LENGTHENING OF HAMSTRINGS BY OPERATION FOR CONTRACTURE AFTER BURN.

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D. H., aged 14 years, was admitted in February, 1899, for contraction of the left knee-joint, due to a burn at the age of 3 years. An extensive cicatricial web stretched from the middle of the leg to a point two-thirds of the way up the thigh, preventing extension beyond a right angle. The head of the tibia was displaced backwards and outwards, the condyles of the femur standing prominently forward. The patella was about half the size, and the anterior surface of the tibia about half the width of those of the other leg; the tibia and fibula, however, were not shortened. He walked with a crutch, the toes only of the left foot reaching the ground.

On March 10th the web was dissected away and fascial bands divided, allowing the knee, with a little force, to be extended to about 135 degrees. Further straightening was impossible without dividing the hamstrings. The biceps tendon was split for 3 inches near its insertion, divided and sutured as shown in Figs. 1 and 2, *b, b'*. The inner

Fig. 2 Fig. 1. Fig. 3.

hamstrings, which were too attenuated to be split with safety, were divided transversely at different levels 3 inches apart (Fig. 1, *T T'* and *M M'*). The proximal end of the semi-tendinosus, which had been cut at the lower level, was sutured to the distal end of the semi-membranosus, which had been cut at the higher level (Fig. 3, *T M'*). The other ends were shunted into their neighbours and sutured (Fig. 3, *M* and *T'*). Further extension was still impossible, owing to the shortening of the popliteal nerves and gracilis, but especially the former. It was decided to overcome these by gradual weight extension. The wound was then covered in as far as possible by undermining the surrounding skin and facing the edges towards each other. This had the effect of completely covering the sutured tendons. The limb was put up in a semi-flexed position on an angular splint.

The wound was dressed on March 18th, the stitches removed, primary union having taken place where the skin edges had been made to meet. Extension from the ankle was now adopted, a 5 lb. weight being applied.

On April 1st the knee was only about 15° from the straight line. The popliteal space presented a large granulating wound. Two days later flaps were raised on either side of the patella and laid across the popliteal space. A fortnight later a similar flap was lifted about 4 inches higher and the upper part of the popliteal space completely covered in. He was discharged on June 3rd with the knee straight, but wearing a Thomas's knee splint and pattern. He dispensed with these a fortnight later, and when seen again in September had complete range of flexion and extension.

On February 15th, 1900, when shown at the clinical meeting of the South Wales Branch of the British Medical Association he walked without a limp and without the slightest effort.

The interesting features of this case are the unexpected ease with which the marked displacement backwards of the head of the tibia was remedied, and the means adopted for lengthening the hamstrings. Splitting is the preferable method, but for the reason mentioned it was considered inadvisable in the case of the inner hamstrings. The mixed action of the muscles, resulting from the procedure adopted, was deemed of little importance in view of the displacement already existing at the joint. And although this displacement has been fully reduced, the power of flexion has not perceptibly suffered. That lengthening is preferable to simple division in contracture of the hamstrings is obvious. The result of the latter is uncertain, loss of power being probably the rule rather than the exception.

FIVE CASES OF COMPLETE FORWARD DISLOCATION OF THE KNEE-JOINT OCCURRING SIMULTANEOUSLY.

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THE following five cases of true dislocation of the knee-joint may be interesting to readers of the BRITISH MEDICAL JOURNAL, not alone on account of the rarity of the accident, but the fact that all the injuries occurred at the same time, which is, I believe, unique. I would also draw attention to the results, which are, I think, instructive, and which to a certain degree may be of assistance in the prognosis of similar cases.

The accident which caused the injuries occurred at the Shipley Collieries, Derbyshire, on April 26th, 1899. A cage in which eighteen men were being lowered into the pit, 200 yards deep, ran away—that is, the engineman lost control of his engine when the cage was about 60 yards from the bottom. Consequently the men were precipitated down the shaft at a terrific speed, which was stopped by the impact at the bottom. At the bottom of the shaft is a hole filled with water called the "sump hole." Across this hole are placed thick planks on which the cage rests when let down. The cage has also two platforms, an upper and lower. The men during transit stand in a rather stooping posture, with, I believe, the legs straight and head and shoulders bent. The dislocations occurred on both platforms. The cage on reaching the planks crashed through them and got jammed before going deeper.

In consequence of delay in reaching the injured men, the miners belonging to the ambulance fixed the injured limbs in temporary splints, and in due course they were conveyed to the Ilkeston Cottage Hospital two miles off. For the sake of clearness I shall describe each case. All the injured men are miners.

CASE I.—F. W., aged 30.
Condition of Joint.—On superficial examination of the right knee-joint, I was puzzled as to the exact nature of the injury; the deformity was so great. On closer examination the condyles of the femur were seen to be very prominent, projecting backwards, so that the skin behind the joint seemed ready to burst. The head of the tibia together with the fibula was shot up on to the anterior surface of the femur for quite 2 inches. The effusion, curious to say, was slight.

Reduction.—Under an anæsthetic the dislocation was easy of reduction in the following manner: Facing the patient's feet, traction on the foot was made by one operator, the other used the fingers of both hands on the condyles behind as a lever while the thumbs in front forced the head of the tibia into its place without difficulty.

After-treatment.—The immediate after-treatment consisted in placing the joint on a cushion, without splints, in the position of greatest comfort, and applying hot anodyne fomentations.

After the injury had been diagnosed in one case it was easy of recognition in the others.

CASE II.—J. T., aged 27. The deformity in this (left) limb was the same, only not so well marked, the limb being much more fleshy than in Case I. The dislocation was exactly similar, but in addition this man's skin was split across the back of the joint for the whole width, but the wound did not open into the cavity of the joint. There was a large amount of effusion, and also a considerable amount of ecchymosis from the hip to the ankle.

Reduction was easily effected in a way similar to that adopted in Case I, and the after-treatment was the same.

CASE III.—C. E., aged 33. This case was similar to Case II. The left knee was split across the back of the joint, and there was great effusion and ecchymosis.