GENERAL EXAMINATION (II) — Hands

EXAMINATION

Look for abnormal resting posture, tremor or flap (p. 141), skeletal deformity or muscle wasting, and abnormalities of hand size, shape or colour. Feel for abnormal temperature or sensation (p. 90). Have the patient move the fingers to see if there is abnormal movement of joints, specific muscles, or functional groups of muscles (p. 106).

Fig. 1 **The hands in arachnodactyly.**

Fig. 2 **Drumstick clubbing.**

Fig. 3 **Dupuytren's contracture.**

Fig. 4 **Palmar erythema.**

COMMON CONDITIONS

Acromegaly

In acromegaly the hands are large and spade-like, with a coarse skin texture. The condition is caused by excessive growth hormone production.

Arachnodactyly

Long thin fingers, or arachnodactyly, may be a feature of Marfan's syndrome, a disorder of connective tissue (Fig. 1). Other features include tallness, a fingertip to fingertip span greater than height, dislocation of the ocular lens, a high arched palate and heart lesions (commonly coarcta-tion of the aorta or atrial septal defect).

Achondroplasia

Achondroplasia is characterized by small and thickened hands, with fingers of almost uniform length. Other features include dwarfism, the trunk being of normal size but with short limbs. It is caused by defective cartilage formation.

Down's syndrome

In Down's syndrome the palm has a well-marked transverse crease. Other features include a crease between the great toe and adjacent toe, mental and physical retardation, microcephaly, slanted eyes, a large tongue and congenital heart defects (in about one-third of those affected).

Claw hand

The term claw hand implies hyperextension of some or all of the metacarpophalangeal joints, with flexion of the interphalangeal joints. Unilateral claw hand may be caused by ulnar nerve lesions, but bilateral claw hands suggest disorders such as syringomyelia (a spinal cord disease) or leprosy (a disease which damages peripheral nerves).

Clubbing

Clubbing is an increased longitudinal and transverse curvature of the nail, often with an associated loss of the angle between the proximal nail and the nail bed (Fig. 2). If well-marked, there is swelling of the soft tissue of the pulp of the finger leading to a drumstick appearance. The oedematous swelling of the nailbed is best tested by using both index fingers to press each side of the midline of the involved nailbed. A sense of fluctuation felt by one finger on exertion of pressure by the other constitutes fluctuation. An isolated increased curvature of the nails (beaking) may be a normal finding. Usually all fingers are affected to a greater or lesser extent by clubbing, although subclavian artery aneurysms are reputed to be a cause of unilateral clubbing.

Clubbing may be congenital (and of no diagnostic significance) and may become more marked with increasing age. Any recent development of clubbing is highly significant, as the causes include carcinoma of the lung, certain other intra-thoracic tumours, chronic suppurative lung disease, congenital cyanotic heart disease, infective endocarditis, fibrosing alveolotis, chronic malabsorption, inflam-matory bowel disease and cirrhosis. Chronic bronchitis or emphysema rarely, if ever, cause clubbing.

Hypertrophic pulmonary osteoarthropathy is often found in association with clubbing and is usually caused by underlying carcinoma of the lung. There is pain and tenderness around the wrists.

Dactylitis

Dactylitis is a vague non-diagnostic term denoting inflammation of a finger or fingers which leads to diffuse or bumpy finger swelling. Causes include tuberculosis or gout.

Dupuytren's contracture

Dupuytren's contracture (Fig. 3) is characterized by fibrosis of the palmar fascia or tendons which draw the fingers (especially the ring and middle fingers) into flexion. Contractures are usually present on both hands, with a degree of asymmetry. There is no obvious cause in most patients, but in some there is associated cirrhosis, alcoholism, certain occupations (vibrating tool use) or epilepsy.

Gout

Gout is a metabolic disorder of uric acid metabolism in which calcium biurate is deposited in various tissues. Chronic gout causes chalky deposits (tophi), which may ulcerate through overlying skin.

Nodules

Subcutaneous nodules, if associated with arthritis, are usually a marker of seropositive rheumatoid arthritis. Nodules may be mistaken for lymph nodes and may be attached to underlying tissue (if attached to muscle sheaths or tendons they are usually called ganglia). Less common causes of subcutaneous nodular swellings include fat deposits, xanthomas

or calcium deposits.

Heberden's nodes
Heberden's nodes are bony prominences (osteophytes) at the sides of the terminal interphalangeal joints or, less commonly, at the proximal interphalangeal joints (Bouchard's nodes). Both may be found in generalized osteoarthritis.

Palmar erythema
Palmar erythema (Fig. 4) is a persistent bilateral reddening of the palms which, unlike simple vasodilatation, is more marked around the peripheries of the palm. Whilst such erythema may have no apparent cause, there is an association with liver disease (either acute or chronic), pregnancy, rheumatoid arthritis and thyrotoxicosis.

