

CHAPTER XXII.

THE LEGS AND FEET.

THE LEGS.

I. Hip.

THE examination of the hip will be discussed later (see page 489).

II. Groin.

In the groin we look for evidences of:

1. Enlarged or inflamed lymphatic glands and scars of previous inflammation.

2. Hernia and hydrocele of the cord.

3. Psoas abscess.

Less common are:

4. Retained testis.

5. Filarial lymphatic varix.

1. *Inguinal Glands*.—Two sets of inguinal glands are distinguished—one arranged along the lower half of Poupart's ligament; the other lower down, around the saphenous opening.

(a) The "Poupart's group" are acutely enlarged in lesions of the genitals ("bubo" of gonorrhœa,¹ syphilis, chaneroid) and perineum; chronically enlarged in malignant disease of the penis, uterus (late), and other genitalia.

(b) The saphenous group is enlarged in response to lesions of the thigh, leg, and foot (cuts, wounds, ulcers, eczema, etc.).

¹The bubo of gonorrhœa often suppurates; that of syphilis rarely. Hence a scar in the inguinal region suggests an old gonorrhœa.

(c) Either or both groups may be enlarged in leukæmia, Hodgkin's disease (see above, page 30), infectious arthritis, and various obscure fevers. In many cases no cause for enlargement can be found.

2. *Hernia* is diagnosed by the presence of a soft, resonant, fluctuating, usually reducible tumor with an impulse on coughing.

Hydrocele of the cord gives also an impulse on coughing, but usually shows a distinct limit above. On pulling the cord the swelling moves too.

3. *Psoas abscess* (see Fig. 202) presents the ordinary signs of pus and is associated with vertebral tuberculosis (dorsal or lumbar).

4. *Retained testis* should be suspected whenever an inguinal tumor is present and only one testis is found in the scrotum.

5. *Filarial lymphangiectasis* is generally mistaken for hernia and operated on as such, although it gives no impulse on coughing and cannot be completely reduced. The history of residence in the tropics should always suggest an examination of the blood (at night) for filariæ.

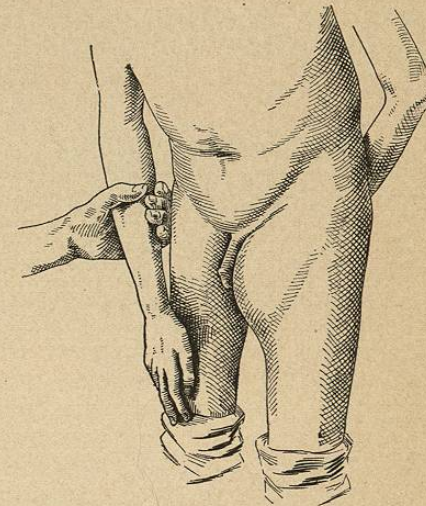


FIG. 202.—Psoas Abscess. (Bradford and Lovett.)

III. The Thigh.

The records of the Massachusetts General Hospital show that (1) *epiphysitis* and *osteomyelitis* (septic or tuberculous) are almost ten times as common as any other serious lesion of the thigh, except fracture. The cases are to be divided into acute septic cases and chronic, usually tuberculous, cases.

The acute septic cases begin with severe pain, tenderness, fever, chill, and leucocytosis. Later an induration and finally fluctuation appear, and the abscess, if not incised, will break externally. General, sometimes fatal, septicæmia may take place.

The chronic tuberculous cases first consult the physician, as a rule, for *sinus*, which proves when explored to lead to dead bone, as do most of the sinuses from septic cases.

The diagnosis of the acute cases depends chiefly on excluding arthritis of any type. Careful examination with testing of joint motions will usually demonstrate that the pain and tenderness are in the bone and not in the joint. The leucocyte count is but slightly elevated in most cases of arthritis, but is decidedly high, 20,000 or more, in most cases of acute osteomyelitis. The same is true of the temperature. Monarticular arthritis—the only variety likely to be considered in such a diagnosis—is rare in youth, when most cases of acute osteomyelitis and epiphysitis occur.

Whether the disease starts in the shaft of the bone or in the epiphysis is to be determined by the seat of pain and tenderness.

Tuberculous cases can be recognized only by the histological examination. Old cases may be suspected by the presence of a scar, but

(2) *Multiple white scars* should always suggest, though they are far from proving, syphilis, for *chronic ulcer* above the knee is often due to gumma.

Tumors of the Thigh.

