

## Bilateral Spontaneous Rupture of the Patellar Tendon: A Rare Case

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### Abstract

### Case Report

Ruptures of the patellar tendon are rare lesions. They are essentially the occasion of a trauma in an active subject while the forms atraumatic or low energy trauma are much more rare and occur on lesions preexisting. We report a case of bilateral and simultaneous rupture of the patellar tendon in one 41-year-old patient with chronic hemodialysis. The repair Surgery had sutured both tendons with metal strapping protection. Rehabilitation of both knees with strengthening of the quadriceps had been started thereafter. The evolution was favorable with subnormal mobilities of the knees, a walk without technical help but with a slight limp, and a climb and descent possible stairs, 3 months back.

**Keywords:** Rupture, bilateral, patellar tendon.

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## INTRODUCTION

Rupture of the patellar tendon are very disabling lesions because they interrupt the chain of transmission of Knee extensor system, essential for locomotion in humans. The rupture of the patellar tendon is the third cause of rupture of the device extensor after fracture of the patella and rupture of the quadriceps tendon. Some special situations are associated with a high risk of rupture tendinous like taking corticosteroids in the long term, systemic diseases and metabolic disorders. We report a case of bilateral rupture Patellar tendon in a chronic hemodialysis patient.

## CASE REPORT

41-year-old patient with a history of hypertension under calcium antagonist at 5 mg / day, followed for chronic renal failure for eight years. He received hemodialysis three times a week. The patient also had muscle atrophy of the right lower limb as a result of a post polio syndrome. Victim of a common fall with reception on both knees causing pain with functional impotence total of the two lower limbs. The initial examination objectified: the presence of swelling of both knees with bruising. The ascent of the two kneecaps with respect to their normal position when both knees are flexed. The perception of painful sub-

patellar depression at palpation (Figure-1). The presence of a complete deficit of extension of both knees. Standard X-rays of face and profile had shown an ascent both kneecaps. The diagnosis of bilateral patellar tendon rupture was therefore made before clinical signs and results of standard imaging (Figure-2). The surgical repair of the two patella tendons was consequently indicated. The surgical procedure consisted of suturing the two tendons and realization of a protection by a metal lacing (Figure-3). We performed a median anterior vertical skin incision extending from the patella to the anterior tibial tuberosity. After vertical incision of the tendinous sheath on its uninjured portion, the tendon was released along its length and all its faces. The ends of the fractured tendon were approximated and sutured by lacing using the Judet technique. To protect the suture, a patellar tendon framing with a large nonabsorbable thread passing through the patella and anterior tibial tuberosity was put in place (Figure 4 & 5). A profile control X-ray at 30 degrees flexion as recommended by Ait Si Selmi was performed to adjust the patella height according to Caton and Descamps index. In the end, the closure was carried out on a suction drain. This process was performed on both knees. After the intervention, the postoperative course was simple. Immobilization of both knees was advocated for 45 days, followed by rehabilitation with quadriceps strengthening.



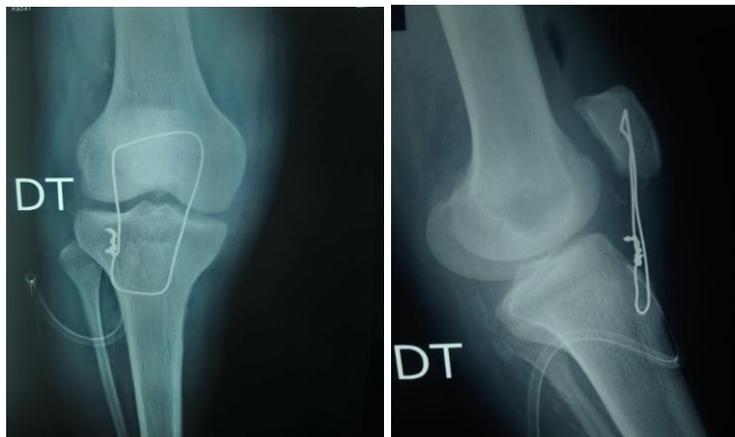
**Fig-1: Clinical aspect of bilateral patellar tendon rupture**



