ON
EXCISION OF THE OS CALCIS,

IN INCURABLE DISEASE OF THAT BONE, AS A SUBSTITUTE FOR
AMPUTATION OF THE FOOT.

WITH A CASE.

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UNTIL a comparatively recent period, amputation below the knee was looked upon as the only resource in incurable disease of the larger tarsal bones. This mode of treatment has, however, been very generally superseded by amputation at the ankle-joint. Although in the majority of instances, strumous disease of the tarsus is not confined to one bone, and the results of partial removal are consequently very frequently unsatisfactory, exceptional cases are not rarely met with: and when the os calcis is alone affected, I have failed to discover any valid reason which can be urged against the excision of that bone. When considering the subject in reference to the following case, the only difficulty which at all forcibly presented itself to my mind was the possibility of inflammation, extending from the articulations of the cuboid bone, generally throughout the lesser tarsal joints, and so giving rise in a strumous lad to disease as incurable as that which called for removal. A somewhat similar objection has not unfrequently been made against amputation at the ankle-joint, from the injury which is thereby inflicted

on the lower extremity of the tibia: but the successful result of between thirty and forty cases in the hands of Mr. Syme alone, has proved this fear to be groundless.

At the time I operated on this patient, I was not aware that a similar case had been a short time before subjected to the same treatment by Mr. Hancock: but as its unsuccessful termination prevented any decision being arrived at as to the value of the operation, I am not thereby deterred from bringing the subject under the notice of the Fellows of the Royal Medical-Chirurgical Society, in the hope, that in the hands of other surgeons, exarticulation of the os calcis may be resorted to with results as satisfactory as in the following case.

William G., an unhealthy, ill-nourished, scrofulous boy, 16 years old, was admitted into the Cumberland Infirmary, July 29th, 1848, with disease of the right tarsus, the result of a slight injury he had received several years before. From the time of the accident the foot was swollen and painful, but suppuration and ulceration did not occur until six months before his admission, since which time he has been unable to put the foot to the ground, has suffered much pain, and his health has been greatly impaired. The whole of the back part of the foot was considerably enlarged, and immediately below the inner ankle was an ulcer from which several sinuous passages proceeded to the bone, through which a probe could readily be passed into two distinct parts of the substance of the carious os calcis, one of these being in its anterior extremity. The disease appeared to be altogether confined to that bone. Although it was vain to look for the restoration of the limb to health by any other means than the removal of the affected part, it was advisable, in his debilitated condition, to wait, that he might have all the advantages which were likely to result, from his removal from his own ill-drained and unhealthy home, to the purer atmosphere of the hospital, and a full and nutritious diet.

With rest and nourishing food, and by the administration of cod liver oil, his condition gradually though slowly im-

proved; but his foot, now seldom very painful, manifested no sign of amendment. Further examination served but to confirm the original impression, that the disease was confined to the os calcis, and it therefore seemed desirable, that that bone alone should be removed. As a careful consideration of the anatomical construction of the foot offered me no objection to this, and as I believe that the foot would answer all the purposes of locomotion without it, I determined on its extirpation.

October 9th.—Insensibility having been induced by means of chloroform, an incision, down to the bone in its whole extent, was made from the lower margin of the ulcer, that is, about half an inch below the inner ankle, directly below the sole of the foot, to just below the fibula. This incision would have enabled me to remove the foot at the ankle joint, if the disease of the tarsal bone had proved more general than I anticipated. A careful examination at this period of the operation having determined me to proceed in my original design, the posterior flap was carefully reflected from the surface of the bone, the insertion of the tendo-achilles separated, and the joint between the astragalus and calcaneum reached.

By the introduction of a small narrow-bladed scalpel, I succeeded in dividing the ligamentous structures on either side, and also the inter-osseous ligament. This last was the only part of the operation attended with anything like difficulty, forcible depression of the os calcis being necessary to admit of the division of the more distant parts of the inter-osseous ligament, while at the same time great care was required to prevent my injuring the astragalus. I next made two incisions, one on either side of the foot, commencing at the junction of the os calcis with the os cuboides, and ending at the extremities of the first, or transverse incision; dissected, this flap from the under surface of the bone readily separated the connection of the calcaneum with the cuboid bone, and after a few touches of the scalpel, the former, with scarcely a particle of soft parts attached, was removed. The astragalus and cuboid bones appeared quite healthy. The two plantar

arteries, which had been divided near to their origin, and two or three small vessels in the anterior flap were tied, the parts placed in apposition, and retained by means of strips of lint dipped in cold water, oil silk and bandage, and the limb was laid on a splint placed on its outer side.

For several days he went on as well as could be desired ; but after that suffered much both generally and locally from acute inflammation of the tarsal joints, which resulted in the formation of an abscess in the dorsal surface of the foot. This was opened, the wound speedily healed, and no recurrence of a like nature took place. About this time erysipelas and phlebitis attacked in rapid succession every patient with wound in the hospital, and the subject under consideration did not escape. Happily, however, in him the disease was confined to the affected limb, and was altogether less severe than in some other cases, although for several days his recovery appeared extremely doubtful. After recovering from this attack, his general health as well as his foot gradually improved, and at the end of the tenth week, the wound was healed, the foot was firm, and in shape not materially different from the other.

He left the hospital January 17, fourteen weeks after the operation. At this time he was able to bear considerable pressure on the heel without suffering, but as I knew that slight injury might lay the foundation of important disease, I forbade him to use the foot, or wear a shoe for several months. This caution appeared the more necessary, as a brother and sister were at this same time under treatment for strumous disease of the bones. At the end of six months he again presented himself with his foot perfectly well, and he was permitted to use it as he thought fit, but from the fear of injuring it, and as he had no proper shoe, he continued to use a crutch for some time.

It is now sixteen months since the operation, and the foot continues sound. When sitting he is able to extend the foot perfectly, and imperfectly when standing, but in walking the spring of the foot is so nearly lost, that he has a slight limping in his gait. He wears a boot in which a piece of cork sup-

plies the place of the lost bone, he can walk, run, and jump, with little impediment: in short, for all the uses of a foot, it is as serviceable to him as the other.

From a cast of the foot a year and eight months after the operation.

Since writing the foregoing, I have been favoured with the particulars of three cases, in which excision of the os calcis has been resorted to in the Newcastle Infirmary, for extensive caries of that bone, the first two cases were under the care of Mr. Greenhow, the last under that of Mr. Potter, and all I am informed have been attended with success, to a greater or less extent. In the first patient the operation was followed by some sloughing of the flaps, but the wound afterwards cicatrized favorably, and when last heard from, the man was following his usual laborious occupation, that of a pitman, in Wales.

In the second case, the patient, also a pitman, from whom portions of the calcaneum had been twice previously removed without benefit, the report states, that in less than a month from the date of the removal of the bone, "the wound had almost healed up, and the deformity was not very great." No proper estimate, however, can be formed in this case of the value of the operation, as disease of a similar nature to that in the foot "has since appeared in the hip joint, and is also affected with phthisis."

In the last case, a very scrofulous lad, 15 years old, by trade a tailor, the calcanium was removed entire, and at the same time a part of the surface of the astragalus, which was also diseased, was gouged out; the report states, that "the wound united by the first intention, and the case did exceedingly well; two fistulous sores, however, remained open, and communicated with the diseased astragalus, but he was dismissed two months after the operation, walking on his foot, with a pad in his shoe at the heal."