Raynaud's phenomenon
Raynaud's phenomenon is usually a bilateral condition caused by hyperreactivity of blood vessels which go into paroxysms of prolonged spasm, often in response to cold. The fingers go white, then blue, with associated pain (see p. 118). Causes include scleroderma or systemic lupus erythematosus (SLE) both of which are collagen–vascular disorders.

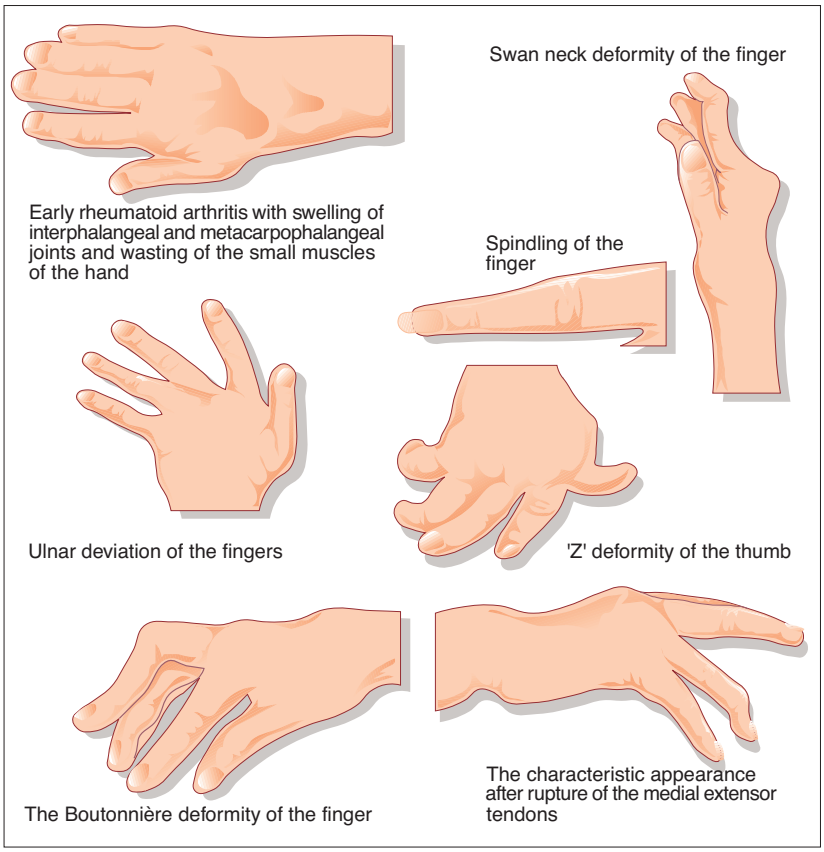

Fig. 5 **Common types of rheumatoid arthritis.**

Rheumatoid arthritis (Fig. 5)
The differentiation between early rheumatoid arthritis and osteoarthritis is detailed on page 113. The hand in early rheumatoid arthritis may show muscle wasting, metacarpophalangeal joint swelling, proximal interphalangeal joint swelling (perhaps leading to a spindled appearance), flexor tendon synovitis leading to trigger finger and effusions. Later changes include subluxation of meta-carpophalangeal joints, ulnar deviation of the fingers, button hole deformities, swan neck deformities, Z deformities, and tendon thinning with possible ruptures.

Sarcoidosis
Infiltration of hand tissue with sarcoid tissue (a granulomatous disorder of unknown causation) may produce lupus pernio, a chronic purple discoloration of the skin which, unlike Raynaud's phenomenon, is unaffected by cold.

Scleroderma
In scleroderma the skin becomes fibrotic leading to fibrous contraction of hand skin (which in consequence cannot be pinched up). Finger movements are restricted and the skin may have a shiny glazed appearance. Subcutaneous calcium deposits may be associated.

Thyroid dysfunction
An overactive thyroid gland (thyrotoxicosis) may cause increased circulation with blood vessel dilatation leading to warm sweaty palms, possibly with palmar erythema. In contrast, an underactive thyroid (myxoedema) may cause the hands to be cool, dry and rough in texture.

Muscle wasting
Causes of muscle wasting include motor neurone disease (a progressive dysfunction of lower motor neurones) syringomyelia, ulnar or median nerve palsy, poliomyelitis, C8 or T1 nerve root lesions, peripheral neuritis or neuropathy.

Smoking
Tar discolors fingers, usually of the dominant hand. Nicotine is colourless and does not cause stains.

Lifestyle
Skin thickening suggest a manual occupation, and weatherbeaten hands an outdoor occupation. Miners may have implanted coal dust beneath the skin. Rude or crude tattoos on the hands (or elsewhere) may suggest a mildly psychopathic tendency to self-abuse and disregard for society, which is often associated with other abuses including drug addiction.

