

UNIVERSITY COLLEGE HOSPITAL.

Practical Clinical Remarks

ON

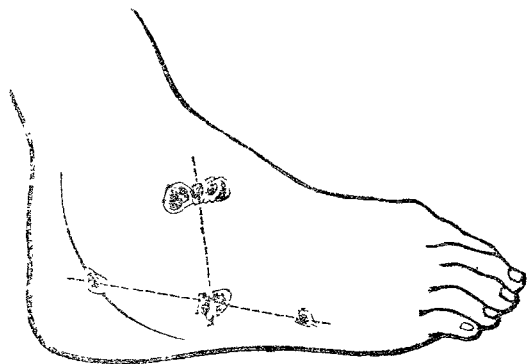
DISEASES OF THE TARSUS.

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GENTLEMEN,—The subject to which I am desirous of directing your attention to-day is that of diseased Tarsus, in connexion with the case on which I operated last week. The case to which I allude is that of a man named G—, a sailor, aged twenty-two, a native of South Shields. His mother died of consumption, and we therefore had good reason for believing him to be strumous. About a year ago he sprained his right foot, which for the last nine months has been in a painful and diseased condition. He was sent here from the north of England, with diseased tarsus; and he stated that it had been proposed to amputate the foot, but that he had refused to submit to this, although he would not object to any operation which did not involve the loss of the entire foot.

On examining the diseased foot, the case at first sight seemed to be an exceedingly bad one; and although I was anxious to give him a chance of saving the member by resecting the diseased structures, it was a question whether amputation ought not to be performed. The line of treatment in this case, however, depended upon the diagnosis which might be come to; and it was therefore necessary to make this very carefully, before we could say whether resection held out a reasonable prospect of success or not. Examining the foot with this view, I found that the ankle-joint appeared to be perfectly sound, and that the whole line of articulations on the inner side of the foot—namely, the articulations between the astragalus and scaphoid, between the scaphoid and the three cuneiform bones, and those of the cuneiform bones with each other, and with the first, second, and third metatarsal bones—exhibited no sign of disease. Several fistulous openings existed on the outer side of the foot, down which a probe passed to diseased bone in the outer side of the os calcis; another opening over the upper and outer part of the astragalus led down to disease in that situation; while another, on the outer border of the foot, revealed the existence of disease in the cuboid. Besides these,

FIG. 1.



there were four or five openings on the inner side of the sole of the foot; but these all led to disease at one point only, and that on the upper surface of the os calcis. The morbid action, indeed, appeared to be limited to the upper and anterior part of the calcaneum, the anterior outer portion of the astragalus, and the posterior (and greater) part of the cuboid. The anterior calcaneo-astragaloid, and the calcaneo-cuboid articulations were diseased; but that between the two outer metatarsal bones and the cuboid was sound, nor was there any evidence of disease in the external cuneiform bone.

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Having arrived at this diagnosis, I determined to give the poor fellow the chance he wished of saving his foot, and accordingly proceeded to operate by making a long L-shaped incision on the outer side of the foot, (Fig. 1,) turning up the flaps, exposing the parts freely, and gouging away all the diseased osseous structures. The diagnosis at which we had arrived was found to be correct, but the disease had extended so far inwards in the cuboid bone—occupying that small corner which articulates with both the external cuneiform and the scaphoid—that I was obliged to lay open the articulation between the scaphoid and cuneiform bones; and this opening up of the great anterior tarsal synovial membrane, for the reasons which I shall presently name, leads me to fear the result of the operation.

[The day after the operation a very severe attack of erysipelas came on, which led to abscess in the sole and inner side of the foot and to great constitutional debility. The resection wound, however, progressed favourably; but the soft structures of the foot having become disorganized by the erysipelatous inflammation, and the patient's strength greatly reduced in consequence, it became necessary eventually to amputate the foot. Since then the case has done well.]

This leads me to make some observations on the diseases of the tarsus generally, their diagnosis and treatment.

In no region of the body have the good effects of modern conservative surgery been more distinctly shown than in the tarsus. In the “good old times” of surgery, if a person had a white swelling of the bones of the foot, or a diseased tarsus, he was at once condemned to amputation of the limb. It was enough for a patient to have “disease of the tarsus” for him to have his limb removed; no distinction being made between disease of the different parts of the foot, nor any attempt to save the sound by the sacrifice of the diseased part.

