

Carnochan *Walter L. Allen*
(for J.M.C.)

EXSECTION

OF THE

ENTIRE OS CALCIS.

BY

J. M. CARNOCHAN, M. D.,

*Surgeon-in-Chief to the State Hospital; Professor of Surgery in the New York
Medical College, &c.*

34
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A CASE
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DR CARNOCHAN'S CASE OF EXSECTION OF THE OS CALCIS.



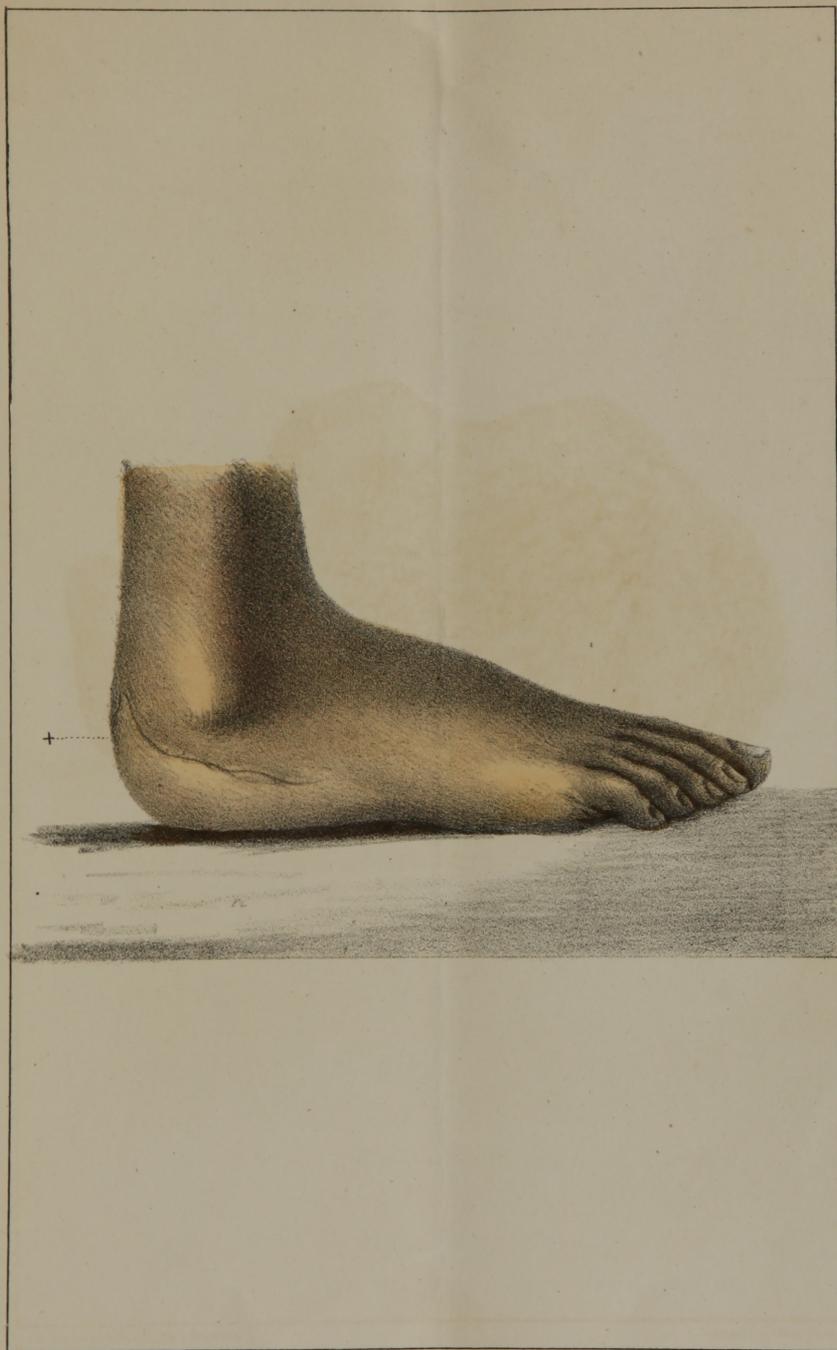
From Nature by Plunket.

Ackerman Lith. 379 Broadway N.Y.

*The right os calcis, in a state of caries and sub-inflammation, through its entire extent—exact size—
+ Posterior part.— o anterior articular surface—normal.*

Nº II.

OUTER ASPECT OF THE RIGHT FOOT AFTER CICATRIZATION.



From Nature by Flanckel

Sickerman Lith. 379 Broadway N.Y.

+ The line of the Cicatrix which is seen not to encroach upon the plantar surface of the foot. The size reduced.

EXSECTION

OF THE

ENTIRE OS CALCIS.

OPERATIONS for the removal of portions of the os calcis have been frequently performed; its entire removal, however, has been resorted to but in very few instances. In a case of necrosis of this bone, occurring in a boy eleven years of age, and of strumous diathesis, which came under my notice as early as the year 1846, the whole of the bone was extracted without difficulty. The following case of successful removal of the entire bone, for *caries* of its greater portion, by a formal operation and dissection, is the only one, so far as I know, which has been reported in this country. Such an operation is required for extensive caries, for osseous tumors, for osteo-aneurism, and for injury done to the bone from gun-shot wounds, or from other traumatic lesions.* In osteo-aneurism, particularly, where the pathologic condition must certainly be

* Where a short bone is in a condition of complete *necrosis*, it is commonly detached by the absorbents from the other tissues, and can be extracted by means of the fingers or forceps. Such proceeding cannot properly be called an *exsection*, although an incision of the soft parts may be used to facilitate the extraction of the dead bone.

limited by the extent of the os calcis, it is bad practice to resort to amputation of the leg—an operation which, under such circumstances, will compromise the life of the patient, subject him, unnecessarily, to a severe mutilation, and interfere, afterwards, with the comfort of life.

