly always syphilitic.

3. If a new-born infant be found to suck well, but unable to swallow, the milk flowing out of his mouth, and at the same time rapid emaciation occur, a *congenital stricture of the œsophagus* is to be suspected. The surgeon should gently pass a small soft well-oiled catheter down the pharynx, and if he meet with obstruction, this will establish the diagnosis, and also localise the stricture. If the milk be regurgitated in quantity, it indicates that the pharynx is dilated into a pouch above the stricture. Regurgitation of milk from the stomach is distinguished by the curdling of the milk and the acid reaction of the returned fluid.

4. When an adult complains of difficulty or inability to swallow, the surgeon must first of all determine whether there is any real obstruction or not, and should see for himself how the act is performed, and notice whether fluid and well-chewed bread can be slowly swallowed. He should inquire as to the apparent seat of obstruction, and the duration and course of the symptoms. He should then look at the general state of the patient's nutrition, and examine the neck and chest carefully for evidences of tumour of any kind. Should there be no evidence of tumour or aneurism, he should proceed to examine the part with a bougie. The patient being seated, and with the head at right-angles to the spine, a well-softened lubricated bougie should be gently passed to the back of the pharynx and on down the gullet; on encountering resistance no pressure should be made, but the bougie may be withdrawn a little, and its direction slightly altered. Smaller bougies may be passed until one is found to pass through and enter the stomach.

(*a*) If the patient be a young or middle-aged woman, of "neurotic," or obviously "hysterical" temperament, and the dysphagia came on suddenly, without any obvious cause, and at once became complete, or is complete for certain articles only, the case may be regarded as *hysterical dysphagia*. This diagnosis will be confirmed by a history of "globus hystericus," and by the fact that the patient can swallow certain articles, or swallows well when unobserved; and it will be rendered certain if a full-sized bougie passes readily into the stomach.

(*b*) If the dysphagia have come on gradually, extend to all substances equally, and the patient have become emaciated and anæmic, while the bougie is arrested in some part of the gullet, there is an *organic stricture*. Should there be a history of an injury or of

the swallowing of corrosive fluid, or hot liquid, and especially if the patient be young and no tumour be felt, and the lymphatic glands are unaffected, it may be diagnosed as *traumatic* or *cicatricial stricture*. If the patient be at or past middle life, and a tumour be felt in the neck, or lymphatic glands be found enlarged, or blood-stained mucus be hawked up or come up on the bougie, it is to be diagnosed as *malignant stricture*.

(*c*) Should there be a bronchocele or an aneurism of the aorta, the dysphagia may be attributed to external pressure unless there are very clear indications of stricture. The surgeon must never pass a bougie unless reasonably satisfied that there is no aortic aneurism. Regurgitation of food, unaltered and not acidulated, indicates the formation of a pouch in the gullet above the stricture.

(*d*) Severe pain and difficulty in deglutition coming on immediately after urgent vomiting or the swallowing of a large or too hot bolus, or a sharp fragment of bone, may last for some time, being dependent upon a laceration or abrasion in the œsophagus.

Repeated hæmorrhage from the pharynx, without any obvious cause, is probably due to *œsophageal nævus*.

CHAPTER XXX.

DIAGNOSIS OF DISEASES OF THE TONGUE.

The frænum linguæ may be too short and prevent the tongue being protruded beyond the teeth or moved about in the mouth; this is the condition known as *tongue-tie*. The tongue may also become adherent in the mouth through the cicatrisation of ulcers. Other congenital malformations of the tongue are fissures in