

A *sinus* in the gum should be carefully probed, and the adjacent teeth explored, and if the probe lead down to a hard smooth surface it is probably a fang of a tooth. The probe may, however, pass over a more extensive surface of sequestrum, *necrosis of the alveolar process*. If, on looking into the mouth, the surgeon find the gums receded from the teeth, and the teeth loose or fallen out, and if the alveolar process be bare and exposed, with pus welling up alongside it, he will at once diagnose *necrosis*. This may have resulted from injury in tooth extraction (*traumatic*), or have followed one of the exanthemata (*exanthematic*), in which case it affects the alveolar process only, is often symmetrical, and is insidious in its progress; or it may occur in one exposed to the fumes of yellow *phosphorus*, when the necrosis is apt to involve the whole depth of the bone, and to be accompanied with a great amount of swelling, and in the case of the lower jaw the formation of an ossified shell of new bone around the sequestrum. A sequestrum due to phosphorus poisoning is nearly always rough on the surface, and of a dirty brownish colour. Necrosis of the jaws is also seen as the result of *cancrem oris*.

The remaining affections of the gums may be grouped together as *tumours*. The rapidity of growth, attachment, consistence, and tendency to ulcerate are the facts to be particularly observed in such cases.

Where in an infant or young person the gum is found growing up and overlapping the teeth, or even burying them entirely, and projecting in the mouth as irregular lobed masses of firm tissue covered by healthy mucous membrane, it is a case of *hypertrophy of the gum*. This is a congenital affection, though it may not be recognised until some time after birth; it is often associated with hypertrophy of the alveolar process and premature eruption of the teeth.

If there be a small pedunculated growth from the

gum attached between two teeth, and covered with healthy mucous membrane, it is a *polypus of the gum*. If the growth be papillated or villous on the surface it is known as a *wart*. Similar warts are sometimes seen on the palate or on the tongue.

If a sessile tumour grow from the gum, being somewhat firmly but not immovably fixed to the alveolus, and it is of slow growth, very firm, painless, and covered by healthy mucous membrane, it is a *fibrous epulis*. When of large size the surface may ulcerate from pressure and friction. This is to be distinguished from a polyp by its deeper and broader attachment, and usually its greater size.

But if the tumour be firmly fixed to the alveolar process, have grown more rapidly, and especially when it has a livid colour, a lobed surface, is of soft consistence, and is found to spring from within an alveolus, it must be diagnosed as a *myeloid epulis*.

When the gum of an elderly person is found ulcerated, the ulcer slowly but steadily spreading in all directions, and having an indurated base and everted edge, it is *epithelioma*. Enlargement of the lymphatic glands will confirm this diagnosis.

A very chronic solid enlargement of an alveolus is probably caused by an *odontome* in connection with the fang of a tooth. *Bulbous odontomes* will be recognised by the white nodular enlargement of the crown of a tooth.

CHAPTER XXVI.

DIAGNOSIS OF DISEASES OF THE SPINE.

THE surgical affections of the spine may be classified into those attended with deformity of the spine, disease of the spine without deformity, and tumours over

the spine. The spine should therefore first be examined for deformity, and if none be present, then for disease without deformity, while tumours of the spine require a special study.

A. Examine the spine for deformity.—The patient should stand up with heels together, arms hanging, and the eyes directed straight in front; if an infant it must be examined in the sitting posture. The surgeon should first observe the natural antero-posterior curves of the spine, noting whether they are increased or diminished, or replaced by a general curve of the spine backwards, or interrupted by an abrupt projection of one or more spines. He should next determine whether there is any rotation of the vertebræ one upon another. For this purpose the prominence of the angles of the ribs, and of the lumbar transverse processes on the two sides, must be carefully compared, and the height and prominence of the scapulæ, the hollow of the waist on each side, and the apparent prominence of the iliac crest must be noted. Then, turning the patient round, the surgeon should notice whether one breast is more prominent than the other, or either side of the chest is flattened, and if the two anterior iliac spines are on the same level, or one is lower and more prominent than the other. Standing behind the patient the surgeon should then ask him to stoop while keeping the knees straight, and should notice whether he bends the spine freely and straight forwards, or whether the movement is restricted and oblique, and makes the projection of the ribs on one side more obvious than before. All these are signs of rotation of the spine, and it must be impressed upon the student that the diagnosis of scoliosis must depend upon the presence and degree of this rotation and not upon the lateral deviation of the tips of the spinous processes. Having made this examination carefully, the tips of the spines