**Fig-2: Initial X-ray of both knee face and profile**



**Fig-3: Intraoperative image of patellar tendon injury**



**Fig-4: X-ray control of the right knee after scoring with steel wire**

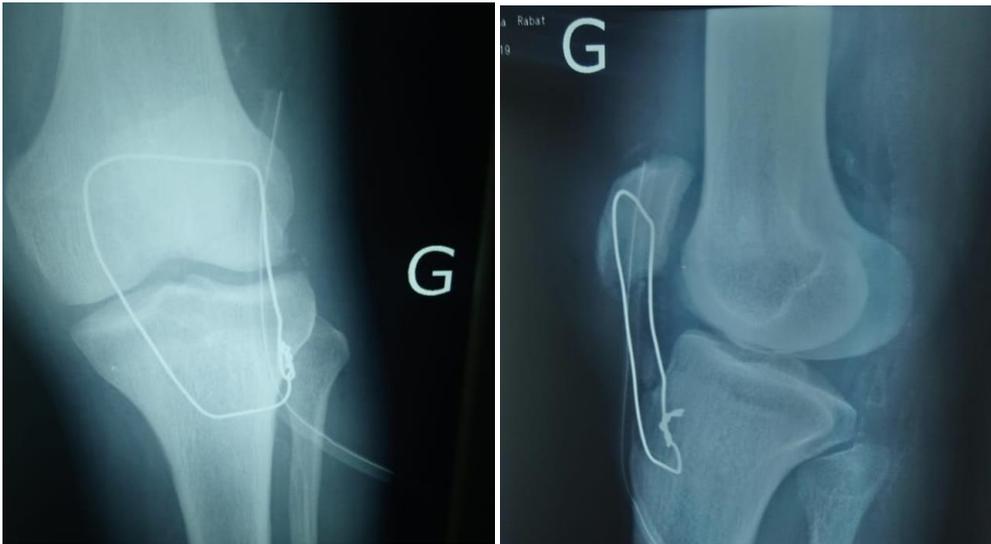


Fig-5: X-ray control of the left knee after scoring with steel wire

## DISCUSSION

Several cases of spontaneous rupture of the patellar tendon have been described in patients with chronic renal failure at the hemodialysis stage. The occurrence of spontaneous rupture in patients with renal insufficiency is linked to the long duration of hemodialysis and secondary hyperparathyroidism [1]. Indeed, the process of hemodialysis can cause complications such as beta 2 microglobulin amyloidosis. As a result, it is deposited at the joints, bones and tendinous structures [2]. This deposit results in a reduction of the elasticity of the tendon and predisposes to breaking due to minimal stress [3]. In addition, patients with chronic renal failure may develop renal osteodystrophy and secondary hyperparathyroidism leading to general osteoporosis with bone resorption and weakening of the

Tendon-bone junction which promotes tendon rupture [4]. Also noteworthy is the degeneration caused by chronic metabolic acidosis associated with chronic end stage renal failure, leading to elastin deposition in the tendons.

Taylor divided patellar tendon fractures according to their pathophysiological causes into three groups: the first consists of ruptures due to autoimmune or systemic disorders that cause changes in the structure of the patellar tendon. The second group consists of breaks due to oral or injectable corticosteroids [5]. The third group is made of ruptures caused by repeated microtrauma. The case presented in this article is part of the first group.

The rarity of bilateral fractures and the symmetry of the signs found on the examination may mask the diagnosis and reduce the possibility of comparison with the other member [6].

The clinical picture includes pain, swelling and a low degree of knee extension. The distinction between patellar and quadriceps tendon rupture should be by palpation of tendon depression and patella position after quadriceps contraction. In patellar tendon ruptures, the patella is displaced to the top or commonly called patella alta on the radiograph in profile [7]. The position of the patella must be evaluated by the measurement of the Insall-Salvati ratio, if it is less than eight tenths we speak of patella alta. Other orthopedic schools use the Caton and Deschamps Index. The diagnosis must be confirmed by ultrasound or MRI. The treatment is exclusively surgical, based on sutures if the rupture is in the body or transosseous sutures in case the whole must be protected by a strapping allowing a sector of bending up to 90 degrees. Rehabilitation protocols must include early passive rehabilitation, followed by active re-education. Whose mobilization sector will expand after strapping removal.

## CONCLUSION

Ruptures of the patellar tendon remain very rare lesions. Several risk factors have been implicated in the occurrence of these ruptures, despite the absence of studies that can confirm the causal link. The diagnosis of patellar tendon rupture is primarily clinical. And their treatment is exclusively surgical.

The large number of surgical techniques described in the literature testifies to the lack of codification of this surgery.

In addition, the diagnosis and treatment of bilateral patellar tendon fractures must be early, in order to avoid the stage of neglected ruptures which are more difficult to treat with more random results.

**Conflicts of Interest:** The authors do not declare any conflict of interest.

**Contributions of the Authors:** All authors have read and approved the final version of the manuscript.

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