(1) *Sarcoma of the femur* is the commonest and largest tumor of the thigh. Among one hundred and thirty-three tumors of the thigh recorded at the Massachusetts General Hospital, sixty-six were sarcoma. A hard, spindle-shaped growth encircles the femur; the lower end is the commonest site, but any part of the bone may be affected (see Fig. 203).

(2) *Osteoma*, or exostosis, occurred eleven times in the one hundred and thirty-three cases just mentioned. It is much smaller and of slower growth. The last trait usually serves to distinguish it from sarcoma.

(3) *Metastatic cancer* of the upper half of the femur may occur after cancer of the breast, but rarely gives rise to symptoms unless spontaneous fracture occurs—an event which always should suggest cancer. Epithelioma of the thigh is not very rare (twelve cases in the one hundred and thirty-three above referred to). Its traits are those of epithelioma elsewhere.

Tuberculosis of the knee may simulate sarcoma of the lower end of the femur, but sarcoma grows more rapidly. The tuberculin test or an exploratory incision may be necessary to decide the diagnosis.



FIG. 203.—Sarcoma of the Femur.

(4) *Psoas abscess* or *hip-joint abscess* (see Fig. 202) may burrow down so as to point on the thigh. The evidence of disease in the hip or vertebræ is usually sufficient to make clear the diagnosis.

Miscellaneous Lesions of the Thigh.

(1) *Phlebitis* with thrombosis of a vein, usually the saphenous, is a common cause for swollen thigh (and leg) with pain and tenderness, especially over the inflamed vein, where a cordy induration can often be felt. Typhoid fever and the puerperal state are the usual causes. Diagnosis depends on the presence of these signs and causes and the absence of any other demonstrable cause for inflammation.

(2) *Meralgia paræsthetica* means the presence of a patch of anæsthesia, paræsthesia, or hyperæsthesia (tenderness), with or without pain, on the anterior and upper surface of one or both thighs (the area of the external cutaneous nerve).

(3) *Paget's disease* (osteitis deformans) presents usually its most marked lesions in the legs and head, though most of the other bones are also affected. In the leg the most characteristic lesions

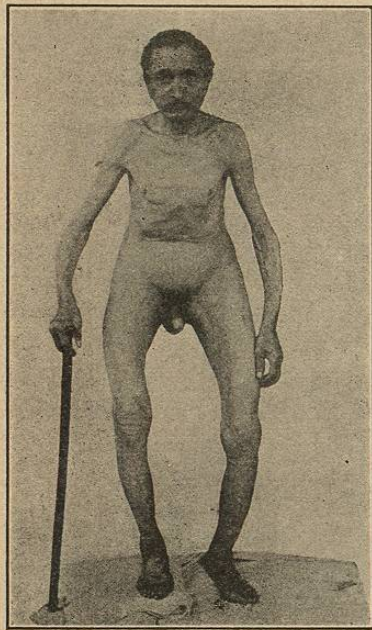


FIG. 204.—Paget's Disease (Osteitis Deformans). Note the outward and forward bowing of legs and arms. (Robin.)

are forward bowing of the femur and tibia with outward rotation of the whole limb (see Fig. 204). The *x-ray* shows marked thickening of some areas, with thinning of others.

(4) *Intermittent Claudication and "Cramps."*—Insufficient circulation through the arteries of the legs may give rise to sudden "giving way" of one or both during running or walking, the power returning after a short rest. In patients at rest the frequent recurrence of painful cramps in the muscles may be the only manifestation of the disease.

Obliteration of the dorsalis pedis (or larger arteries) by arteriosclerosis is often found, but there is reason to believe that local anæmia, due to vasomotor disturbances or other causes, may produce similar cramps

(*e.g.*, those seen in football players during a hard run and in pregnant women).

Paralyses.

(1) *Paralysis of one leg*, occurring in children, is usually due to *anterior poliomyelitis*; in adults it usually forms part of a *hemiplegia* or is of *hysterical* origin. *Neuritis*, due to alcohol, lead, arsenic, or diphtheria, may affect one leg predominantly, but both

are usually involved. *Cerebral monoplegias*, due to cortical lesions of the leg area, are rare. *Chorea* may be associated with a limp, half-paralyzed condition in one leg, usually with some involvement of the arm on the same side, and the characteristic motions (see above, page 44) make the diagnosis clear.

The differential diagnosis of the other varieties of monoplegia is usually easily made with the aid of a careful history and a thorough examination of the other parts of the body.

