CLINICAL LECTURE

ON
EXCISION OF AN OSSEOUS WEDGE AT THE
TRANSVERSE TARSAL JOINT FOR THE
RELIEF OF INTRACTABLE CLUB-FOOT.By RICHARD DAVY, M.B., F.R.C.S.,
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GENTLEMEN.—It is now ten years ago since I first advocated in this theatre the propriety of attacking the tarsal arch by osseous excision for the relief of intractable club-foot; I will state now, for your guidance and for the thought of other professional men, in as concise a manner as the cases permit, what my own experience has been, and the conclusions based upon repeated observations. The operation has been, until lately, known as "resection of the tarsal arch;" but this name is now giving place to the more expressive term, excision of an osseous wedge at the transverse tarsal joint; and I prefer this latter description for the following reasons. By the more precise method of removing mechanical wedges from the tarsus, portions of the component bones of the transverse tarsal joint are invariably included, viz., os calcis, astragalus, scaphoid and cuboid; and this is true, not only in cases of talipes varus, but in equinus also.

The title excision of an osseous wedge at the transverse tarsal joint, directs the surgeon's attention to the prime point on which many of these intractable deformities hinge, and includes the partial ablation of bones anterior to the transverse tarsal joint; whereas the term excision of the transverse tarsal joint is only strictly applicable to those cases where portions of the os calcis, astragalus, scaphoid and cuboid bones are alone removed. Permit me to divide, then, the consideration of excision of an osseous wedge at the transverse tarsal joint into these headings:

1. List of cases operated on by myself.
2. Cases suitable for this operation.
3. The details of the operation.
4. Its results.

First, this table concentrates my experience; and the club-foot patients have all been inmates of this hospital.

These 21 cases represent 23 distinct operations (two of them having both tarsi operated on at one sitting; 18 are boys, 3 girls; 10 cases of talipes equino-varus, 9 cases of varus, 2 cases of equinus. My oldest case is twenty, the youngest one year and four months. This infant was operated upon at the express desire of her mother, who was unable to give the time necessary for out-patient treatment. It was a severe case of congenital talipes varus, and had been an out-patient

at an orthopædic establishment since birth. Twenty out of the 21 recovered; and my single death from septicæmia (Case 10) I am disposed to attribute to the prolonged and difficult dissections practised for removing a dorsal wedge of the tarsus through one opening only on the outer side by means of the chisel. And, in passing, let me state that, much as I value the use of the chisel in many operations on bone, yet I have almost entirely discarded its use on the tarsus since the introduction of the saw and director. Try for yourselves on the dead body, and you will soon find out which instrument grants you the greatest precision, and the tissues most immunity from harm; the chisel becomes but an accessory, and not the principal instrumental agent.

Secondly. *Cases suitable for an excision of an osseous wedge.* Let me give an outline of no imaginary sketch. A poor boy is born into the world club-footed; his infant struggles are more than usually miserable, due to the direction of the surgeon and the misdirection of the nurse. When springtide comes, to this cripple is denied the activity of childhood; his apology for sport is but tame acting, he hobbles on, an eyesore to the proud, an object of pity to his neighbours, a distress to his parents, and a nuisance to himself. As time rolls on, the would-be merciful yet hamper him with useless but costly fetters; our victim is confined by splints, or propped up on crutches, still doomed to lasting deformity, until this helpless child, unfit for work, unfit for play, by the stern exhaustion of persistent failure, is banished from home, and relegated to the blank future of workhouse adoption.

It is in such prolonged and persistently rebellious cases of club-foot, that this method of procedure is called for; where expense, loss of time, and certain relapse are considerations. Moreover, in every case, where osseous growth has followed up closely the perpetuation of deformity, nothing short of bone removal will effect a speedy and satisfactory restoration to natural contour and utility. In my own fancy, I have pictured the man, lame from his mother's womb, and who sat for alms at the Beautiful Gate of the Temple, as a case of congenital double club-foot; on Peter's miraculous order, his feet and ankle-bones received strength. In the present day, there exist but few inveterate cases that are not amenable to cure by an excision of an osseous wedge.

In London, however, the exhibition-ground of a most varied out-of-doors pathological series, respect must be given to the vested interests of club-foot proprietors, who are supported by the pedestrians in the rôle of crossing-sweepers, etc., and who find that their receipts are seriously affected by surgical art. Many of us remember a monocular sexagenarian, at the angle of Harley and Queen Anne Streets, who carried a huge box on his head, a broom in his hand, and a species of black leathern bandbox on one foot. This unique triumph of sartorial exaggeration had long aroused my curiosity, and my desire to excise the tarsal arch encased within it. By bribery, I got him inside my house, and insisted on his revealing to my naked eye his naked foot. Under protestation, he did so. "Monstrum horrendum, informe, ingens, cui lumen ademptum!"