Until a comparatively recent period, indeed, “diseased tarsus” was described as a whole. Surgeons did not endeavour to make out the exact extent and amount of the disease, and any case described as “diseased tarsus” was looked upon as requiring amputation of the leg. The rule of practice then observed was, amongst the wealthier classes—those who could afford the expense of a “cork leg”—to amputate a little above the ankle; but amongst the poorer classes, to remove the leg about a couple of inches below the knee, so as to give the patient a stump which, when bent, would fit into the socket of a wooden pin. Thus, in the latter case especially, not only was the leg, itself perfectly sound, sacrificed, but the patient was exposed to great additional danger; for if there be one point more than another which has been indisputably proved by surgical statistics, it is, that the mortality after amputations increases, *ceteris paribus*, in exact proportion as we approach the trunk, every additional inch which we remove augmenting the danger to the patient. This practice continued to prevail until M. Chopart drew some distinctions between the treatment to be pursued, according as the disease affected the anterior or the posterior tarsal bones and articulations. He showed that when the anterior articulations only were affected, amputation at the junction of the astragalus and calcaneum with the scaphoid and cuboid—an operation which goes by the name of “Chopart’s amputation”—ought to be performed; thus removing the whole of the disease, and the patient recovering with a shortened foot, but, the heel being preserved, one on which he could bear the weight of his body, and which would be highly useful to him.

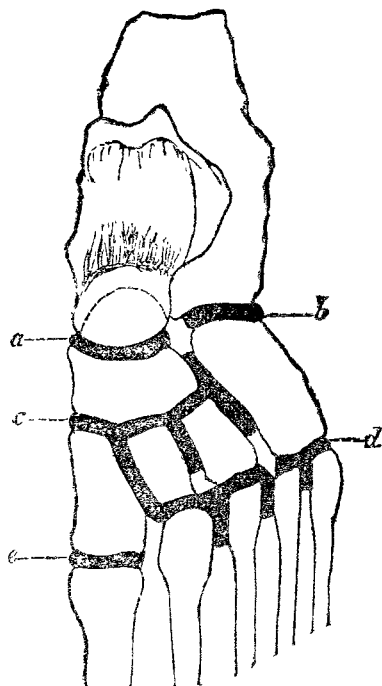
The next step in the conservative surgery of the lower extremity, in cases of diseased foot, was the operation introduced by Mr. Syme,—that of disarticulation at the ankle-joint. This was certainly a great advance, for the flap being taken from the heel, the patient has a stump on which he can bear. The operation is also a very safe one. I do not know the precise statistics of all recorded cases; but this I know, that I have performed it nine times without a death, and this, in the lower extremity, is extremely satisfactory.

Since the introduction of anæsthetic agents, conservative surgery has taken great strides, and I think you may look upon conservatism in surgery as the necessary result of anæsthesia. For although operations of this kind were performed years ago by the Moreaus, Park, and others, and their utility demonstrated, yet the operations of gougings, scrapings, and partial resections were so horribly painful to the patient, and occupied so much time in their performance, that surgeons dreaded to undertake them. Of late years surgeons have learned to discriminate disease of one part of the tarsus from another, and to apply a different, but appropriate, treatment to each.

Looking at the subject in a diagnostic point of view,—and the treatment is most intimately connected with the diagnosis,—we find that the pathology of diseases of the tarsus is closely

connected with its healthy anatomy. Composed, as it is, of seven bones, it presents four distinct articulations. By the term "articulation," applied to the tarsus, I do not mean merely the connexion of contiguous bones with each other, but distinct synovial sacs shut off from communication with other synovial sacs in the foot. These are well represented in the annexed diagram, drawn by my house-surgeon, Mr. Kempster.

FIG. 2.



The posterior calcaneo-astragaloid is the first of these; next comes the (a) anterior calcaneo-astragaloid, the synovial membrane here serving also for the astragalo-scaphoid; (b), the calcaneo-cuboid is the third; and (c), the anterior tarsal synovial membrane is the fourth and largest of all, and the most important in a surgical aspect. It extends between the scaphoid and the three cuneiform and cuboid bones, between the cuneiform bones themselves, between the two outer cuneiforms, and the bases of the second and third metatarsal bones, and also between the external cuneiform and the cuboid. (d) is the articulation between the cuboid and two last metatarsal bones; and (e), that between the internal cuneiform and the metatarsal—not, strictly speaking, tarsal joints.