(2) *Complete paralysis of both legs* (paraplegia) is commonest in diffuse or transverse myelitis (*e.g.*, in spinal tuberculosis or metastatic cancer with pressure on the cord), in multiple sclerosis, spastic paraplegia (hereditary or acquired), and in late tabes. Hysteria also may produce a spastic paraplegia, though monoplegia is commoner in this disease.

(3) *Partial paralysis of both legs* is oftenest due to neuritis, resulting from the causes mentioned above. The extensors of the foot are especially affected and toe-drop results, so that in walking "the entire foot is slapped upon the ground like a flail" (Osler).

DIFFERENTIAL DIAGNOSIS.—(a) In *diffuse or transverse myelitis*, whether or not the trouble be due to pressure, there are increased reflexes, anæsthesia, usually loss of control of the sphincters (involuntary urine and fæces), and often bed-sores.

(b) In *spastic paraplegia* of any type the legs are stiff and the reflexes increased, but sensation and the sphincters are normal and there is no atrophy or bed-sore formation.

(c) In *multiple sclerosis* there are usually no disturbances of sensation or of the sphincters, and the paralysis is associated with nystagmus, intention tremor, and slow, staccato speech.

(d) *Tabes dorsalis* shows *ataxia* but no paralysis until late in its course. The paralytic stage is preceded by a long period characterized by lightning pains, bladder symptoms, Argyll-Robertson pupil (see page 15), and loss of knee-jerks.

(e) *Hysteria* may take on almost any type of paralysis and may deceive the very elect, but as a rule the other evidences of hysteria guide the diagnosis.

IV. The Knee.

(a) Tuberculosis, atrophic, hypertrophic, and infectious arthritis, and traumatic synovitis are the commonest diseases, but will be described with other diseases of the joints (see page 486).

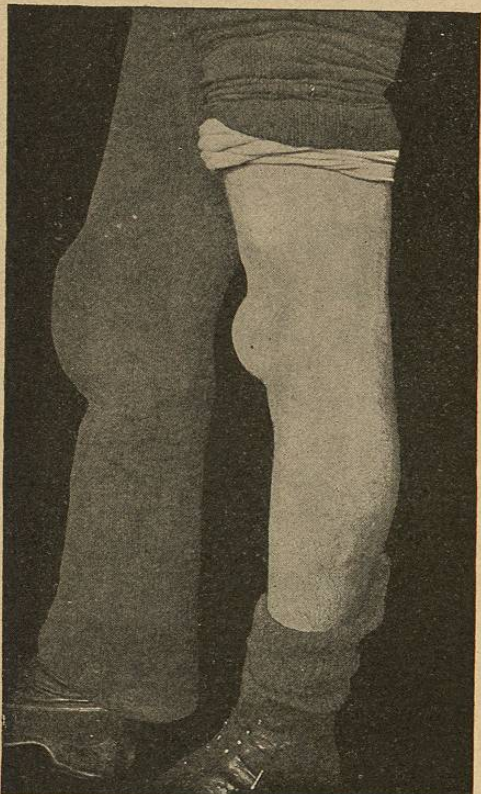


FIG. 205.—Prepatellar Bursitis ("Housemaid's Knee").

(b) Housemaid's knee is a bursitis of the prepatellar bursa (see Fig. 205). Fluctuation, with or without heat and tenderness, and limited to the prepatellar space, is diagnostic.

(c) Bow-legs and knock-knee are so easy of diagnosis that I shall simply mention them here.

V. The Lower Leg.

1. *Varicose veins*, with their results (eczema and ulcer), are the commonest lesions of the lower leg. The soft, twisted, purplish eminences are easily recognized. *Hardness* in such a vein usually means thrombosis. It

should be remembered that pregnancy and pelvic tumors may produce varicose veins in the legs.

2. *Chronic ulcers of the lower leg*, especially those in front, are

usually due to varicose veins and the resulting malnutrition of the tissues. They leave a *brown scar* after healing. Syphilitic ulcers usually leave a white scar; they may occur in the same situation, but are more common above the knee or on the calf.

3. *Syphilitic periostitis* is common on the shaft of the tibia, and gives rise to *pain* (worse at night) with tenderness and some swelling. Later *bony nodes* are formed, similar to those already pictured on the frontal bone.

4. *Osteomyelitis* (acute septic or chronic tubercular) often starts on the head of the tibia, with intense pain, tenderness, fever, and leucocytosis (if acute or septic); there results a general septicæmia or a local sinus leading to dead bone.

5. *Sarcoma* not infrequently attacks the upper end of the tibia or fibula, producing lesions similar to those described in the femur.