Excision of Cuboid Bone, mostly.

No.	Sex.	Age.	Admission.	Operation Day.	Nature of Deformity.	Operation.	Discharged.	Result.
1	Boy	15	Jan. 25, 1874	Jan. 27, 1874	Talipes varus cong., left	Excision of left cuboid	May 27, 1874	Recovery
2	"	15	"	March 17, 1874	Talipes varus, right	Excision of right cuboid	"	"
3	"	14	Jan. 12, 1875	Jan. 18, 1875	Equino-varus, right	Excision of right cuboid	April 1, 1875	"
4	"	10	Jan. 14, 1875	Jan. 26, 1875	Equino-varus, left	Excision of left cuboid	May 26, 1875	"
5	"	10	"	"	"	"	"	"

Excision of Osseous Wedge at the Transverse Tarsal Joint.

6	Boy	6	March 17, 1876	March 28, 1876	Equino-varus, left	Excision of osseous wedge at transverse tarsal joint	May 22, 1876	Recovery
7	"	12	Nov. 7, 1876	Nov. 14, 1876	Equino-varus, right	"	May 21, 1877	"
8	"	12	"	Jan. 16, 1877	Equino-varus, left	"	"	"
9	Girl	1½	Feb. 22, 1878	March 5, 1878	Talipes varus, right	"	April 12, 1878	"
10	Man	20	Nov. 6, 1877	Nov. 20, 1877	Talipes equinus, left	"	Dec. 5, 1877	Death in 14 days
11	Boy	16	May 20, 1878	May 31, 1878	Equino-varus cong., right	Excise of wedge at transverse tarsal joint	Aug. 29, 1878	Recovery
12	"	14	May 8, 1878	May 25, 1878	Equino-varus, left	"	July 31, 1878	"
13	"	10	July 6, 1879	July 8, 1879	Talipes varus, right	"	Sept. 9, 1878	"
14	"	4	June 6, 1881	June 7, 1881	Talipes varus, left	"	July 22, 1881	"
15	"	10	June 10, 1881	June 14, 1881	Paralytic equino-varus, right	"	July 9, 1881	"
16	"	10	June 22, 1881	June 25, 1881	Talipes equinus, left	"	Aug. 11, 1881	"
17	"	11	July 28, 1881	Aug. 4, 1881	Equino-varus, right	"	Oct. 21, 1881	"
18	"	5	Nov. 25, 1881	Nov. 29, 1881	Talipes varus, right	"	Feb. 13, 1881	"
19	Girl	4	March 27, 1882	March 31, 1882	Cong. varus, r.; mal. developed, l. foot	"	June 1, 1882	"
20	"	13	June 1, 1882	June 6, 1882	Equino-varus, left	"	Sept. 9, 1882	"
21	Boy	3½	June 17, 1882	June 20, 1882	Double congenital talipes varus	Both transverse tarsal joints excised	Aug. 21, 1882	"

Mark you, I apply the first four Virgilian epithets to the black leathern bandbox only. A puny case of talipes varus was eased out of this prodigious socket; and the owner of both positively declined to suffer any personal improvement, lest his bread should be taken from him.

Thirdly. *The details of the Operation.* There is scarcely any operation that requires more forethought and mechanical insight than this removal of an osseous wedge at the transverse tarsal joint. You must avail yourselves of an aniline sketch on the skin of the patient's foot, and map out the precise mechanical form of your wedge prior to commencing. In some cases of equino-varus, I have operated first on the plaster-of-Paris cast, and so accurately shaped one's course on the living bone. For these wedges have to be double (so to speak), with two bases and two apices; and I would apply the general law of excisions to this excision, that it is better of the two to remove a slice too much bone than a slice too little; if it be possible, remove only what is necessary.

The method of operating has been already described in the *BRITISH MEDICAL JOURNAL* (October 29th, 1881, p. 698); and I have but little to add to that procedure. The instruments required are a scalpel, dissecting-forceps, bone-forceps, periosteum blunt-curved knife, saw, and retractors. These instruments have been manufactured by Messrs. Wright and Co., 108, New Bond Street, W.; and I subjoin diagrams of those which are new in design.*

Fig. 1. Saw and Parallel-grooved Director (for Equinus).

