Bilateral patellar tendon rupture in a young sport

Issam Elouakili, Redouane Ouakrim, Younes Ouchrif, Yassin Sadrati, Redouane Hani, Mly Omar Lamrani, Mohammed Kharmaz, Farid Ismael, Abdo Lahlou, Mohammed Ouadaghiri, Ahmed El Bardouni, Mustapha Mahfoud, Mohammed Saleh Berrada and Moradh El Yaacoubi
Department of orthopedic surgery CHU de Rabat Morocco.

ARTICLE INFO
Article history:
Received: 25 July 2014;
Received in revised form: 21 August 2014;
Accepted: 4 September 2014;

Keywords
Patellar tendon, Surgery,
Tendon tear.

ABSTRACT
Simultaneous rupture of the two patellar tendons are exceptional in sports young people without predisposing systemic disease. Diagnosis is essentially clinical help with radiography. Surgical treatment gives good result. We report a case of a 35 years old young sport with a subcutaneous bilateral rupture of the patellar tendon.

© 2014 Elixir All rights reserved

Introduction
Bilateral patellar tendon rupture is exceptional in sports. It is often associated with rheumatic diseases, kidney disease or taking steroids long term use.

We report the case of a bilateral rupture of the patellar tendon in a young athlete without pathologic antecedents.

Observation:
This is a young athlete 35 years, without significant medical history and no history of drug intake (corticosteroid, quinolone), which during a workout session on the leg press machine suddenly felt a sharp pain at the end of the extension of both knees. Transferred to emergencies, clinical examination found edema and bilateral bruises with a total deficit of active extension in both knees. Palpation objectified a hiatus in patella on both sides. A radiograph (fig 1, 2, 3) practiced in emergency showed bilateral patellar ascension.

The patient was operated urgently, bilateral patellar tendon repair with two simple sutures was performed, and protected by a strapping steel wire 30 degrees of flexion. Radiographic control (fig 4, 5, 6) showed good positioning of two balls.

Figure 1 shows a profile view of the right patella Alta.

Figure 2: showing a profile view of the left patella Alta.

Figure 3: Front view of two knees showing, as the rise of two ball joints.
Post operatively both knees were immobilized in a knee, passive mobilization up to 60° was started on day 1. Steel was removed after 6 weeks, allowing an expansion of the sector up to 120° flexion. The resumption of sport was allowed gradually from the 7th month.

Discussion:
Bilateral patellar tendon rupture is very rare. Fifty cases have been reported in the literature[1] They are often associated with systemic diseases or prolonged use of corticosteroids[2,3]. Very few cases reported in patients without disease history or drug consumption.

Rupture of the patellar tendon is the 3rd leading cause of rupture of the extensor tendon ruptures after quadriceps and fractures ball[4]. The mechanism of their occurrence is a violent eccentric contraction of the quadriceps on a flexed knee (jump landing, raising crouch ...) [5], which is exactly the mechanism described by our patient.

The clinical signs are summarized in pain, swelling and a low degree of extension [6,7]. The symmetry of the clinical signs in this case may obscure the diagnosis. Siwek and Rao [8] found that 28% of bilateral patellar tendon ruptures were not diagnosed during the initial exam.

The radiological diagnosis of bilateral disease based on the presence of a patella Alta on lateral radiographs in slight flexion where the Insall-Salvati ratio (length of the patella / patellar tendon length) can be calculated [9]. Less than 0.8 ratio is equivalent to a patella Alta. MRI or ultra sound can assist diagnosis in difficult cases or seen late.

The pathophysiological basis of the patellar rupture are divided into 3 groups in the literature. The first group includes patients with autoimmune or systemic diseases which have a very high risk of bilateral rupture of the patellar tendon. Among these diseases are spread cites lupus erythematosus, inflammatory rheumatism, chronic renal failure, hyperparathyroidism and diabetes mellitus. These diseases cause inflammatory reactions that alter the ultra tendon structure [10]. The second group is represented by those patients intravenous or oral corticosteroids. These drugs have the ability to alter the synthesis of collagen and blood flow to the tendon which causes embrittlement[2,4,11]. The third group includes patients who have no pathological history. Davidson [12] thought that in this category of patients the cause of the failure is due to repetitive strain injuries.

The emergency surgical treatment is mandatory [13], because the orthopedic treatment is ineffective. [5] It is based on simple sutures tendon or transosseous sutures in case of removal. Sutures must be protected by a consistently framing preferably using a non absorbable yarn rather than the wire[14]. And patellar height adjustment must be made on intraoperative photographs to 30° of flexion as recommended Ait Si Selmi and Neyret [15].

The current trend in post-operative and minimizing downtime because it causes joint stiffness and muscle atrophy quadicipitale [16]. There is no consensus post operative rehabilitation but most authors agree on the objective of having 90 degrees of flexion at day 45.

The results of surgical treatment of fresh fractures, however with a satisfactory return to sport can beat 6 months [14].

Conclusion:
Bilateral rupture of the patellar tendon is very rare and even more rare in patients without pathological past. The clinical diagnosis is not always easy and surgical treatment usually leads to very good results if undertaken urgently.

Conflict of Interest
The authors declare no conflict of interest.

Contributions of authors
The lead author is Dr. Issam ELOUAKILI.
Reference: