

QUADRICEPS TENDON RUPTURE COMPLICATING PATELLAR TENDON RELEASE

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Injuries to the extensor mechanism of the knee require a profound rehabilitation.

The authors present a case in which postsurgical weakening was complicated by quadriceps tendon rupture.

Keywords : quadriceps tendon ; rupture ; release ; patellar tendon.

Mots-clés : tendon quadricipital ; rupture tendineuse ; libération ; tendon rotulien.

INTRODUCTION

A 17-year-old student presented with a seven year history of anterior right knee pains. Symptoms are elicited by athletic running, cycling, and squatting. Previous treatment regimes (rest, physiotherapy, ice) were unsuccessful.

Physical examination revealed a painful right apex patellae. Further examination was normal. X rays of the right knee were normal. Sonography of the patellar tendon showed patellar tendon enlargement with three intratendinous calcifications.

A surgical release was performed by a V-shaped excision of the central one third of the patellar tendon.

Histological report of the resected tissue : inflamed tissue with focal necrosis.

Postoperative regime consisted of 4 weeks cylinder cast immobilization ; after which physiotherapy was started with clinical improvement.

Painful locking of the right knee with joint effusion occurred 10 days after cast removal, due to a rotation of the knee on a fixed foot. Clinical examination revealed marked effusion ; tender

quadriceps tendon insertion and quadriceps tendon wasting. Straight leg raising is possible though painful. Muscle strength of the knee extensors is 4/5.

Radiology

1. X-ray : osteochondral fragment of lateral patellar facet.
2. Sonography : quadriceps tendon haematoma (fig. 1 — arrow).
3. CT-scan : edematous swelling over the quadriceps tendon insertion (fig. 2 — arrow).

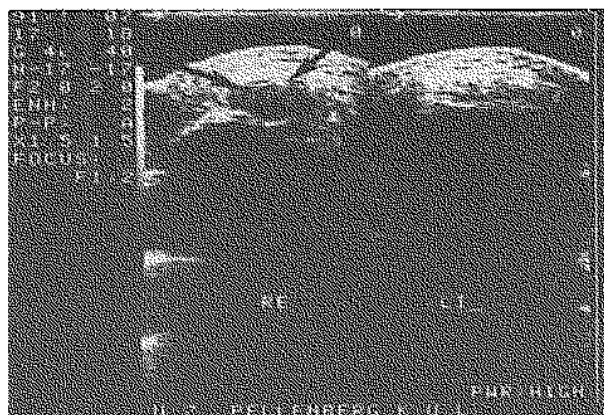


Fig. 1. — Sonography : shows intratendinous quadriceps haematoma R (arrow).

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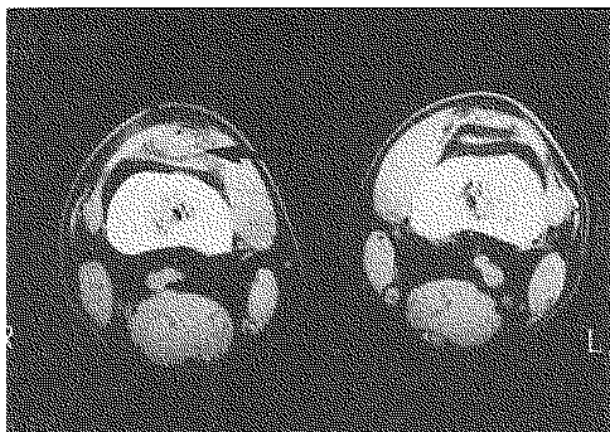


Fig. 2. — CT-scan : edematous swelling over the quadriceps tendon insertion (arrows).

Treatment for this partial quadriceps tendon rupture consisted of four weeks immobilisation in extension and touch weight bearing on two crutches. At six months of follow-up after surgery, there were no complaints during all daily activities. Patient will gradually restart sports activities after regaining normal quadriceps function.

DISCUSSION

This case showed the remarkable weakness of the extensor mechanism and its vulnerability to injury after a surgical procedure is performed to any part of it.

The extensor mechanism may be considered as one functional unit (quadriceps muscle and tendon with the patella acting as a large sesamoid bone). For practical and clinical purposes however the tendinous part is divided in a quadriceps tendon proximally and patellar tendon distally from the patella (1, 2).

Quadriceps force increases little as the leg extends from 50° to 15° but doubles to accomplish the final 15° of extension (5). This degree of extension leg is often observed after patellectomy.

After patella tendon repair Siwek C. *et al.* showed quadriceps atrophy although strength remained normal or, in older individuals, strong enough not to interfere with normal knee function (7). In this case however a minor rotatory movement caused rupture of the post-surgical weakened extensor mechanism (3).

Quadriceps atrophy, which leads to giving way, can cause further intra-articular damage (chondral — meniscal — cruciate ligament).

Protected quadriceps rehabilitation, after surgery to the extensor mechanism or postimmobilisation, should be carefully monitored and sports activities can only be recommenced after adequate muscle strength is regained (for instance quantified objectively by Cybex) (4, 6).

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SAMENVATTING

R. DRIESEN, J. VICTOR, G. FABRY. Ruptuur van quadricepspees na een patellapees release.

Letsels van het extensormechanisme van de knie vereisen adequate rehabilitatie.

De auteurs stellen een geval voor waarbij postoperatieve verzwakking verwickeld werd door quadricepspeesruptuur.

RÉSUMÉ

R. DRIESEN, J. VICTOR, G. FABRY. Rupture du tendon quadricipital après libération du tendon rotulien.

Les lésions de l'appareil extenseur du genou nécessitant une rééducation correcte.

Les auteurs présentent un cas de libération du tendon rotulien compliqué par une rupture du tendon quadricipital.