In the vast majority of cases, so far as my experience goes, it is the osseous structures, and not the articulations, which are primarily diseased. The bones, being cancellous, far removed from the centre of circulation, and exposed to alternations of temperature, readily become the seat of congestion and caries, rarely, however, of necrosis; and in strumous subjects not unfrequently fall into a tuberculous condition. Caries, whether simple or tuberculous, once set up in the bones, speedily implicates the articulations secondarily.

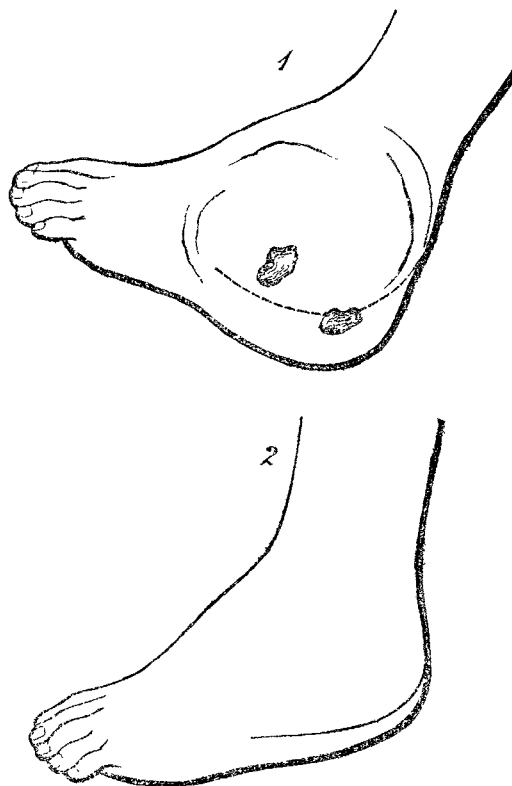
Now you can easily conceive, on casting an eye on the arrangement of the tarsal synovial membranes, that the extent of disease will, in a great measure, depend upon its seat. Thus, a person may have disease in the os calcis, extending even to the cuboid, with very little likelihood of its proceeding farther for a length of time. Such disease will be limited to the outer part of the foot, does not involve its integrity, and readily admits of removal by operation. But let him have disease springing up in the scaphoid, or in one of the cuneiform bones, or in the bases of the second or third metatarsal bones, then the morbid action will rapidly spread through the whole of the anterior and inner part of the tarsus, and, in all probability, no resection operation can be advantageously employed. So that the seat of disease influences materially its amount, extent, and the kind of operation required for its removal.

Let us now consider the various bones of the tarsus separately, as primary centres of disease.

The os calcis is diseased more frequently than any other bone of the foot, being, from its exposed situation, liable to injuries of all kinds, receiving the weight of the body when alighting on the feet in jumping, and having strong muscles inserted into it. Caries is the disease usually attacking the calcaneum; necrosis very seldom, although we sometimes find a piece of necrosed bone in the centre of a carious cavity. When this

bone is diseased, the posterior part of the foot is swollen, and perforated by one or several fistulous openings, through which a probe passes down to, and sinks into, carious bone. On further examination, we find that the rest of the foot is healthy. Having thus limited the disease to the os calcis, what course is open to us in the way of curing the patient of the disease? Why, we may of course lay open the sinuses freely by means of a T-shaped incision, and gouge away the diseased osseous structures. This may always be done with success, however extensively the cancellous structure of the bone is involved, provided an external sound shell exists. You have often seen a little girl, who now occasionally attends here amongst the out-patients, upon whom I performed this operation twice, the disease having recurred after the first gouging. So much of the calcaneum was taken away in that case, that a mere shell of bone only remained; and yet the removed bone has been replaced by fibroid tissue, which will in time no doubt ossify. She has a perfectly useful foot, and the only sign of any operation having been performed is a small, depressed cicatrix on the outer side. Indeed, where you have disease limited to the os calcis, such an operation as I have just mentioned will generally be attended with an excellent result, and it is but very seldom indeed that complete excision will be required. But in some cases you will find that the morbid action originating in the os calcis has not only involved the whole bone, but has extended somewhat beyond it, implicating the calcaneo-astragaloid, or the calcaneo-cuboid articulations, or both. Then you must proceed as I did in the case of a girl who was in the hospital last summer, and of whose foot this drawing was a very accurate representation—Fig. 3 (No. 1)—namely, perform complete excision of the whole os

FIG. 3.

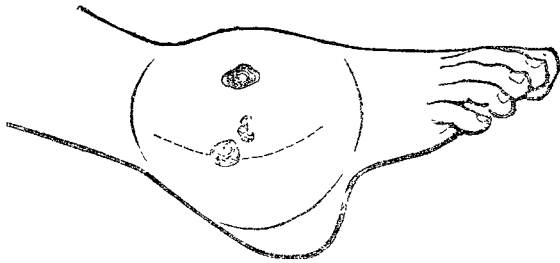


calcis, and gouge away any diseased bone that may be met within the astragalus or cuboid. The girl made an excellent recovery; the heel continues somewhat flattened, it is true, but she has a sound and perfectly useful foot, of which this drawing (2) represents the condition three months after the operation.

The astragalus is situated in a position of great surgical importance. Articulating, as it does, with the malleolar arch above, with the calcaneum below, and with the scaphoid in front—forming, as it were, the key-stone of the foot—it is perfectly evident that any morbid action commencing in it is very likely to spread to and involve all the more important structures of the foot. Seldom, indeed, does disease originating here long remain confined to this bone; and, so far as my experience goes, gouging operations, even if performed at an early period, are rarely of much benefit, the morbid action continuing to extend notwithstanding their employment. Indeed, in diseased astragalus, I believe that excision ought, as a rule, to be practised in preference to gouging, contrary to what is the

case in the calcaneum. In these cases you find—what you see in this drawing, which represents the foot of a boy whose astragalus I excised—swelling just in front of the malleolar arch,

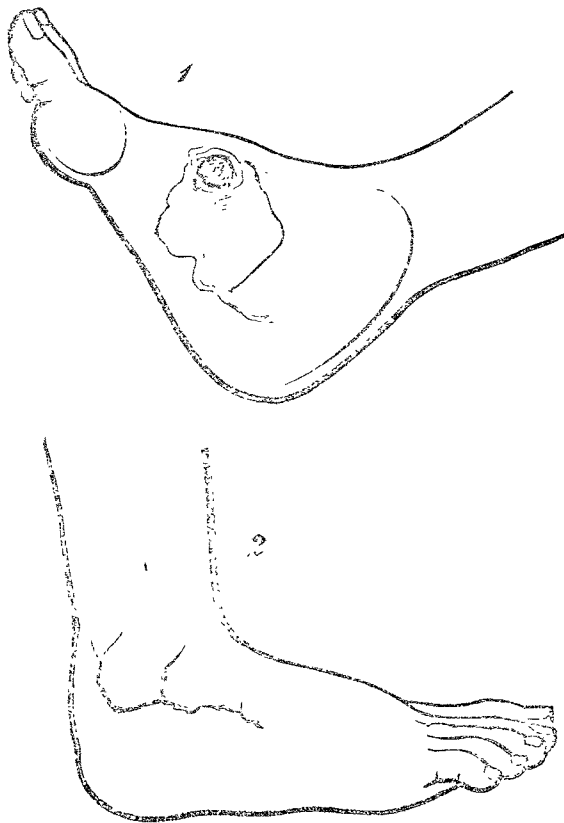
FIG. 4.



with fistulous openings leading down to the diseased astragalus; the anterior part of the foot and the heel being quite sound. You may have disease of the ankle-joint itself, depending upon primary disease of the astragalus for its origin, and then the laxity, grating, &c., symptomatic of diseased articulation are present. The treatment in such cases consists generally in removing the astragalus from its bed, and gouging away any diseased bone which may exist either on the upper surface of the calcaneum or under surface of the malleolar arch. Very large portions of bone may be removed from this situation. I have taken away the whole of the malleolar arch and astragalus, and gouged out the upper surface of the os calcis very freely, and yet the patient has recovered with a strong and movable foot, but very little shortened or deformed.

The accompanying cuts (Fig. 5) are taken from a young man on whom I last summer performed the operation just described,

FIG. 5.



and whom you have recently seen at the hospital from time to time. Fig. 5 (1) represents the foot before the operation; Fig. 5 (2) the foot six months after the removal of the malleolar arch, both malleoli, the astragalus, and a portion of the upper surface of the calcaneum. The foot, as you have seen, is perfectly useful and strong, and the false joint at the ankle movable. There are cases, however, in which we find that the disease has extended so far beyond its primary seat, that amputation rather than resection is required. But in the majority of instances, removal of the astragalus and gouging away the upper surface of the calcaneum will suffice. In extreme cases, however, you might find it necessary to adopt the practice successfully resorted to by Mr. Thomas Wakley, of excising both bones.

The scaphoid bone stands next in importance to the astragalus in its power of implicating a great extent of the foot

when diseased. The morbid action may extend either backwards, and affect the astragalus—in which case you will act much as you would do in disease of the latter bone; or it may pass forwards, and then the whole anterior tarsal synovial membrane becomes affected. A bulbous swelling of the anterior part of the foot, perforated by fistulous openings leading to diseased bone,—the heel, astragalus, and ankle-joint being free,—indicate the existence of the condition which I have just named.

How, then, are we to treat disease of the scaphoid extending to the large anterior tarsal synovial membrane? (Fig. 2 c.) Resection in such cases is, I believe, useless. I have never seen nor heard of that operation being done, and I should imagine that if the scaphoid were excised, the operation would be followed by total disorganization of the foot, requiring amputation. In these cases Chopart's operation is usually the only resource, and should be performed, except in certain instances, where, from the very extensive disorganization of the soft parts, we may require to go farther back.

When the *cuneiform bones* are the seat of caries, you will generally find that the middle cuneiform is the bone primarily affected. Thence the disease extends to the lateral ones, or to the bases of the second and third metatarsal bones. In such cases the anterior tarsal synovial membrane usually becomes extensively implicated, and Chopart's amputation will be required. But if the morbid action continues to be limited to the middle cuneiform and the contiguous metatarsal bones, and the patient's general health is good, removal of the diseased osseous structures by the gouge, with extraction of the carious cuneiform, may be attended by successful results.

The *cuboid* is seldom primarily diseased. I have had two such cases, one of which was successfully treated by gouging; but, in the other—that of a man named J—, whom some of you will recollect—Chopart's amputation became necessary, in consequence of implication of the anterior tarsal synovial membrane.

In many cases of diseased tarsus, as in that forming the text of these remarks, the morbid process is not confined to one, but spreads to several other bones. Here you must be guided in your treatment by the seat and extent of the disease. In one such case—in a lad about sixteen, who was sent to us from Staines—I removed the lower two inches of the fibula, some of the under surface of the tibia, and greater part of the astragalus, os calcis, and cuboid, and yet complete recovery took place; and in the man upon whom I operated last week, although nearly the whole of the outer side of the foot was gouged away, I should expect an excellent result were it not that the articulation between the cuboid and external cuneiform bone has been opened, and that (and now you will see the force of the remark I made at the commencement of the lecture), in consequence of this, the disease is likely to extend across the foot, disorganization of the whole foot to take place, and amputation to become necessary.

In conclusion, I must warn you not to be in too great a hurry to operate on very young children. You will find that in infants, and in children under five years of age, caries of the tarsal bones with abscess may frequently be recovered from by proper constitutional and local treatment, conducted on ordinary principles, without the necessity for operative interference.

SOME REMARKS

UPON

THE CRITICISMS THAT HAVE RECENTLY BEEN
PASSED UPON

THE DIGESTION OF ALBUMINOUS BODIES
BY THE PANCREAS.*

By LUCIEN CORVISART.

THE views propounded in my former paper, "On the Digestion of Azotized Alimentary Bodies by the Pancreas" (V. Masson, Paris, 1857; also THE LANCET, February 26th, 1859), having, in one quarter, elicited the warmest commendations (Schmidt's "Jahrbücher," 1858, pp. 21 and 25; Professor O. Funke); in another, encountered the most absolute rejection ("Nachrichten Götting," 14, 1858: Kefestein and Halwachs);

* Schmidt's Jahrbücher. May, 1859.