General examination (II) — hands

- Unilateral claw hand suggests an ulnar nerve lesion.
- Dupuytren's contracture presents with no obvious cause in most patients.
- Subcutaneous nodes associated with arthritis are usually a marker of seropositive rheumatoid arthritis.
- Thyrotoxicosis may lead to warm, sweaty palms; myxoedema may cause rough, dry hands.
- Raynaud's phenomenon, hyperreactivity of the blood vessels often in response to cold, may be a sign of scleroderma or SLE.
- Heberden's nodes may be found in generalized osteoarthritis.

GENERAL EXAMINATION (III) — Head, Face and Eyes

THE HEAD

Generalized enlargement of the head may be caused by congenital hydrocephalus or by Paget's disease. Normally, the shape of the head is related to the relative size of individual parts of the skull. Premature fusion of the skull bones, craniostenosis, causes abnormally shaped heads and, if congenital, causes prominence of the frontal bones or bossing. Sebaceous cysts or, less commonly, neoplasms may cause focal swellings, and palpable bony overgrowths are occasionally found over meningiomas.

THE FACE

The appearance of the face may be immediately suggestive of various disorders. In Parkinson's disease, the facial expression may be fixed with a lack of movement and expression, unblinking eyes and a slightly opened mouth (Fig. 1). Drooling occurs in severe cases because the striated muscles of swallowing are also stiff, and swallowing of saliva thereby impaired. The skin is often greasy. In severe hypothyroidism the skin is dry and puffy with alopecia of eyebrows and scalp (Fig. 2). In acromegaly (Fig. 3) there is protrusion of the jaw, and soft tissue overgrowth leads to coarsening of the facial features. In Down's syndrome (mongolism) the eyes are slanted and there is accentuation of the fold of skin (epicanthal fold) bordering the inner angle of the eye. The bridge of the nose is flattened and the mouth is often open with a large protruding tongue.

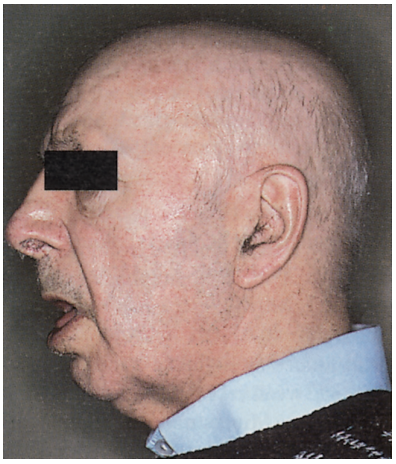

Fig. 1 **The face in Parkinson's disease.**

Fig. 2 **Hypothyroidism.**

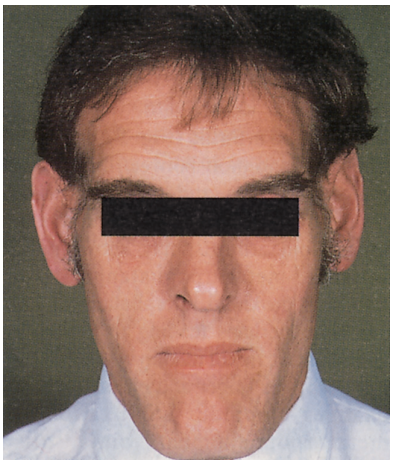

Fig. 3 **The characteristic facial features of acromegaly.**

THE EYES

The basic external anatomy of the eye is shown in Figure 4. The neurological aspects of eye examination are detailed on pages 76–83.

As part of the general examination look for evidence of the following:

- *Blepharitis:* chronic infection of the lid edge with thickening and redness of the lid margin.
- *Chemosis:* oedma of the eyelids.
- *Ectropion:* eversion of the eyelid.
- *Entropion:* inversion of the eyelid with the eyelashes often irritating the eye.
- *Orbital cellulitis:* inflammation of the orbit and periorbital tissue, usually of bacterial aetiology.
- *Phlyctenular conjunctivitis:* discrete nodular areas of inflammation at the limbus, the cornea or conjunctiva; usually a reaction to various allergic stimuli, notably active tuberculosis.
- *Pingueculae:* fatty triangles with the base at the cornea and the apex pointing to the inner or outer canthus.
- *Pterygium:* fibrosis of the same area as pingueculae.
- *Stye formation:* a staphylococcal abscess of the glands of the eyelid margin (Fig. 5).
- *Subconjunctival haemorrhages:* caused by bleeding from the poorly supported conjunctival blood vessels.
- *Xanthelasma:* fatty deposits in the skin around the eye which are often markers of hyperlipidaemia (Fig. 6).