6. *Œdema of the legs*¹ is oftenest due to:

(a) Uncompensated heart lesions, primary or secondary from lung disease.

(b) Nephritis.

(c) Anæmia.

(d) Neuritis (alcoholic, beri-beri, etc.).

(e) Varicose veins.

(f) Obesity, flat-foot, and other causes of deficient local circulation.

In some cases no cause can be found ("angioneurotic" œdema, "loss of vasomotor tone"). Diagnosis of the cause of œdema depends on the history and the examination of the rest of the body.

In one leg œdema may be due to *thrombosis* of a vein (see page 455), to pressure of *tumors in the pelvis* (pregnancy, etc.), to hemiplegia, or to *inflammation*.

7. *Tenderness in the lower legs* frequently accompanies œdema from any cause. It may also be due to neuritis or trichiniasis, and, of course, to any local inflammation.

¹It is notable that œdema is usually greatest in the *front* of the leg and in the *back* of the thigh.

THE FEET.

1. The varieties of *club-foot* are: (a) *Equinus*, the heel drawn up. (b) *Varus*, the ankle bent outward. (c) *Valgus*, the ankle bent inward and the foot outward. (d) *Calcaneus*, the foot turned outward and upward.

The affection, which is usually congenital, occasionally the result of contractures after paralysis, presents no difficulties in diagnosis.



FIG. 206.—Flat-foot. (Bradford and Lovett.)

2. *Flat-foot* is a breaking down or weakening of the normal arch of the foot, so that the print of the sole loses more or less of the normal concavity in the inner side (see Figs. 206, 207, and 208). There are usually pain and tenderness near the attachment of the ligaments and often higher up on the leg.

3. *Tenosynovitis of the Achilles tendon* often produces pain in the tendon, increased by use and sometimes associated with palpable creaking or crepitus over it.

4. *Enlarged (rachitic) epiphyses* are seen at the lower end of the



FIG. 207.—Flat-foot. Print of the sole. (Bradford and Lovett.)

tibia and fibula just above the ankle-joint in about forty per cent of rachitic cases. The other signs of rickets in the child make diagnosis easy.

5. *Tuberculosis* is especially apt to attack the ankle bones in young persons. It is recognized by the usual evidences of joint tuberculosis (see below, page 492).

6. *Epithelioma* of the ankle has the characteristics of epithelioma elsewhere.

7. *Erythromelalgia*, or red neuralgia of the extremities, is commonest in the feet. The toes (or fingers) are red, hot, tender, and painful in (Raynaud's disease the digits are cold and painless or anæsthetic). The attacks are aggravated by heat and not (like those of Raynaud's disease) by cold. Such attacks are probably



FIG. 208.—Print of the Soles of Normal Feet. (Bradford and Lovett.)

akin to the condition of "hot feet" often seen in arteriosclerosis and myocarditis. The patient kicks off the bed clothes from his feet at night on account of the burning sensations in them. Other evidence of insufficient arterial blood supply (*e.g.*, clubbing, intermittent claudication, cramps, gangrene) may coexist.

The Toes.

Many of the lesions already mentioned in the fingers are found also in the toes (*e.g.*, atrophic and hypertrophic arthritis, acromegaly, pulmonary osteoarthropathy, tuberculous or syphilitic dactylitis, tremors, spasms, and choreiform movements). Other lesions, such as ingrowing toe-nail, bunion, hallux valgus, policeman's heel, are too purely local to deserve description here. Excluding these we have left:

1. *Gout*, which is especially prone to attack the metatarso-phalangeal joint of the great toe, producing all the classical signs of inflammation.

2. *Gangrene* is usually the result of arteriosclerosis with or without diabetes mellitus, but may result (as in the fingers) from arterial spasm or local asphyxia (Raynaud's disease).

3. *Perforating Ulcer*.—In diabetes and sometimes in tabes a trophic or nutritional ulcer may develop in the toe or tarsus as a result of nerve influences similar to those which produce Charcot's joint or herpes zoster in the diseases just mentioned. It is called "perforating ulcer" because of its stubborn progression despite a plan of treatment that checks ordinary infectious abscesses. Actual perforation is not often seen.

4. "Tender toes" after typhoid fever result from an infectious neuritis.

5. "Morton's disease" (metatarsalgia) means pain in the tarsus at a small spot near the distal end of one of the three outer toes, always associated with compression of the foot by tight boots and probably due to pinching of the external plantar nerves between the metatarsal bones. It is relieved by proper shoes.