should be traced from above downwards to notice whether they are in line or whether they are deflected to one or other side; the usual and convenient way of doing this is to place an ink mark on the skin over each spine-tip and connect the dots by a continuous line. The patient may then be placed on his face on a flat couch, or suspended by his head and axillæ, and the effect upon the spine of this alteration in position observed.

(1) If the natural curves of the spine are lost, and in their place there is a general convexity of the spine backwards which disappears when the child lies down, and is increased or diminished by movement, it is due to *spinal debility*. In young children this is usually due to rickets, and if the long bones are bent with swellings over their epiphyses, and the fontanelles are found open too late, etc., it is to be diagnosed as a *rachitic spine*. In other cases it is met with in patients convalescing from severe illness which has kept them in the horizontal position for a long time.

(2) But if such a general posterior curve of the spine be a fixed curve, unaltered by recumbency or movement, and if the movements of the spine be greatly diminished or almost *nil*, and the chest be also fixed, the breathing being entirely diaphragmatic, it is due to *spondylitis deformans*, a disease closely resembling, if not identical with, arthritis deformans. This condition is generally attended with severe pain. It may be met with in young adults, but is more frequent in later life. It will be distinguished from caries of the spine by the absence of tenderness to vertical pressure, by the pain being worse at night in many cases, and sometimes by the patient being conscious of a grating in his spine during movement.

(3) If there be an abrupt curve of the spine backwards, or a projection posteriorly of one or more of the spinous processes, and the spine above and below

be found curved forwards in compensation, it is a case of *Pott's disease* or *angular curvature*, or better, *caries of the spine*. Where the projection is great the evidence of fall of the upper part of the spine (such as sinking of the head between the shoulders) is obvious; where the disease is active there will be the signs of spinal caries mentioned below. (See page 397.)

(4) Where there is a lessening of the natural curve of the dorsal region, the dorsal spine being straight, and sunk in between the scapulæ, there is rotation of the spine. If the surgeon find that on one side (say the right) the angles of the ribs are more prominent posteriorly than on the other, and that the scapula is higher and more prominent, that the right side of the waist is hollow, and the iliac crest apparently prominent, while on the left side the hollow of the waist is obliterated or less marked, but the transverse processes of the lumbar vertebræ project back, there is rotation of the spine (to the right in the dorsal region, and to the left in the loins), and he should diagnose *scoliosis*, or what is generally known as *lateral curvature* of the spine. As corroboration of this he will look for flattening of the right chest in front, and projection forwards of the left breast and of the left anterior iliac spine, and also lateral deviation of the spinous processes, to the right in the dorsal region, and to the left in the loins. The curves may be found on the opposite sides. If the surgeon rely upon the deviation of the spinous processes instead of upon the evidence of rotation he will fail to diagnose many cases, and will fail to appreciate the gravity of others. The surgeon should then examine the feet, knees, and hips, to detect any cause of inequality of length of the lower extremities which can cause obliquity of the pelvis and tilting of the spine, such as flat foot, genu valgum, or morbus coxæ.

(5) Should the surgeon find that there is lateral deviation of the spines without rotation, and that this deviation disappears when the patient lies down, he should distinguish it as a *weak spine*; this is often associated with *hysteria*, and the patient may complain of acute pain; the lack of permanence in the curve, and the absence of rotation, will distinguish it from true *scoliosis*.