Iridocyclitis

Iridocyclitis is inflammation of the iris and ciliary body, the causes of which include viral infection, tuberculosis, sarcoidosis and collagen–vascular diseases including rheumatoid arthritis. Symptoms of iridocyclitis include pain, intolerance

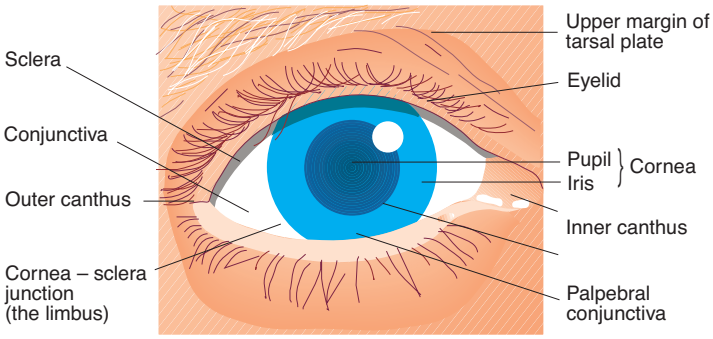

Fig. 4 **The external anatomy of the eye.**

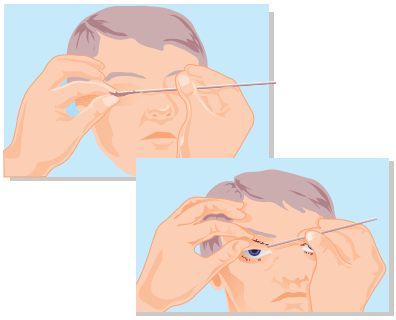

Fig. 7 **Eversion of the tarsal plate to reveal a foreign body.**

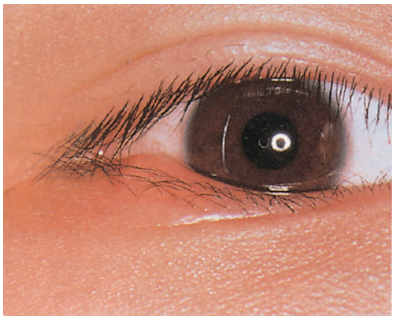

Fig. 5 **A stye.**

Fig. 6 **Xanthelasma.**

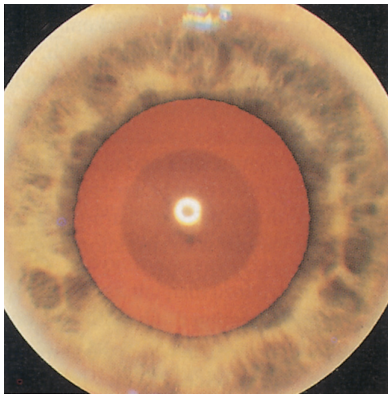

Fig. 8 **Cortical cataract seen against red reflex.**

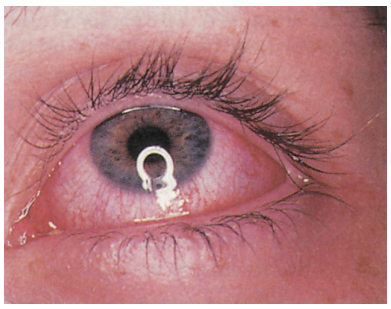

Fig. 9 **Acute conjunctivitis.**

of light (photophobia), lacrimation and blurred vision. There is also prominence of the small blood vessels surrounding the cornea, the iris is dull and swollen, the pupil may be small and irregular, and the fluid in the anterior chamber may be turbid (a hypopyon).

Foreign bodies

Non-penetrating foreign bodies may be seen on the eye or underneath the eyelids. To exclude foreign bodies underneath the upper eyelid, the upper margin of the tarsal plate can be everted by placing a probe across the top of the upper eyelid and, by grasping the eye margin and eye-lashes, flipping the tarsal plate inside out to reveal the mucosal surface (Fig. 7).

Cataracts

Cataracts are areas of reduced transparency in the lens. Common causes include senile degeneration, diabetes or steroid therapy. The major symptom is of progressive, painless loss of vision. Mature cataracts are grey opacities in the lens, but other cataracts may stand out as defects in the red reflex when a light is shone directly into the eye (Fig. 8).

Acute conjunctivitis

Acute conjunctivitis (Fig. 9) is inflammation of the conjunctiva (the delicate membrane lining the eyelids and covering the eyeball). There may be photophobia, excessive tear production and, if bacterial in nature, a purulent sticky discharge which gums up the eyes, particularly during sleep. With viral or allergic conjunctivitis, the discharge is not purulent. The conjunctival blood vessels are thickened and tortuous and move with the conjunctiva. In iritis or acute glaucoma, the blood vessels are fine, straight and pass radially from the cornea to the limbus, and do not move with the conjunctiva.

Signs in the sclera and cornea

The sclera is usually white but may be yellow if the patient is jaundiced (may be missed in poor or artificial light). The cornea should be perfectly transparent. Infection, particularly herpes simplex (which requires special fluorescein staining to demonstrate), may cause dendritic (branching) ulcers. Foreign bodies may also cause corneal reactions and opacification. Arcus senilis is a white ring at the edge of the cornea and is usually associated with the aging process.

