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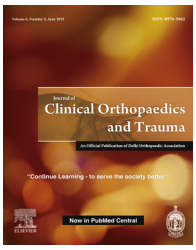

Case Report

Neglected bilateral rupture of the patellar tendon: A case report

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ARTICLE INFO

Article history:
Received 27 February 2015
Accepted 14 April 2015
Available online 2 July 2015

Keywords:
Patellar tendon
Chronic rupture
Haemodialysis

ABSTRACT

Simultaneous bilateral rupture of the patellar tendon (PT) is extremely rare and is generally associated to some chronic diseases. When the rupture becomes chronic, it is more difficult to repair that as it remained untreated.

The diagnosis, which is clinical, is often delayed, guided by standard radiography and confirmed by ultrasound or MRI.

The management of a bilateral neglected, chronic patellar tendon rupture must address some serious difficulties: the proximally retracted patella, the reconstruction of the patellar tendon, finally, the temporary protection of this repair.

We report a case of neglected bilateral rupture of the patellar tendon in a chronic hemodialysis patient, treated with a plastic surgery of the ipsilateral quadriceps tendon.

1. Introduction

Bilateral rupture of the patellar tendon (PT) is an extremely rare affection; these ruptures appear especially in patients with systemic disease or predisposing conditions. Most patients who sustain a spontaneous patellar tendon rupture have risk factors for tendinopathy including rheumatoid arthritis, chronic renal failure systemic, lupus erythematosus (SLE), rheumatoid arthritis, hyperparathyroidism, hereditary disorders of the connective tissue (like Ehlers-Danlos syndrome) or long term medication, such as corticosteroids or fluoroquinolones.[1,2] We report a case of a neglected bilateral rupture of the patellar tendon in a chronic hemodialysis patient.

2. Case report

It is about 40-years-old patient who has been undergoing haemodialysis for 12 years for an idiopathic chronic renal failure, the patient reports having dropped its height with a

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http://dx.doi.org/10.1016/j.jcot.2015.04.003
0976-5662/

Fig. 1 – Clinical aspect of bilateral patellar tendon rupture.

reception on both knees flexed, following a sensation of instability of the right knee without notion of trauma or stumbling. He was presented to the emergency department in another hospital with knee pain and total functional impairment of both knees; the diagnosis of mild trauma was retained. Remaining bedridden, he consulted, three months later, in our department. The clinical examination revealed swollen knees with a sub-patellar defect (Fig. 1) and a lack of active bilateral knee extension. X-rays on both knees showed a

Fig. 2 – Lateral X-ray of the knee showing a patella alta.

patella alta with a Caton-Deschamps Index >1.2 (Fig. 2). The diagnosis of a neglected bilateral rupture of the patellar tendon was retained. In our case we did not find that it is necessary to do other complementary examinations such as ultrasound or MRI given their cost and therapeutic delay they cause. However Blood chemistry results were as follows: phosphate was 46 mg/l, serum calcium corrected by albumin was 92 mg/L, parathyroid hormone (PTH) level was 620 pg/mL and blood pH was 7.3.

Surgical treatment was identical for both knees using an anterior approach. The rupture of the PT was located in the middle third at the right (Fig. 3a), and in the proximal area on the left (Fig. 3b). The ends of the ruptured patellar tendons were frayed, and tendons seemed to be fragile. The reconstruction of the PT was performed by using a graft, extracted from the middle third of the ipsilateral quadriceps tendon (QT), with 10 cm of length and 15 mm of width, pedicled on the patella and returned to 180° (Fig. 4). The graft is passed through a tibial tunnel with an inlet orifice at the insertion of the native PT and an outlet orifice at 15 mm below. A wire strapping making a frame between the patella and the tibial tuberosity can adjust the height of the patella under fluoroscopic control with obtaining a Caton-Deschamps Index around 1. Proximally, the graft banks are sutured to the adjacent soft tissues by a non-absorbable wire, acting as brakes. The tight graft is sutured to itself. It is attached to the patellar ailerons and the stumps of native tendon (Fig. 5).

Removable splints have been prescribed for 6 weeks; the passive rehabilitation was undertaken since second day in a range of mobility of 060 by arthromotor. One month after, the patient started doing partial weight-bearing with crutches and at the third month, he underwent an active rehabilitation based mainly on stretching quadriceps, the gradual increase of its resistance in eccentric and the change in execution speed movement. At the sixth month, the strapping wire was removed and after 7 months, the patient regained normal knee mobility (0°/120°) and resumed daily life activities.

3. Discussion

Traumatic ruptures of the PT are the result of significant pressure on the extensor mechanism in young athletes.[3] However, its bilateral rupture is extremely uncommon[2] and occurs after low-energy trauma or without trauma.

The extensor mechanism consists of the quadriceps tendon, the patella, the patellar tendon, and the insertion of the patella on the tibial tubercle. The muscle moment arm of the extensor mechanism is increased by the patella. Patellar tendon rupture results from contraction of the quadriceps in a flexed knee. Opposite contractile forces create a superior moment arm across the quadriceps and an inferior moment arm pointing towards the tibial tubercle, strong enough to tear a normal patellar tendon if the force is17.5 times the body weight.[2]

Usually the spontaneous bilateral patellar tendon rupture has been associated with systemic diseases such as SLE, rheumatoid arthritis, chronic renal failure and prolonged corticosteroid fluoroquinolones treatments.[3] In addition to ageing, these conditions lead to the degeneration of collagen