(6) If the spine be curved with a long sweeping curve to one side without rotation of the vertebræ, the curve being permanent in every position, it is due to *retraction* of one side of the chest, probably from *pleurisy* or *empyema*.

B. Cases present themselves **where there is no deformity** in the spine, and the surgeon has to decide whether there is commencing caries or not, and as it is in this stage of the disease that treatment is eminently important, great attention should be given to the examination. The symptoms of caries of the spine before deformity has arisen, are *pain*, *tenderness to pressure*, and *rigidity*. The surgeon should first of all observe the patient's movements, encouraging him to walk, run, or jump off a stool or chair, pick things up from the floor, etc., and noticing whether these actions are performed easily, readily, and without restraint, or whether the patient tries to avoid all jars, keeps the spine rigid, and endeavours to transmit the weight of the body through the arms, by seizing surrounding objects, by supporting the head with the hands, or by sitting with the hands resting on the seat or the knees. The several parts of the spine can be examined by placing the hand flat on the back, and getting the patient to bend and extend the region, and noticing whether the vertebræ move one upon another, or are immovably fixed. In the cervical spine the movements of nodding the head or rotation of the head and of flexion of the spine,

should be separately investigated, as they occur at separate joints. Thus, if nodding the head be free and painless, it shows that the occipito-atloid joint is unaffected; if the face can be turned without difficulty from side to side, it shows that the atlo-axoid joint is free; and if flexion of the spine be quite free and painless, it shows that the lower cervical spine is unaffected; any one of these movements may be impossible, or very limited and painful, and this will point to disease of one or other of these regions. The surgeon must be careful to supplement this observation with an examination of the state of the muscles of the spine; if they are found tonically contracted, forming a firm mass on each side of the spine, it shows that movement of that part of the spine is painful.

Tenderness of the spine may be tested in three ways; first, by pressing with the fingers over the spinous processes. If the patient flinch and show signs of pain the surgeon should notice whether touching the skin very lightly and pinching it up without any pressure on the bone is equally painful. If it is, it indicates simple cutaneous hyperæsthesia, which is an important sign of "hysterical spine." Patients with active inflammation of the bodies of the vertebrae can often bear firm pressure over the spine. The second plan is to press vertically down through the spine, when, if there be active disease in the bodies, pain will be caused. The patient may be standing or sitting; pressure is best made upon the head, but when the suspected region of the spine is the lumbar, the surgeon may press with his hands upon the shoulders and the top of the chest. At first the pressure should be quite light, but if this fail to elicit pain, it may be gradually increased up to heavy pressure, and if this be borne without any evidence of pain, inflammation of the bodies of the vertebrae is excluded. The third plan

is to take a spoon dipped in hot or iced water and press it against the spine, and if it be found at one part to cause wincing or other expression of pain, that region is said to be hyperæsthetic to heat or cold. This sign is of little practical value. *The pain* in disease of the spine may be local, or referred to the extremity of the nerves leaving the diseased part of the spine; such pain may be complained of in the head or at the shoulders, at the epigastrium, or down the legs, and Sayre has particularly pointed out the importance of such pain in children, and the necessity of a careful examination of the spine where a child has headache, cough, or belly-ache.

(1) If the surgeon find that one part of the spine is kept rigid, that attempts to move it cause pain which the patient instinctively avoids, that vertical pressure down the spine also causes pain at the same spot, and that for this reason the patient avoids all vertical jars and shakes and pressure upon the spine, he should diagnose *caries of the spine*, even before there is any angular curvature from destruction of the bodies of the vertebrae. Pain referred to the extremities of the nerves arising from the affected region of the spine, will corroborate the diagnosis.