General examination (III) — head, face and eyes

- Generalized enlargement of the head may be due to hydrocephalus or Paget's disease.
- Coarsening of the facial features is a sign of acromegaly.
- Iridocyclitis is an inflammation of the iris and ciliary body usually caused by viral infection, tuberculosis and collagen–vascular diseases.
- Yellow sclera is a cardinal sign of jaundice.

GENERAL EXAMINATION (IV) — Mouth, Sinuses and Ears

THE MOUTH

The mouth and oral cavity (Fig. 1) should be examined systematically starting with the lips, the teeth and gums, and the hard and soft palate. Next examine the buccal mucosa and the tongue and pharynx. Ask the patient to remove any dentures before starting the examination.

The lips

Among other clinical signs the lips may show angular stomatitis with painful inflamed cracks at the corners of the mouth associated with dribbling caused by ill fitting dentures, candida infection or iron deficiency. Thickening and cracking of the lips, cheilosis, possibly with ulceration, is suggestive of vitamin deficiency — especially if associated with fissuring of the angles of the mouth. Herpes simplex comprises clusters of small itchy vesicles which become pustular and crust. They do not have diagnostic significance and may occur without apparent stimulus, although they may be a secondary manifestation of infection elsewhere in the body. Fissuring or nodules which do not heal should be viewed with suspicion, especially in older patients as neoplasia is a possibility.

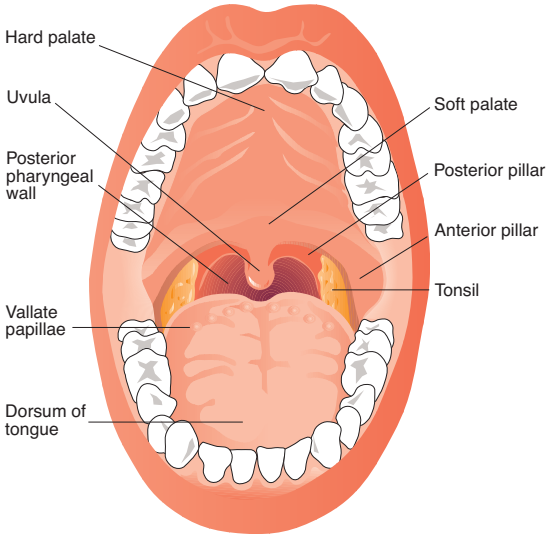

Fig. 1 **The mouth and oral cavity.**

The teeth and gums

Look for pyorrhoea in which the gums are reddened and swollen. Pus may be visible or expressed in severe cases. Spontaneously bleeding gums may be a manifestation of uraemia, blood clotting diseases such as leukaemia, or vitamin C deficiency. Persistent intraoral ulceration may occur in acute leukaemia, agranulocytosis or as part of the cyclical orogenital ulceration of Behçet's disease. Whitish patches may be caused by thrush or leukoplakia. Gum hypertrophy is a common side-effect of longstanding phenytoin treatment.

The state of an individual's teeth often reflects his/her attitude to life — uncared for teeth often reflecting an uncaring lifestyle. Caries (cavities in the teeth), if immediately obvious, suggest a lack of dental visits. Teeth may be of abnormal colour: yellow due to smoking, dullish white caused by enamel hypoplasia if tetracyclines were given in early life, or greyish if the tooth has died.

Teeth, especially the incisors, may be notched or peg shaped in congenital syphilis.

Absent teeth or failure to wear dentures may lead to difficulty with mastication of 'tough' foods, perhaps leading to dyspepsia. The teeth are often abnormal in inherited or metabolic diseases, especially those affecting bone.

The palate

The hard palate is the bony anterior two-thirds of the palate, with the remainder constituting the soft palate. Both should be inspected for abnormalities. Small dot-like haemorrhages, palatal petechiae, occur in many throat infections but are a regular feature of glandular fever.

The buccal mucosa

Koplik's spots (Fig. 2) are like grains of salt on a background of redness and are present before the rash of measles. Oral lichen planus comprises whitish linear lacy streaks which do not ulcerate. They are often associated with skin lesions. Pigmented areas of the buccal mucosa or gums may be found in adrenal hypofunction or in heavy metal poisoning.

The tongue

The size, shape and symmetry of the tongue should be noted, both at rest and when protruded. Fungiform papillae are small reddish prominences which can be seen at the tip and edges of the tongue, whereas filiform papillae (the 'fur') are in rows across the tongue. Circumvallate papillae are prominent circular papillae which form a backward pointing 'V' at the back of the tongue: they are normally just out of sight.

Fig. 2 **Koplik's spots in prodromal measles.**

A number of clinical signs may be noted in the tongue. Glossitis is a descriptive term referring to an atrophic, smooth, glazed and sore tongue. Causes include anaemia and vitamin deficiency. A geographical tongue is a normal finding, characterized by areas of papillae loss with the rest of the tongue being normal. The tongue may be furred if the patient is dehydrated. Leukoplakia is a white patch on the tongue, buccal mucosa or floor of the mouth that cannot be scraped off. Sometimes it is associated with chronic irritation or syphilis, and is often a premalignant condition. Oral hairy leukoplakia is a marker of HIV infection, with multiple vertical white fissures on the side of the tongue. Dilated blood vessels (telangectasia) may be found on the tongue (and elsewhere), and if also in the gut may be a source of gastrointestinal bleeding. A large tongue may be caused by acromegaly, hypothyroidism, Down's syndrome or primary amylodosis. Cyanosis may be evident.

