bones of the tarsus, the head and neck of the astragalus may be said to be very nearly in a line with the antero-posterior axis of the trochlear surface. But in the astragalus of a newly born child with talipes varus, there will be observed a peculiar bending or angular curve in the bone, by which the axis of the head and the axis of the body or trochlear surface are placed at a very conspicuous angle to each other. And this is well seen in this preparation, where, from confirmed growth in an abnormal direction, the bone has that peculiar curved or twisted form which Mr. Adams has so well described.

REMARKS ON RESECTION OF THE TARSAL BONES FOR TALIPES.*

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THE lecture on excision of the cuboid bone for exaggerated cases of talipes equino-varus by Mr. Richard Davy of the Westminster Hospital, which was published in the BRITISH MEDICAL JOURNAL of April 29th, 1876, together with the abstract of a lecture, also by Mr. Davy, on the same subject, in that JOURNAL for December 15th, 1877, and the case of resection of the tarsal bones for congenital talipes equino-varus brought before the Royal Medical and Chirurgical Society on October 10th, 1876, by Mr. Davies-Colley of Guy's Hospital, having drawn my attention to the possibility of relieving deformity in old and severe cases of talipes, I determined to test the value of operative procedure by bone-resection on the first suitable case that came under my notice.

The intractability and relapsing character of club-foot, notwithstanding division of plantar fascia and tendons, and the expense to poor patients of procuring suitable instruments, as well as the necessity for prolonged surgical treatment, fully justify some attempt at relief by other measures than the ordinary treatment by tenotomy and mechanical appliances.

The procedure which Mr. Davy first adopted was resection of the cuboid alone, and he reported three cases in patients aged respectively 15, 9, and 14 years, where it had answered well. Subsequently (in 1877) he was "ready to defend, not only ablation of the cuboid, but an accurate removal of a wedge-shaped block of the tarsal arch"; such wedge embracing the cuboid, the head of the astragalus, part of the scaphoid, the base of the metatarsal bone, and a chip of the external cuneiform bone. Two cases operated on by him after this manner support the opinion in favour of resection of the tarsus, which Mr. Davy had enunciated.

From the results which ensued in Mr. Davy's cases, also in the one reported by Mr. Davies-Colley, and in the patient whose history I now bring forward, I think surgeons will be justified in resorting to similar operative measures in analogous cases, and in looking upon any patient with club-foot, whatever his age or however great the severity of the deformity, as remediable, if not perfectly curable, by resection of one or more of the bones of the tarsus. The operation may be rendered bloodless, or comparatively so, by the use of Esmarch's bandage, and the antiseptic method of treating such operative cases deprives them of the danger which would otherwise accrue from opening so many joints and synovial sheaths without such precautionary measures.

Tenotomy will remain, as before, the operation for the relief of club-foot in children and infants; but in adults, and in many of the severe forms of talipes, where tenotomy has been resorted to and has failed, resection of one or other of the tarsal bones will be found an useful addition to our catalogue of surgical operations.

The bones at first removed in my patient (whose age was 23) were the cuboid and the astragalus; but, as I found the shape of the foot could not be restored without also taking away the scaphoid, I did not hesitate to resect that bone also. As far as one can judge, after the lapse of ten weeks, the patient is likely to have an useful limb instead of being for life a cripple, and of suffering constant pain from ulceration of the structures on the outer side of the foot, on which she had been obliged from infancy to walk.

So favourable a result in an adult could not possibly have been attained by tenotomy, as the shape of the bones removed, which are now exhibited along with models of the limb, the one taken before the operation and the other quite recently, forbid the belief that, if they had remained, the foot could have ever been restored to its normal shape and position.

Resection of Tarsal Bones for Talipes Equino-Varus in an Adult.—Annie G., aged 23, single, was admitted into the Queen's Hospital under the care of Mr. West, on May 13th, 1878. Her family history was good. She was born with her left foot turned inwards. On admission, she was suffering from talipes equino-varus. Her foot had always been painful, and more so in damp weather. Till sixteen weeks ago, she was able to walk about, but since that time she had not been able to bear any weight on it, because of the great pain which exercise produced. The tendo Achillis was contracted, as also were the tendons of the tibialis anticus and tibialis posticus, drawing the foot upwards and inwards so that the outer border of the foot rested on the ground when she tried to walk. The plantar fascia was contracted. The ungual phalanx of the second toe was drawn inwards and overlapped the great toe. The skin on the outer border of the foot was much thicker from walking on it, and there was slight ulceration of the skin at the base of the fifth toe. It was almost impossible to say what was the position of the tarsal bones.

May 19th. After some consideration of the comparative merits of resection and tenotomy in long standing congenital equino-varus, the former was decided upon. The patient being anaesthetised by ether, a semilunar incision was made on the outer side of the foot over the supposed position of the cuboid. After division of the ligaments, that bone was removed with great trouble owing to its altered position and relations. The astragalus was then excised, and the tendons around the ankle forcibly stretched. The scaphoid bone appearing to nullify all my endeavours to get the foot into a good position, was also removed. The skin-flaps were carefully adjusted and retained by sutures, after a drainage-tube had been introduced into the cavity of the tarsus. The operation was conducted under the carbolic spray. The hæmorrhage, which was somewhat extensive, was quickly subdued by the pressure of the dressings. An outside splint was applied.

May 20th. The patient had suffered a good deal of pain. On removing the dressing, the wound was not perfectly antiseptic. The foot was in a good position. The patient was well in health; the discharge was free. Lister's treatment was continued.

May 24th. The wound was dressed every second day. The discharge was copious, the wound was healthy, and free from unpleasant odour.

May 30th. The discharge was diminishing; the patient's condition was good.

June 6th. The discharge was much less. The line of incision was granulating freely; the limb was less painful.

June 12th. The patient was going on well, both locally and constitutionally. The foot was placed on an anterior splint and swung in a cradle, to improve its position.

June 19th. The granulations, which were exuberant, were ordered to be touched with sulphate of copper.

June 26th. Antiseptic dressing was discontinued. The foot and leg were ordered to be put up in a plaster-of-Paris case, the patient being placed under chloroform in order to prevent pain while the limb was being put in its natural position. A window was decided to be cut over the wound of incision, so that it might be dressed daily with red lotion.

July 9th. The plaster case was removed, as by its pressure it had caused an abscess on the back of the heel, from which escaped about half an ounce of pus; a drainage-tube was introduced, and stygium applied. The limb was ordered to be laid on a pillow, and no apparatus used for twenty-four hours.

July 10th. A gutta-percha splint was applied to the front of the limb; the dressing was repeated as before.

July 15th. Another small abscess having formed in the outer ankle, it was opened and dressed with stygium; an inside gutta-percha splint was applied.

July 30th. The openings were dressed every day with red lotion and were doing well. The original wound was quite healed by August 5th, and a light starch case was then applied, in which the patient was able to walk a little.

Note.—I beg also to call attention to Mr. E. Lund's paper on the same subject, which was read at the Birmingham meeting of the British Medical Association, and which I ought to have mentioned before, as, being one of the local secretaries of that meeting, I had the opportunity of hearing the paper discussed. Mr. Lund ingeniously removed the astragali in a severe case of talipes equino-varus, where ordinary treatment had failed (see BRITISH MEDICAL JOURNAL, 1872, vol. ii, page 438). In my case, I believe that mere resection of the astragalus would not have sufficed to relieve the deformity, and I certainly think that Mr. Davy's plan of removing a wedge-shaped portion of the tarsus is more likely to be effectual in similar severe or neglected cases of talipes equino-varus.

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association in Bath, August 1873.