Case.—John Moehrig, laborer, a native of Germany, aged twenty-eight years, was admitted into the State Emigrants' Hospital on the 11th October, 1854, with caries of the posterior part of the foot. According to his statement, he is of scrofulous parentage, but is himself healthy, with the exception of the local disease, and the apparent effects of prolonged irritation acting upon his system. In October, 1852, after exposure to severe cold, he was attacked with severe pain in the whole lower limb. The region of the ankle and heel became swollen, red, and exceedingly painful; matter in time formed over the os calcis; and this being evacuated, the bone could be felt with the probe, bare, and extensively diseased.

Upon his entrance into the hospital, the ankle and the posterior part of the foot were much swollen; the region of the heel and instep was hard, enlarged, and purple on the surface. Three sinuses existed upon the outer and upper portion of the posterior part of the foot, the outer sinus allowing a probe to pass deeply into the bone. Since his attack he had been unable to follow his vocation or to put his foot to the ground, and could walk only by the aid of crutches. His

general health had deteriorated from want of exercise and from the continuation of the discharge.

He was immediately put upon tonic and antistrumous remedies—quinine, iod. potassium, and Lugol's iodine solution being alternated, while emollient applications were used upon the diseased parts, and the recumbent posture enjoined. Therapeutic means proved of no avail; the patient rather retrograded than gained; and, fretted continually by his disease, at last demanded an operation, to relieve him from his painful, and, as he termed it, miserable condition.

This alternative being decided upon, the question arose as to amputation of the leg, or exsection of one or more bones of the tarsus. From the external appearance of the part, it might reasonably be supposed that more bones than one were affected; and, with this opinion, amputation at the lower part of the leg was suggested by some, as being the most proper proceeding. The sinuses, however, led to the os calcis, and the probe could not detect denuded bone elsewhere. It was finally decided to exsect this bone first, and to proceed to amputation, if the other tarsal bones were found sufficiently implicated.

On the 1st of December, 1855, the patient was brought into the amphitheatre, and chloroform administered. He was placed upon the table, with his face downwards, the diseased foot and the lower part of the leg projecting over the margin of the table. The assistants being properly placed, an incision was made

on the outer margin of the tendo-Achilles, commencing about an inch above the external malleolus, and extending downwards to the lower and outer part of the heel, to a point half an inch above the plantar border of the foot. From the termination of this incision another was made to extend along the outer aspect of the foot to within half an inch of the posterior extremity of the fifth metatarsal bone. From the upper part of the first incision another was made directly across the lower part of the leg, terminating a little within the inner margin of the tendo-Achilles, at its upper part. The two flaps thus formed were reflected—the outer from the external aspect of the os calcis, the inner from its internal surface, carefully protecting the posterior tibial artery and nerve, as well as the adjoining tendons. With a blunt-pointed bistoury, the tendo-Achilles was divided close to its insertion. The tendons of the peroneal muscles were then carefully separated from their tendinous sheaths and hooked to one side; the same precaution was also taken with the tibialis posticus, the flexor communis longus digitorum pedis, and the flexor longus pollicis pedis. The external lateral ligaments were then divided, and the joint between the astragalus and os calcis entered from behind. Using now the calcis as a lever, the interosseous ligament, the calcaneo-cuboid, and other ligamentous connections between the different bones with which it is connected were divided, and the exsection of the bone completed, by carefully dividing the strong liga-

ment running under the tendons of the tibialis posticus and the flexor longus digitorum pedis, between the internal malleolus and the *small process* upon the inner and anterior part of the os calcis. The different steps of the dissection are much facilitated by making the assistant, who has charge of the leg, flex it slightly upon the thigh, in order to relax the peronei and the flexor muscles of the foot; and also by everting or inverting the foot. By these movements, the ligamentous bands of union between the bones are stretched and made more tense.

The articular surfaces of the bones in contiguity to the calcaneum were entirely healthy. The lips of the wound were brought together by points of interrupted suture, and the wound dressed so as to heal by first intention.

In performing operations on the lower extremities, the principle may be laid down, that the incisions should be fashioned so as to leave the resulting cicatrices removed from the influence of pressure or friction during locomotion. This object is attained by an operation projected upon the plan above described. The cicatrix does not, in the slightest degree, encroach upon the plantar aspect of the foot; consequently, during the movements of progression, it is not exposed to the contact of any surface by which irritation could be produced.

Low diet, with anodyne drafts at night, were prescribed for a few days. The tonic treatment was

again resumed and continued. The wound gradually healed, continuing to discharge, from a point under the external malleolus, a considerable amount of sero-purulent matter. This gradually ceased, and, three months after the operation, the cicatrix was sufficiently hard to allow the patient to put his foot to the ground and walk.

The pathological condition of the os calcis is such as to place it beyond the reach of restoration by internal or constitutional means. The bone is very considerably enlarged by the inflammatory process which has pervaded its whole extent. The greater part of the bone, and particularly the posterior and outer portions, are in a state of confirmed caries. The more anterior portions, and those parts not affected by actual ulceration, are expanded and in a state of sub-inflammation.

December, 1856.—The patient soon became strong and healthy, and, at the present time, with a padded heel to his shoe, he walks with but little impediment, and without the slightest inconvenience from the cicatrix.

No. 1 of the accompanying plates represents the bone after partial maceration. No. 2 shows the line of cicatrix after the healing process has been completed.

45 LAFAYETTE PLACE,
1st *May*, 1857.