Halitosis

Halitosis (malodourous breath) is usually caused by lack of dental care but may result from any condition which causes a sore throat. The odour of alcohol may be apparent, but as patients with an alcohol

problem often abstain before seeing their doctor, there may only be a characteristic sweetish acetaldehyde-like odour. Endstage renal failure (uraemia) may give rise to a fishy odour, whereas in diabetic hyperglycaemia the smell of acetone is common. In liver failure, the breath is said to be like the belch of a cow (for those who have not had the benefit of this experience, this is like the odour of freshly cut grass which is about to rot). Lung abscesses or bronchiectasis may cause a foul halitosis.

The tonsils

The tonsils lie at the back of the throat. Before the age of 10 years they are relatively large, thereafter becoming smaller. Asking the patient to say 'Ahhh' assists in visualization of the tonsils and pharynx. Do not ask the patient any questions whilst the spatula is in the mouth!

To visualize 'lowslung' tonsils, the tongue should be depressed with a spatula. To obtain good views without making the patient gag, ask him or her to relax the tongue whilst letting it lie in the floor of the mouth. A spatula should then be introduced to one side and the tongue gently pushed towards the midline with a slight withdrawing action to pull the tongue slightly forward. The tonsil on that side is then inspected, utilizing a torch. The procedure is then repeated on the other side.

THE SINUSES

The surface anatomy of the sinuses is shown in Figure 3. The skin areas over the superficially situated sinuses involved may be tender and swollen if there is sinusitis. Maxillary sinusitis may simulate toothache, which unlike uncomplicated toothache, may vary with posture (the pain of sinusitis often being a pressure-dependent closed box type of pain). Particularly in maxillary sinusitis there may be an inflamed nasal mucosa and purulent discharge. Uncomplicated nasopharyngitis tends to be predominantly a nasal illness, whereas sinusitis often presents with headache, general malaise and possibly fever.

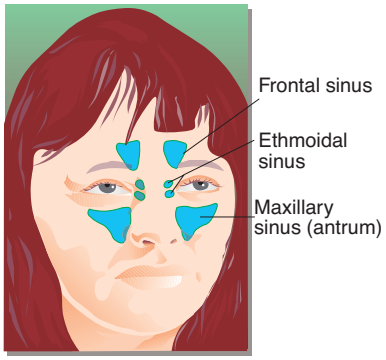

Fig. 3 **The surface anatomy of the sinuses.**

THE EARS

Examination should include the external, middle and inner ear (Fig. 4). Chalky deposits in the earlobes are caused by longstanding gout. The auditary canal may be inflamed by infection (otitis externa). To examine the eardrum (Fig. 5) with an auriscope, the pinna should be drawn upwards and backwards to assist visualization of the tympanic membrane. Perforations, or middle ear effusions (with fluid levels behind the tympanic membrane) may be seen. With bacterial otitis media (without tympanic membrane perforation) there will be pain, deafness, a bulging red tympanic membrane with loss of the light reflex, and prominent blood vessels. After a perforation, the pain usually diminishes and a purulent discharge may be obvious. Eustachian tube (which connects the middle ear with the throat) obstruction may cause the malleus to be rotated backwards so that the short process is more prominent. The tympanic membrane may have lost its normal pearly-grey surface, and the cone of light on illumination of the tympanic membrane may be distorted.

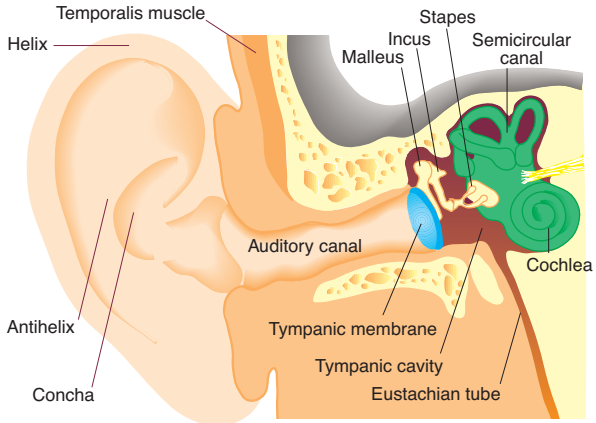

Fig. 4 **The anatomy of the ear.**

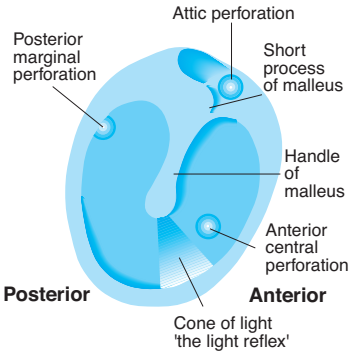

Fig. 5 **The right eardrum.**

General examination (IV) — mouth, sinuses and ears

- Examine the mouth systematically.
- Fissuring or nodules of the lips which do not heal should be treated with suspicion.
- Poor teeth often indicate poor health.
- Koplik's spots are present before a measles rash.
- Uncomplicated nasopharyngitis tends to be a nasal illness; sinusitis often presents with headache, malaise and fever.
- Draw the pinna upwards and backwards to facilitate examination of the eardrum with an auriscope.

