

CHAPTER XXXIV

INFLAMMATORY SWELLINGS OF THE ANKLE-JOINT AND OF ITS VICINITY

IN no joint is the excellent method of injecting fluid, in order to reproduce a joint distended with exudate, of greater value than in the ankle. On the living this picture is rarely seen, and chronic effusions in particular are uncommon. On the other hand, as extra-articular inflammatory processes are of frequent occurrence, the picture furnished by distending the joint is of value in order to differentiate the two processes.

If it is impossible for you to see the ankle-joint distended, either in the cadaver or in the living patient, the following points will be of value: The ankle-joint distended by considerable effusion shows a distinct increase in its transverse diameter. This increase may be measured by means of calipers and expressed in figures. As the malleoli are only covered by skin at the points where the greatest transverse diameter of the joint intersects them, with the skin normal, any increase in diameter must be ascribed either to a swelling of the bones or to an increase of the joint contents. If examination of the bones shows no increase in their volume, no other explanation but that of a distention of the joint cavity remains. The outline of the swelling requires attention. The distended capsule protrudes at four points. Two prominences appear an-

teriorly, one to either side of the extensor tendons, which run in front of the joint, and hence must constrict the swelling; two much smaller protrusions appear posteriorly between the tendo Achillis and the external and internal malleoli. If the anterior prominences are compressed, the posterior grow tenser. The reverse manœuvre is not as successful, because compression of the flat posterior protrusions does not cause sufficient increase in tension; but it always is possible to demonstrate that these four points are all part of one continuous swelling. As the effusion tends to crowd the malleoli apart at the expense of the tibio-fibular ligaments, which become more lax, it is possible in advanced cases to move the astragalus from side to side. This produces the so-called "bruit de choc malléolaire" due to pushing the astragalus suddenly to one or the other side, so that it strikes the joint surface of the malleolus.

EFFUSIONS INTO THE TENDON SHEATHS (tenosynovitis) about the ankle never can be confused with hydrops of the joint, for they all occur in the form of elongated swellings corresponding to the course of some tendon. On the anterior aspect of the joint their distribution is as follows:

The sheath of the tibialis-anticus tendon begins at least five centimetres above the malleolus, and ends about two centimetres below this point. A collection of fluid within this sheath produces a sausage-shaped swelling, which runs along the anterior edge of the tibia in a downward direction, over the extensor surface of the ankle-joint.

A similar effusion into the sheath of the extensor communis digitorum produces a broader swelling,

which lies in front of and below the external malleolus. The swelling has another portion situated above the malleolus, separated from it by the annular ligament, but communicating with the lower one.

An hygroma of the synovial sheath of the extensor longus hallucis forms a narrow, slender swelling on the dorsum, extending down to the metacarpal bone of the big toe.

Posteriorly the following relations are observed: Behind the external malleolus is the sheath of the peronæi. Effusions into these produce an elongated swelling with its convexity directed backward. It extends six centimetres above the tip of the external malleolus, along the posterior surface of the fibula, conforming closely to the shape of the external malleolus, and finally, bending at an angle, runs forward along the external surface of the os calcis. Behind the internal malleolus we find the sheaths of the tibialis posterior, flexor communis digitorum, and, still closer to the Achillis tendon, the flexor longus hallucis. Effusions here must produce an elongated swelling between the inner edge of the posterior surface of the tibia and the tendo Achillis.

Effusions characterized by four elevations—two anteriorly and two smaller ones posteriorly—lead to examination of the joint. A single swelling anteriorly, close to the tibia, requires examination of the tibialis anterior; anteriorly, close to the fibula, to examination of the extensor communis digitorum; a swelling behind the lower end of the fibula requires examination of the peronæi; and finally, if behind the tibia, examination of the flexors.

I have seen well-informed students puzzled by the

appearance of two swellings along the posterior surface of the joint, to either side of the tendo Achillis between it and the respective malleoli—i. e., one swelling behind the tibia and one behind the fibula, with the tendo between them. It should be borne in mind that tuberculosis of the calcaneo-astragaloid joint produces this picture. The pus points upward along the sides of the Achillis tendon; a cold abscess forms, and later fistulous tracts develop. Here we may add that the joint assumes a position of rest, and hence the foot is held in slight supination. This last symptom does not hold good if the tubercular process is situated along the superior surface of the os calcis immediately posterior to the joint. Nothing but the above-mentioned swellings to either side of the tendo Achillis and a crowding backward of this tendon results. The usual downward course of the tendon, with a slight concavity directed backward, is lost and changed either into a straight line or a curved line, with its convexity directed backward.

If the tuberculosis occurs on the lateral aspects of the os calcis, flat abscesses of small extent form on the surface of the bone, discharge externally, and produce one or more small fistulæ, which lead to softened bone. The whole neighbourhood is always much infiltrated and swollen.

Let us analyze the following findings: "The neighbourhood of the ankle-joint markedly swollen, collateral œdema on the dorsum extending along the lower third of the leg; in front of the external and internal malleoli a hot, fluctuating swelling covered with reddened skin, each swelling about the size of a pigeon's egg. Fluctuation was transmitted from one swelling into the other, but between the two the tissues were not crowded forward; behind the malleoli and along their exposed surfaces only marked œdema. Pressure of the

heel upward produced no pain and no increase in tension in the tumours." As the fluctuating area was separated into two parts by the extensor tendons, the pus lay behind these tendons. As no fluctuating spots appeared behind the joint (merely œdema), as pressing the heel upward did not cause pain or increase the tension in the swellings, the pus could not be within the joint. Hence the pus was behind the tendons and in front of the joint. Diagnosis: phlegmon periarticularis anterior. After the swellings had been opened the exploring finger could be inserted behind the tendons, where it came in contact with the capsule. Water injected by one opening ran from the other. The connective-tissue layers in front of the joint had suppurated, and, on account of the great tension exerted by the tendons, had pointed along their sides. This accounted for the marked œdema. The process which developed in the course of six days completely healed in three weeks.

CHAPTER XXXV

INJURIES OF THE FOOT

THE diagnosis of effusions into the ankle-joint was discussed in the preceding chapter, because the question frequently arises whether a traumatic effusion into the joint has or has not followed upon an injury to this region. This question is most often asked when contusions or sprains have been sustained. The main points to be considered have just been dealt with.

On account of the frequency of injuries in this region, on the one hand, and common occurrence of tuberculosis of the tarsus on the other, it is well for beginners to give a guarded prognosis. This applies especially in cases of anæmic children, or those of tuberculous families, even if a positive history of trauma (falls, sprains) has been obtained, for tuberculosis may subsequently develop.

Acute osteomyelitis frequently follows subcutaneous trauma. Severe pain, persisting in spite of complete rest in bed, strongly marked œdema, and especially violent fever and prostration, indicate, from the very outset, that the process is serious. Red streaks appearing along the lymphatics without preceding injury to the skin, in conjunction with extensive œdema and fever, will at once point to a deep-seated suppurative process. Carefully conducted palpation of the