A CASE
OF
RESECTION OF THE TARSAL BONES
FOR
DOUBLE CONGENITAL TALIPES
EQUINO-VARUS.

BY
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ALTHOUGH great progress has been made of late years in the cure of talipes by the introduction of subcutaneous tenotomy, and the improvement of mechanical appliances, there will always remain a number of cases, which, from the age to which they have attained, the rigidity of the tissues, and the altered shape of the bones, present insurmountable obstacles to treatment by the ordinary methods. It is not improbable that many of these cases might be successfully treated in the way which was adopted in the following instance :

Edwin H—, æt. 12, was admitted into Guy's Hospital on May 8th, 1875, under the care of Mr. Cooper Forster. From birth he had suffered from deformity of both feet. When he was four years old he was taken to Gloucester Infirmary, where some tendons were divided, but without

any beneficial result. Since then he has not been under any treatment whatever.

On admission the anterior part of each foot is turned inwards at a right angle to the rest of the foot, and is twisted in such a way that the patient walks on the outer edge of the dorsum, while the sole looks backwards. The heels are raised, especially that of the left foot. On the dorsal aspect of the external cuneiform and cuboid bones bursæ have formed, and that upon the right side is suppurating. He stands with his legs about a foot and a half apart, and he can only walk, or rather waddle, with great pain and difficulty.

He was kept in bed, and the bursal inflammation soon subsided. Splints were applied to the outer side of the legs, and an attempt was made to improve the position of the feet by elastic bands.

During Mr. Cooper Forster's absence in September, the boy came under my care. He was then in much the same condition as when he came in, except that the supuration of the bursa on the dorsum had disappeared. I found that the feet were quite rigid, and that hardly any improvement could be produced in them by the application of force. I first divided subcutaneously the tendo Achillis, the tibialis posticus tendon, and the plantar fascia of the left, which was the more deformed foot. As very little was gained by this operation and the subsequent treatment, I resolved to adopt severer measures. It was at first my intention to remove the cuboid bone. Mr. Howse, however, suggested to me that it would be far better to cut out a wedge-shaped piece of the tarsus without paying any regard to its articulations.

Acting upon this advice of my colleague, I decided to expose the bones of the instep, and then to saw it through in two places in such a way that the two sections should meet at the inner border and diverge towards the outer border of the foot. I thought, also, that it would be easy to arrange that the upper surface of the segment removed should be somewhat more extensive than the lower, and

that in this way the peculiar twist of the foot, which contracted at the same time the sole and its inner border, might be remedied.

On October 12th chloroform was administered, and after an Esmarch's bandage had been applied, I made an incision three inches in length along the outer border of the left foot, from the middle of the os calcis to the middle of the fifth metatarsal bone. From the centre of this incision I carried another two inches long transversely across part of the dorsum, dividing the tendons of the peroneus longus, the peroneus brevis, and the extensor brevis digitorum. When I had carefully reflected the soft parts, I found that I had to modify my plans. I could not expose the whole of the triangular surface, which I had intended to saw out, without dividing the extensor tendons, or making an incision upon the inner side of the foot. I therefore decided to remove first the cuboid. This was readily done by means of the scalpel and elevator, and the bone was found to be of normal size and shape. Then I sawed off the great process of the os calcis in a plane looking forwards, outwards, and upwards. Next, by means of an elevator, bone-forceps, and dressing-forceps, I took away piecemeal portions of the three cuneiform bones, for the deformity could not be reduced until I had excavated as far as the inner border of the foot. I then pared off some more of the os calcis with a strong knife, and continuing the plane of section inwards I cut away nearly all the scaphoid and a part of the head of the astragalus.

Finally, I removed the articular cartilage from the base of the two outer metatarsal bones. The foot could now be easily placed in the normal position, and the osseous surfaces fitted each other with a fair degree of accuracy. The soft parts of the sole had not been touched.

On relaxing the elastic tourniquet, a brisk hæmorrhage ensued. The wound was dressed with carbolic gauze. The antiseptic spray was used during the operation and at each dressing.

It was found necessary, on account of the continuous oozing of blood from the bones, to put in a sponge soaked in carbolic lotion, and to keep it there until a week after. Very little systemic disturbance followed the operation. His temperature only once reached 101° . I at first had some difficulty in keeping the foot in good position, but at the beginning of November I adopted a plan which enabled us to adjust the surfaces and to dress the wound very easily. It consisted of a back-splint extending from the middle of the thigh to within four inches of the heel. To the distal end of this was fastened a transverse bar of wood, terminating on either side in short upright bars, to which I attached the fore part of the foot by means of strapping.