GENERAL EXAMINATION (V) — Throat, Thyroid and Other Neck Signs

THE THROAT

Fig. 1 **The throat in diphtheria.**

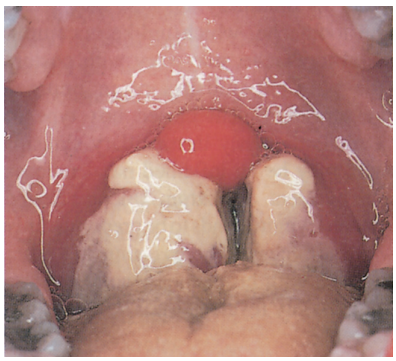

Fig. 2 **The throat in glandular fever.**

Perhaps the most common complaint requiring examination of the throat is the 'sore throat'. Because there is much overlap in appearances between various causes, this account has to deal with the various syndromes which may cause signs rather than the other way round.

Bacterial sore throats

Streptococcal infection of the throat may cause pharyngitis, tonsillitis or peritonsillar abscess formation (quinsy). Features of tonsillitis include fever and redness, congestion and oedema of the back of the throat, with small 'cheesey' exudates on the tonsils. Cervical lymph node enlargement may develop after (but only rarely before) the start of bacterial sore throats, whereas with viral sore throats, lymph node enlargement may occur first. A quinsy causes unilateral swelling with displacement of the uvula away from the midline.

Other causes of sore throat include Ludwig's and Vincent's angina. Ludwig's angina (submandibular cellulitis) is usually caused by infection with streptococci or anaerobic bacteria. There is marked pain and swelling in the submandibular area with danger of respiratory obstruction from soft tissue swelling. Vincent's angina is caused by dual infection with *Fusobacterium fusiforme* and *Borrelia vincentii*. There is pharyngitis with grey pseudomembrane formation and ulceration. Bleeding occurs on attempted removal of pseudomembrane.

Diphtheria (Fig. 1) should always be suspected in immigrants who may not have been immunized and who may have recently arrived from areas abroad where diphtheria is common. The diphtheretic membrane, if visible, is bilateral, wrinkled, sharply demarcated and firmly adherent. It is dirty rather than white in colour, not confined to the tonsils, thick, homogeneous, surrounded by a narrow zone of inflammation and bleeds on attempted removal. Ulceration is not a feature. There is often a non-painful 'bull neck' with regional lymph node enlargement. There is a distinct risk of unpredictable and sudden respiratory obstruction as the membane may grow over or flake off and block the airway.

Viral sore throats

Viral sore throats may be indistinguishable from streptococcal sore throats. The following are the most common causes:

- *Adenovirus infection*
- *Pharyngoconjunctival fever* is a combination of conjunctivitis and pharyngitis usually caused by adenovirus infection.
- *Aphthous ulcers* comprise painful, small (about 5 mm diameter) irritating ulcers or vesicles at the front of the mouth without extraoral spread: they are very common.
- *Chickenpox* may cause intraoral vesicles which rapidly burst leaving shallow ulcers.
- *Cytomegalovirus* may cause an exudative tonsillitis as may toxoplasmosis (a protozoan infection).
- *Glandular fever* (Epstein–Barr virus infection; Fig. 2) usually gives rise to palatal petechiae and, in classic cases, the tonsillar exudate is usually strikingly white in the early stages and confined to the tonsils. Unlike streptococcal sore throats, difficulty in swallowing is more often related to anatomical obstruction rather than to severe lancinating pain. Patients typically mouth breathe and have a nasal voice. If there is a possibility of diphtheria, the finding of non-regional lymph node enlargement or an enlarged spleen favours a diagnosis of glandular fever.
- *Hand, foot and mouth disease* is usually caused by coxsackie A16 virus. There are bright red macules or vesicles surrounded by a red halo. Lesions are on the hands, feet, and in the *front* of the mouth.
- *Herpangina* is usually caused by coxsackie A virus. There is an abrupt onset sore throat with painful dysphagia. The fauces and soft palate are red with distinct greyish patches or ulcers (a few millimetres in diameter) surrounded by red halos. These are present in the back of the mouth (unlike hand, foot and mouth disease and aphthous ulceration).
- *Herpes simplex* in young children may cause an acute gingivostomatitis (Fig. 3) with vesicles and very painful ulcers which predominantly affect the front of the mouth. Lesions outwith

Fig. 3 **Herpes simplex gingivostomatitis.**

Fig. 4 **Severe oral thrush.**

the oral cavity are common, mostly caused by dribbling of infected saliva. Such extraoral manifestations do not occur with hand, foot and mouth disease or aphthous ulcers.
- *Herpes zoster* ('shingles') may cause unilateral intraoral lesions in maxillary or mandibular shingles.
- *Rubella* may cause a mild pharyngitis, possibly with tonsillar exudates.