Fig. 2. Kite-shaped Director (for Varus).

Fig. 3. Blunt Curved Periosteum-Knife.

Fig. 4. Strong Bone-Forceps.

The foot and leg are placed in a splint which permits rotation of the foot outward, and a gum-and-chalk bandage is applied over all. Here let me give you a hint with reference to putting up club-foot in plaster-of-Paris bandages. Do not squeeze the foot in your bandage, as if you were tying up a bundle of toes, but first lay a smooth flat piece of steel on the sole of the foot, and bandage this to the foot; the end of the plate allows the surgeon to manipulate the foot into its required position, and, on withdrawing it (after the bandages are set), a flat broad surface is left for

the sole of the foot to expand on, and adds materially towards the cure.

Again, if you are dealing with a young infant, whose spasmodic kicks enable it to wriggle out of your bandage, put your moist bandage on next to the child's skin, without any intervening padding whatever. I have repeatedly found this to answer, and no sore to be produced. Remove your bandages either with the circular saw (driven by a foot-lathe), or by means of this very efficient forceps.

Fourthly. *The Results of this Operation.*—The efficacy of this method of operating is, in my opinion, proven by our clinical test: for twenty patients have been restored to plantar progression, after unsuccessful treatment elsewhere. The letters that I have received from the boys' parents prove that, from a non-professional point of view, the value of the treatment has been appreciated. Let me read you an extract (Case 15). "April 9th, 1883. The boy is able to walk much better than he ever could before you operated on him; and his foot remains in the same position as when he returned from London"—(July 9th, 1881).

Many of the boys I have frequently met in the London streets, earning their own living, and walking unaided. I have not yet met with a relapse; but I think that a relapse must imply unwarrantable carelessness on the part of a patient's friends, who permit any faulty tendency to be overlooked. And I caution the relatives always on strictly watching for any deviation from acquired symmetry; inculcating on them the law of the perpetuation of distortion, viz., given any deviation of the normal plane of a joint, the exercise of that joint tends to aggravate the deviation. We may recall examples of relapsed genu-valgum, excision, ankyloses of the knee-joint, club-foot, etc. "*Principiis obsta*" is a grand motto in orthopaedic practice. Case No. 20 I often see, walking with her schoolfellows, in my own country village in the north of Devon. I trust that, in proposing such a severe treatment for rebellious club-foot, you all will recognise the great importance of treating the deformity in its early and plastic stage, and so prevent recourse to any cutting operation; but that you also will not hesitate to recommend excision of an osseous wedge in cases where bone-growth, treading on the heels of and backing up distortion perpetuates it; for, with due reverence, I may quote the words of Solomon, equally applicable to orthopaedic surgery as to general culture: "Train up a child in the way he should go, and when he is old, he will not depart from it."

ABSTRACTS OF LECTURES ON PHYSIOLOGICAL DISCOVERY.

Delivered at the Royal Institution of Great Britain.

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LECTURE VI.—THE FORMATION OF THE BLOOD.

THE blood receives from time to time new supplies of material from the alimentary canal, either by direct absorption or by indirect lacteal absorption. It also receives the lymph, and along with it, probably, the cellular structures formed in the blood-glands, whilst it obtains oxygen by the respiratory process. It was the object of this lecture to show how physiologists have arrived at their present knowledge of these operations. Beginning with those happening in the alimentary canal, the lecturer first alluded to the older theories regarding the constitution of food. The oldest notion, traced to Hippocrates, and running through many centuries, was that all foods contained the same nutritive principle: a theory to be expected so long as it was sufficient to account for various physiological phenomena by the action of special principles. Even Haller (1708-1777), although he gives much interesting information regarding the different kinds of foods used either by nations or individuals, can only say that all nutritious matters are of the nature of a jelly. His contemporary William Cullen (1712-1790) considered nutritious matters to be either "oily, saccharine, or what seems to be a combination of the two." There was no sound knowledge on this subject until Sir Humphry Davy (1778-1829), in his lectures on Agricultural Chemistry, classified the proximate principles of vegetables used in diet as gluten, farina, mucilage, oil, and sugar. Somewhat later, Magendie (1783-1855) made a much more elaborate classification into farinaceous, mucilaginous, sweet, acidulous, fatty, caseous,

* Within the last few months, these instruments have been used by Mr. Wm. Rose of King's College Hospital on two occasions, and by Mr. Walsham, of St. Bartholomew's Hospital.