Medical Memoranda

Bilateral Simultaneous Rupture of the Quadriceps Tendons

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Unilateral rupture of a quadriceps tendon is a common injury, and many cases have been reported. Bilateral rupture of the quadriceps tendons is an extremely rare condition; simultaneous rupture is even rarer.

McBurney (1887) reported the first successful repair of a quadriceps tendon. Fry (1928), Meyerding (1935), and James (1938) have reported single cases of bilateral quadriceps tendon rupture. The rupture did not occur simultaneously, however, several minutes to half an hour intervening between the right and left tendon tears. Steiner and Palmer (1949) reported the first case of simultaneous bilateral rupture of the quadriceps tendons. The second case was reported by Wetzler and Merkow (1950). The following case of simultaneous bilateral quadriceps tendon rupture with successful surgical repair represents the third such case to be reported.

CASE REPORT

A bus inspector aged 63 was admitted to hospital on 22 July 1965. He gave a history of tripping over a suitcase that afternoon, and on attempting to get up found he was unable to stand.

Examination showed an elderly obese man (weight 18 stone; 114.3 kg.) apparently in no great discomfort. His blood pressure was 200/130. He had no physical abnormality except in the lower limbs. He was unable to raise his legs straight from the bed, but

Gap palpable above each patella.

could flex up to 85 degrees. A gap was palpable above each patella (see Fig.). Both knees had effusions but were not painful. Laboratory tests showed no abnormality in the blood picture.

At operation later the same day, under general anaesthesia, bilateral repair of the quadriceps tendons was carried out. Straight vertical incisions were made. A large quantity of blood was evacuated from each knee, after which avulsed muscles were clearly visualized. The tear in each muscle had apparently taken place

just above the patella. In the left thigh there was a complete tear which extended to the medial and lateral expansions of the quadriceps group of muscles. In the right thigh the tear had occurred just above the patella but extended to some degree on each side, involving deep fibres; the superficial fibres were intact. No difficulty was experienced in approximating the torn muscles, and repair was effected with interrupted chromic catgut sutures. The deep fascia was approximated with plain catgut, the skin with wire. Immobilization was effected with plaster cylinders. Post-operatively the patient's progress was uneventful. A course of tetracycline was given for five days postoperatively. Leg-lifting was started by the physiotherapist, and after a week he was able to raise his legs with the plaster casts on. Four weeks later he was walking well, though still in plaster-of-Paris casts. The casts were removed six weeks after the operation. The wounds healed by first intention. He was discharged on 5 September, and physiotherapy was continued as an outpatient. When seen four weeks later he was walking easily. Though the quadriceps were contracting well, there was a lag in extension of 5 degrees on the left and 15 degrees on the right.

COMMENT

Rupture of the quadriceps tendon is usually seen after the age of 50, and is probably a result of weakening of the tendon from obesity and fibrotic changes of arteriosclerosis, lues, old injury, or other degenerative condition. The actual mechanism of rupture is almost identical in each case. The individual, who is usually obese, stumbles with the knee flexed; he attempts to save himself from falling by violent contraction of his quadriceps. A tear of the tendon takes place at the musculo-tendinous junction, and he falls to the ground. He then finds he is unable to extend his leg or stand. The characteristic defect palpable above the patella, the loss of extension, subsequent joint effusion, and the typical history usually make the diagnosis an easy one. The treatment of choice is surgical repair.

This condition has to be distinguished from the localized rupture of the attachment of the rectus femoris to the patella, which may degenerate for the same reasons. In such a case a depression filled with blood clot is palpable above the patella, a slight loss of full extension is noted, and there is no haemarthrosis. Equally rarely this condition may occur simultaneously in both legs.

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