Sore throats caused by other conditions

Other conditions causing sore throats include *Candida* ('thrush') which comprises patches of creamy white exudates that are easily pushed away leaving a reddened but non-bleeding area. The surrounding mucous membranes are inflamed. If thrush is severe (Fig. 4), always suspect HIV infection. *Kawasaki's syndrome* presents in children usually less than 2 years of age, and comprises fever with dryness and redness of the lips, tongue and oropharynx. A rash occurs later, and there is nail fold peeling, lymph node enlargement and nonpitting oedema of the hands and feet. *Stevens–Johnson syndrome* comprises erythema multiforme (p. 122) with painful oral ulcerations, and inflammation of conjunctiva and genital mucous membranes.

THE THYROID

The normal thyroid is closely affixed to the trachea and is not usually visible unless enlarged. However, by observing the patient swallowing, the thyroid may be brought into view and/or palpated. Swallowing elevates the thyroid cartilage and thus the attached thyroid gland. The thyroid isthmus connecting the two lobes lies just below the cricoid cartilage with the lobes lying along the lower half of the lateral margin of the thyroid cartilage (Fig. 5).

Correct positioning of the patient is important when examining the thyroid gland. Arrange for the patient to be sitting with the neck slightly extended so that the neck can be examined from the front side and then from the behind (Fig. 6).

Palpation of the thyroid must always be done gently. If the thyroid is enlarged (a goitre), ascertain whether it is mobile. Unless there is a malignant fixation the thyroid should move along with the thyroid cartilage. Ascertain the consistency of any goitre and whether it contains several nodules (a multinodular goitre) or whether it is diffusely enlarged. Isolated swellings, especially if solitary or hard, may be caused by carcinoma or cysts, but if the hardness is diffuse a 'wooden' Reidel's thyroiditis is likely. If auscultation reveals a systolic murmur (a bruit), an abnormal circulation is present which (unless the bruit is transmitted from the major arteries nearby) is suggestive of an overactive thyroid, as in thyrotoxicosis. In females with slender necks a visible thyroid may be a normal finding.

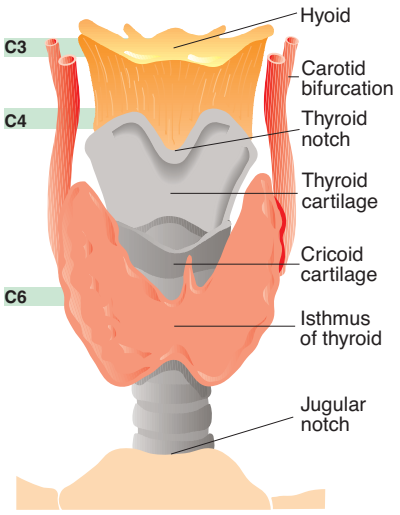

Fig. 5 **The anatomy of the thyroid gland.**

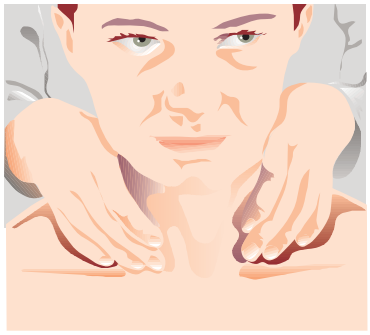

Fig. 6 **Examination of the thyroid gland from behind.**

OTHER NECK SIGNS

Branchial cysts

Branchial cysts are congenital malformations usually found in the upper half of the anterior neck. A small dimple may be present on the overlying skin.

Thyroglossal cysts

A persisting fetal thyroglossal duct may give rise to a single cystic midline swelling. Protrusion of the tongue pulls the cyst upwards, as the cyst is part of the duct connected with the tongue.

The parotid gland

The parotid gland lies between the descending ramus of the mandible and the anterior border of the sternomastoid. It is easy to palpate if enlarged. Parotid swelling fills in the crease behind the mandible, unlike enlarged lymph nodes which do not unless there is much associated oedema.

General examination (V) — throat, thyroid and other neck signs

- Most sore throats are viral.
- In most instances it is not possible to differentiate between viral and bacterial sore throat.
- With submandibular cellulitis (Ludwig's angina) there is a danger of respiratory obstruction.
- Diphtheria may result in unexpected respiratory obstruction.
- The thyroid is not normally visible unless enlarged.