TRAUMATIC OSSIFICATION OF TENDON.

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UNDER this term one would first associate the ossification of the adductors met with in horsemen, and which receives the special appellation of "rider's bone." Or, again, we may think of another common example occurring in the deltoid muscle, usually seen amongst soldiers, the "drill bone."

These two conditions are explained by the detachment of periosteal fibres consequent upon some strain; these fibres still continue to perform their functions, and so give rise to the bony formation found in the tendon of the muscle. Apart from the foregoing, bony conditions occurring in either the tendons or muscles are rarely met, so it may be of interest to record the history and histology of the following example.

In the first place, allow me to state that I wish to demonstrate not a periosteal bony formation, but an actual metamorphosis of tendon fibres into cancellous bone.

A. S., mate on a coal barge, six months before he came under my care met with an accident as the result of a

Fig. 1.—B, Bone; F T, fibrous tissue; M, muscle.

collision between his boat and one of the many narrow bridges crossing a canal. He was wedged between the barge and the bridge, being caught chiefly about the pelvis. Four days after this accident the patient was admitted to hospital, and it was discovered that besides contusions and abrasions of the anterior abdominal wall, he had, on x-ray examination, a fracture of the left ala of the pelvis. The fracture was triangular in outline, having a base of $\frac{3}{4}$ in. situated at the crest of the ilium.

The patient received the usual treatment, the pelvis was immobilized as far as possible, and he was kept for six weeks in bed. In eight weeks from the date of admission he was discharged with good union and free from pain. Subsequently for two months his condition progressed favourably, but after this, and indeed for the next two months, a most excruciating pain was felt in the upper and outer side of the left thigh, over the cutaneous distribution of the external cutaneous nerve, so that six months after the accident he was again admitted complaining of this pain, which chiefly made its appearance at night. On examination it was seen that the bone in the region of the fracture was greatly thickened, upwards of 3 in. or 4 in. in diameter, in fact, a most exuberant callus formation; whether due to an "ossific diathesis" or some clinical condition not easily explained it is difficult to say.

He stated that his father or mother, brothers or sisters, never had any broken bones, so one cannot determine whether any bony tendency runs in the family or no.

This pain in the upper and outer side of the thigh increased, so that operative measures were adopted. An extensive incision was made, and we found the external cutaneous nerve raised up on the summit of a huge lump of callus; the irritation so produced no doubt accounted for the pain.

This exuberant cancellous bone was fully dealt with, and the nerve relieved. Coming now to the item of striking interest in this case—that is, over the left inguinal region there was an isolated plate of bone imbedded in the tendon of the external oblique muscle and closely incorporated with its muscular fibres. This plate of bone had no connexion with the exuberant callus of the pelvis, but was completely isolated, and indeed was underlying the contused area on the skin following the accident.

Now I feel assured that this plate of bone was the result of the injury; in other words it was traumatic in origin. Again, it may be asked whence it cometh, from what structures did it arise, whether from tendon, muscle, or perhaps a new bony formation? The accompanying photomicrograph will speedily dispel all uncertainty, showing clearly that the bone is formed from the tendon fibres; at any rate they are replaced by bone of a cancellous type. Therefore it must be admitted that we have here an example of traumatic ossification of tendon fibres arising as a most unusual sequela complicating fractured pelvis.

NOTES ON AN INTERESTING CASE OF COLOUR BLINDNESS.

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A LINE fisherman, aged 27, came to the Eye Institution on February 21st to have his colour vision tested, as he wished to apply for a skipper's certificate. He had not previously entered for any eyesight examination, and had not had any practice with coloured wool tests. He had been at sea for a number of years, and was considered to have excellent form and colour vision. In any difficult situation the skipper always sent for him, as he could detect lights sooner than other fishermen.

Form Vision.

His form vision was normal, namely, § in each eye with no manifest hypermetropia.

Colour Vision.

TEST I.—The colour test was begun with K. Scott's asbestos chimney over an Argand burner. All the coloured glasses were repeatedly named correctly, clear or obscured by the ground glass disc, and with any size of aperture down to 2 mm., the test being applied at 3 metres distance.

The white or yellow light of the open aperture was correctly named. When, however, the ground glass disc was shown, the colour named was green, and this mistake was made repeatedly.

TEST II.—The second test used was Holmgren's wools.

1. *Pale Green*: The colours selected were pale blue, light and dark greys, also brown.

2. *Rose-pink*: Mostly pure pinks were chosen, but there was one confusion colour.

3. *Red*: Most of the reds were picked up, but also one or two dark browns.

The following additional Holmgren skeins were used as tests:

(a) *Medium Green*: This was matched correctly.

(b) *Pale Blue*: This was assumed to be green, and greys, browns and greens were selected.

(c) *Medium Blue*: Matched correctly.

(d) *Greyish-white*: With this was matched nearly all the pure greens, also greys, one or two blues, and a yellow-green.

TEST III.—The third test applied was Edridge-Green's wools:

1. *Orange*: Yellows only selected.

2. *Violet*: Blues, with one or two violets.

3. *Red*: Matched correctly.

4. *Blue-green*: Greys, greens, and yellows chosen.

The following additional skeins were used as tests:—

(a) *White*: Pinks only taken.

(b) *Light Grey*: Blues chosen.

TEST IV.—The fourth test was Edridge-Green's glasses with Thornton asbestos chimney, the aperture being 10 mm. at 3 metres distance:

(a) *Thin*—Neutral 1, named green.

(b) *Medium*—Neutral 2, named green.

(c) *Thick*—Neutral 3, named green.

(d) *Neutrals 1 and 2* (which give red), named green.

(e) *Ground glass*, named green.

(f) *Ribbed glass*, named green.

(g) *Red glasses*, all three shades named correctly.