(2) Where, however, the patient complains of a fixed severe pain in the spine, and the skin of this region is found hypersensitive to pressure, or to heat or to cold, but vertical pressure through the spine is not resented, and the spine is not rigid at the painful part, the disease is *hysteria*. Such cases are usually met with in young women, but are not limited to them; and there may be other hysterical manifestations. The surgeon should endeavour to distract the patient's attention from his examination, when he will probably find that the painful part can be freely manipulated and pressed upon without causing signs of

pain. In these cases, too, the hyperæsthesia is very superficial, being as much shown by the skin as by the subjacent bones. The patients often give a history of an injury.

(3) Where the coccyx or the joint between it and the sacrum is the supposed seat of disease, the part must be examined with some care. If the hand detect heat or swelling, and tenderness over the part, and on introducing the finger into the rectum the least movement of the coccyx is found to cause acute pain, *disease of the sacro-coccygeal joint* is to be diagnosed. This will be confirmed if there be an abscess pointing either on the outer or the inner surface of the bone.

(4) If, however, there be no local redness or heat or swelling, but the coccyx be the seat of severe pain and some tenderness, so that defæcation and examination per rectum are painful, it is to be considered a case of *coccydynia*. This affection is most common in women, and often follows an injury to the part.

(5) In all cases of *caries of the spine* the surgeon should carefully examine for *abscess*, and for evidence of *nerve lesion*. The abscess may be found at the back, but more frequently the pus runs down along the front of the spine. When the disease is in the neck the surgeon should examine the back of the pharynx, the posterior triangle, and the suprasternal notch. In disease of the dorsal spine each psoas muscle should be explored; if no swelling be detected, but either hip be permanently flexed, it indicates inflammation of the muscle (*psositis*), and suppuration will speedily follow. In disease lower down the abscesses are found in the sheath of the psoas or iliacus, or passing into the pelvis, and pointing at the buttock or the perineum. The examination of a case of *caries of the spine*, in whatever stage the disease may be, is not complete

unless a careful search be made for abscess connected with it. The signs of nerve lesion are pain and hyperæsthesia, twitchings and paralysis. They are due to inflammation of the nerves, or to compression of nerves or the spinal cord itself, and an attempt should be made to distinguish these conditions. If the patient complain of severe pain along certain nerves, and the painful region be hyperæsthetic, and if to this there be added muscular twitchings, these symptoms may be attributed to *neuritis*. Where there is considerable deformity of the spine, with paralysis of the lower limbs which is lessened or altogether passes off when the patient is suspended by the head or lies prone, it is to be attributed to *compression of the cord*. If, however, the paralysis be limited to the muscles supplied by certain nerves issuing from the diseased part of the spine, it is to be attributed to *compression of nerves*. If the patient suddenly become paralysed without any pain or hyperæsthesia or twitchings, and without any increase in the deformity to explain it, the cause may be diagnosed as a sudden *hemorrhage* compressing the cord.

(6) When *caries of the spine* undergoes resolution it becomes necessary to be able to decide whether the disease has subsided, or is still active. The sign upon which the surgeon is to rely is the absence of tenderness of the spine to vertical pressure. When a patient can bear firm and even heavy vertical pressure through the affected part of the spine, and moves freely and without fear, and can run or jump off a stool or chair without any pain, the surgeon may declare him free from active spinal *caries*. Rigidity may be permanent owing to welding together of the diseased bones. The tests must be applied carefully and gradually, and the surgeon must feel his way to the application of the more crucial ones; if this caution be not observed harm may be done when the disease is not entirely at an end.