By November 23rd the left foot was nearly healed, so I decided to operate upon the right. I at once proceeded to resect the tarsus, without any previous division of the tendons. The bones were so soft that I was able to pare them away without using the saw. In every other respect the operation was the same as that performed upon the other foot.

Again there was a troublesome oozing of blood, which could only be restrained by the retention of a sponge between the cut surfaces. He made a rapid recovery. His temperature only once rose to 102° , and was usually below 100° . There was but little discharge, and no burrowing of pus. The same apparatus was used to draw the front part of the foot into position.

By the 1st of January he was able to get about in a wheel-chair.

On February 3rd, less than ten weeks from the second operation, the wounds were quite healed, and he left off the dressings and splints. A few days before he had begun to walk with assistance. He could now walk by himself, and no apparatus was used from that time.

In March he went to the Bognor Convalescent Establishment.

Upon his return in April I examined him carefully. The feet were quite free from any tenderness. They were rather short for a boy of his age, and the heels projected somewhat backwards. I was surprised to find that the arch of each instep was as good as in a well-formed foot. The movement of the ankles was considerably improved, though not as free as it should be. He could walk well,

FIG. 1.

Before operation.

FIG. 2.

After operation.

treading upon the whole of the sole. The strength of the feet was also shown by the fact that he could jump and hop. The movement of the toes was perfect, and the peronei had acquired some firm attachment to the outer side of the foot. I could not, however, satisfy myself that the peroneus longus had any influence upon its inner border. The cicatrices of the incisions had contracted so

much that their original direction could no longer be recognised. No depression remained to show where the tarsal bones had been removed, and I doubt very much whether any one who examined the feet would have suspected that so much had been taken away. The woodcut (Fig. 2) shows the condition of the feet at this time, and as I brought him here on the 25th of last April some of the Fellows were then able to test by actual inspection the completeness of his recovery.

In September his father wrote to say that he was quite well and able to work, and that he had lately walked six miles with but little fatigue.

Remarks.—Since I operated upon this patient, I have learned from Mr. Adams' interesting work on club-foot that Dr. Little formerly suggested that "in inveterate varus, the treatment might well be commenced in robust subjects by ablation of the os cuboides." In the Society's 'Transactions' of 1857 there is an account by the late Mr. Solly of a case in which he removed all the cuboid, except the posterior articular surface, in both feet of a young gentleman, aged 23. Mechanical treatment was then used and the patient made a fair recovery. Mr. Solly considered that the operation materially expedited his cure.

Mr. Davy has recently published a series of cases in which removal of the cuboid bone had been followed by good results. I have not heard of any other instances in which this treatment has been adopted.

The chief points in the operation which Mr. Howse suggested and I performed upon this patient appears to me preferable to that just mentioned, are the following :

1. After resection the foot can be placed at once, if desired, in its proper position. Certainly in my own case the removal of the cuboid alone would not have allowed of this.

2. There is no large cavity left which has to be filled up with reparative material. Moreover, as the bony surfaces are exposed, and the articular cartilages taken away,

I consider that fibrous, and possibly bony, union is likely to be established with greater rapidity.

3. The patient will probably be able to discard the use of apparatus much sooner, for little, if any, traction has to be used in order to restore the proper shape of the foot. In the case I have related the patient began to walk without any apparatus in ten weeks after the second resection, and he has never had to wear any since, whereas the patients of Mr. Solly and Mr. Davy appear to have required to use mechanical appliances for a long time afterwards.

With respect to the operation itself and the subsequent treatment, the following points may be deduced from the single successful case which I have brought before you.

1. It is not necessary to divide the tendo Achillis before the resection. If the elevation of the heel be not great it may not be requisite to perform tenotomy at all.

2. Esmarch's bandage is of great use, as in the bloodless state of the tissues it is easy to remove such portions of bones as will leave two plane surfaces suited for exact coaptation.

3. It is better to begin by removing the cuboid, and then to cut or saw off such portions of the adjacent bones as must be taken away, in order that the foot may be placed in a good position without the employment of much force.

4. As so many synovial cavities and sheaths of tendons have to be opened, the dangers of the operation are much diminished by the careful use of antiseptic precautions.

5. The subsequent employment of such a splint as that which was used in this case facilitates very much the maintenance of the foot in good position, and renders the change of dressing a simple and almost painless proceeding. I may add that I have since used splints made upon this principle for the treatment of ordinary cases of talipes, and have found them very efficient in everting and abducting the front part of the foot.

In conclusion, I would submit that this operation may

be adopted with advantage in many cases where ordinary methods have been employed without success, or where the parts are so deformed and rigid that ordinary methods are likely to fail.

I should also recommend it in cases where it is desirable for the patient to avoid the long and painful treatment and the expensive apparatus which are required for the cure of the severer examples of this deformity by ordinary methods.