C. Tumours of the spine.—These are to be separated into the *congenital* and the *acquired*. In examining a *congenital tumour* of the spine, the surgeon must first endeavour to ascertain whether it communicates with the spinal canal and the spinal membranes. For this purpose the following points must be observed: (1) *Position*. A central position is characteristic of all intraspinal tumours, and if a tumour be found not to occupy the median line it is very unlikely that it communicates with the spinal canal. (2) *Condition of the spine*. If a bony rim is to be felt around the sessile base of the tumour it favours its intraspinal nature, whereas if the laminae and spines are to be traced entire beneath the swelling it shows it to be extraspinal. (3) *Reducibility of the tumour* is a very important sign of its intraspinal origin, especially if the reduction of the tumour leads to increased tension of the fontanelle or to nervous symptoms. (4) *Increased tension of the tumour* during crying or strong expiratory efforts is of similar import; this, however, when unaccompanied by reducibility of the tumour, may be due to proximity of the swelling to the rectum, or other abdominal viscera. (5) *Complications*. Of these the most important are hydrocephalus, club-foot, paralysis of the lower extremities or of the rectum or bladder, and a thinning, or entire absence, of the skin over the tumour. (6) The tumour should be examined with transmitted light, and if an opaque band or cords are seen in it corresponding to the spinal cord or nerves it indicates the intraspinal nature of the tumour. (7) The *contents of the tumour* may be examined, and if found to correspond with the cerebro-spinal fluid this sign will prove the swelling to be intraspinal. By these signs the first step in the diagnosis can be taken. Extraspinal tumours must be examined to determine whether they are solid, fluid, or composite, and with what part of the spine or pelvis

they are connected. In the case of tumours of the sacrum or coccyx the motions should be examined to see whether any of the contents of the tumour pass into the bowel, and if so a close relation of the tumour to the bowel may be predicated. The surgeon will, of course, examine the interior of the pelvis by the finger in the rectum.

Congenital tumours.—(a) If a congenital tumour situated over and fixed to the middle line of the spine be found to fluctuate, to become tenser when the patient cries or strains, and to be reducible within the spine by gentle pressure with increase of the tension of the fontanelle, or of a second similar tumour if it exist, or with the production of nervous symptoms, it is a *spina bifida*. This diagnosis will be corroborated by detecting the edge of the defect in the laminae of the vertebræ, and by finding any of the frequent complications of this affection (hydrocephalus, talipes, or paralysis), by an examination of the fluid in the sac (*see* page 83), by detection of the spinal cord or membranes in the sac, or by deficiency of the skin over the sac.

(b) If a congenital tumour fixed to the spine be found to fluctuate in every part, and if the coverings be thin or translucent, but the tumour incompressible and unaffected by the cries or straining of the patient, and unaccompanied by hydrocephalus, talipes, or paralysis, it is a *false spina bifida*, or a hernial protrusion of the spinal membranes, which has become shut off from the theca vertebralis.

(c) If a congenital tumour be found growing from the sacrum or coccyx, sessile, in parts fluid, in parts solid, and varying much in consistence in different situations, extending into the pelvis, and perhaps receiving an impulse from the rectum, or communicating with that viscus and discharging into it fluid material, it is to be recognised as a *congenital sacral tumour*.

(d) Where a congenital tumour of this region is felt to contain firm masses of cartilage and bone, and has ill-developed or perfect fingers or toes appended to it, it is a *fœtal tumour*.

(e) A solid congenital tumour of the spine with lobulated outline and of soft consistence is a *congenital lipoma*. Such a tumour may extend into the spinal canal, and will then be very firmly fixed to the spine and may be complicated with paralysis of the lower extremities.

(f) If a congenital tumour over the spine be found to be reducible by compression, and to fill out with coughing or straining, but does not fluctuate, and is not translucent, it is a *nævus*. If the skin over it be nœvoid or thinned, and allow the blue colour of the blood in the tumour to be seen through, the diagnosis becomes easier.

Acquired tumours of the spine offer no special features, and are to be recognised by common characters. In this region, *sebaceous cysts*, *lipoma*, *fibroma*, and *sarcoma*, are met with, and a *bursa* may develop over the vertebra prominens, and if irritated may inflame and suppurate; it presents the signs of bursal cysts in other situations. In all these cases the surgeon must endeavour to trace the spinous processes beneath the tumour, and so convince himself of the integrity of the spinal column. Very large *abscesses* in connection with caries of the spine may be met with in either the neck, back, or loins.

CHAPTER XXVII.

DIAGNOSIS OF DISEASES OF THE LIPS AND FACE.

THE surgical affections of this region are very numerous, and they may be considered in the following order.

A. Ulcers of the lips and face.—Notice particularly the age of the patient, the duration and mode of onset of the disease, the character of the ulcer, whether single or multiple, whether the edge is undermined, punched out, or thickened, whether the base is indurated, smooth, sloughy, or irregular and fungous, and the condition of the connected lymphatic glands.

(1) If the ulcer be single, of short duration, with sharply defined induration of the edge and base, the surface being abraded, ulcerated, or covered with a very thin whitish slough, and several of the glands are enlarged and indurated, being freely movable under the skin, it is a *hard chancre*. This affection is most common on the lips, and in young women. The occurrence of a papulo-squamous eruption on the trunk and fauces, and the other signs of secondary syphilis will confirm this diagnosis.

(2) If the ulcer commenced in early life, and has been very chronic and slow in its progress, having been preceded by soft raised "apple-jelly-like" nodules, some of which are also found scattered around it, it is *lupus*. There may be other signs of struma. The lymphatic glands of the neck may be quite free from disease, and if enlarged this is not secondary to the lupoid ulceration, and is not limited to the immediately associated glands. The discharge often forms adherent crusts.

(3) If the ulcer commenced in adult life, is subacute or rapid in its course, having a punched-out appearance, with sharply-cut edge and sloughy base, without any affection of the lymphatic glands, and originating in firm, red, angry-looking nodules, which quickly break down, it is *tertiary syphilis*. Other evidences of syphilis should be sought for to confirm the diagnosis, which will also be supported by the results of treatment. Syphilis is much more and more rapidly destructive than lupus.

(4) If the ulcer have commenced in middle or late life in a small crack or wart which has steadily spread until an ulcer has formed, and if the base and edge of the ulcer are thickened and indurated, the former being irregular or granular in appearance, and if the connected lymphatic gland is enlarged, it is *epithelioma*. This ulcer is rarely other than single, though the author recently treated a case of double primary epithelioma of the lower lip. It progresses steadily, and usually rapidly.

(5) If an ulcer occurring in a person past middle life, slowly and steadily progresses, destroying all tissues alike in its progress, and making a great chasm in the face, with an edge which exhibits a narrow line of induration, and a smooth, clean, or slightly granular base, the lymphatic glands not being enlarged, it is *rodent ulcer*. Such an ulcer may exist for many years; it may even heal up and then break out again. It usually commences at the junction of skin and mucous membrane or in a wart or pimple.

B. Acute inflammation and gangrene.—There are three varieties of acute gangrene of the face that must be distinguished from one another, viz. *cantharum oris*, *charbon*, and *carbuncle*. (See page 351.) *Facial carbuncle* is a very serious form of the disease; the swelling is attended with more bogginess and œdema than in other situations; the slough is to be clearly

recognised as subcutaneous in distinction to the cutaneous slough of charbon. The facial vein may be felt thrombosed and inflamed, and abscesses may form in its course if the patient survive the blood-poisoning which usually attends this condition.

C. Sinus.—If a sinus in the cheek discharge a thin watery fluid, which streams out during mastication, it is a *salivary fistula*. The nature of the fluid should be tested by its action on starch (page 112). The patient will notice a dryness of the mouth on the same side. If the sinus be puckered in and adherent to the bone, it should be carefully explored with a probe, when necrosed bone or a carious tooth will probably be struck. In all such cases the teeth should be carefully examined. (See page 388.)

D. Fluctuating tumours.—If a tumour immediately follow an injury, and be attended with bruising of the skin, it is a *hæmatoma*. These tumours sometimes give a curious creaking sensation to the fingers. If preceded and attended by the signs of acute inflammation it is an *abscess*. If chronic, painless, globular in outline, adherent to the skin, and freely movable over the deeper structures, it is a *sebaceous cyst*. These are most common in the region of the whiskers. If like the last, but not adherent to the skin, and especially if it occur in a young person, it may be diagnosed as a *dermoid cyst*. If in the cheek, and becoming more tense during mastication, and associated with dryness of the mouth on the same side, it is a *salivary or parotid cyst*. If situated under the mucous membrane of the lip, being freely movable, and of a bluish colour, it is a *mucous labial cyst*.

E. Swellings in the parotid region.—This region is bounded above by the zygomatic arch, below by the angle of the jaw, behind by the edge of the sterno-mastoid muscle, and in front it reaches forward over the masseter muscle.

(1) A solid swelling, quite superficial, freely movable over the deeper parts, and ovoid in shape, is an *enlarged lymphatic gland*.

(2) A general acute swelling of this region, with tenderness and pain, increased by mastication, and fever, is *acute parotitis*. If occurring primarily, affecting both glands, and spreading to the submaxillary and sublingual glands (in some cases), and accompanied with a mild febrile course, it is *mumps*. This generally occurs in children or young persons, and may attack several members of a family. The testicle, ovary, or mamma may be affected by metastasis. Parotitis is also met with as a sequela of acute specific fevers, or in septicæmia and pyæmia. If the surface become œdematous, and the pain and tension increase, and especially if rigors occur or fluctuation can be detected, the surgeon will diagnose a *parotid abscess*.

(3) A tumour situated below and in front of (sometimes behind) the lobule of the ear, projecting outwards, but passing deeply in between the ramus of the jaw and the mastoid process, and being more or less fixed on its deep aspect, is a *parotid tumour*. These tumours vary in shape, but are usually coarsely lobulated. They may be moderately soft, firm, or very firm, and they may vary in consistence in different parts. These differences are associated with varieties of structure, myxomatous tissue being soft, fibrous and sarcomatous tissue being firm, and cartilage being very firm or hard; all these structures, and sometimes also adenoid tissue, are found in varying proportions in these tumours.

F. Other affections of the lips.—A chronic thickening of the lip, leading to eversion of its red border, and associated with slow superficial ulceration of its mucous surface, is *strumous hypertrophy*. Small firm shot-like nodules felt under the mucous membrane

of the lip are *adenomata* of the mucous glands of the lip. Larger tumours in this situation, if fluid, are *mucous cysts*, and if solid are mixed tumours, often containing myxomatous tissue and cartilage as well as glandular tissue and small cysts; they are known as *labial tumours*. Groups of small clear vesicles on a bright red base, drying up into a thin yellow or brown scab, and attended with itching and smarting, are *herpes*. These may be found in association with an acute inflammatory affection, such as pneumonia, or accompanying slight gastric disturbance. Chronic fissures at the angle of the mouth, with a watery discharge, are *syphilitic rhagades*, they are often seen in children the subjects of inherited syphilis, and they leave behind puckered scars. Flat slightly raised patches of mucous membrane of a pale bluish white colour are *mucous patches*. Irregular fissure-like ulcerations of the mucous surface, chronic in character, and painful, are *syphilitic ulcers*. Corroboration of the diagnosis in these last three cases should, of course, be sought in other syphilitic manifestations. Small whitish spots on the mucous surface, which terminate in very superficial circular abrasions or ulcers, are *aphthæ*. Adjacent ulcers may coalesce; *aphthæ* are attended with pain, soreness, and increased flow of saliva. *Thrush* may be found on the lip, in the form of opaque white streaks and patches, not causing ulceration. If the white material be removed, and examined microscopically, it is found to contain the fibres and pores of a fungus, *oidium albicans*.

G. If a patient have an acute, painful, and very tender œdematous swelling over either jaw it is probably an *alveolar abscess*. The surgeon should note whether the swelling is fixed to the jaw, and then gently tapping or pressing upon the teeth in succession should determine whether there is tenderness in any one of them, and passing his finger into the mouth should feel

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 fetor 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