

## Case Report

# Neglected Rupture of the Patellar Tendon: The Role of Imaging in Diagnosis: A Case Report

Meriem Boui<sup>1\*</sup>, Anouar Benhima<sup>2</sup>, Yousra Zouine<sup>2</sup>, Zakaria Zouaki<sup>1</sup>, Nabil Hammoune<sup>1</sup>, Badr Slioui<sup>1</sup>, Mehdi Atmane<sup>1</sup>, Abdelilah Mouhsine<sup>1</sup>

<sup>1</sup>Department of Radiology, Avicenne Military Hospital, Marrakech, Morocco

<sup>2</sup>Radiology Department of the Mohammed VI University Hospital Center in Marrakech, Morocco

### Article History

Received: 08.05.2023

Accepted: 14.06.2023

Published: 29.03.2024

### Journal homepage:

<https://www.easpublisher.com>

### Quick Response Code



**Abstract:** Neglected ruptures of the patellar tendon are rare and severe injuries. Their diagnosis is strongly suspected based on clinical examination, but confirmation is provided through imaging, particularly magnetic resonance imaging (MRI), which is equally important for surgical planning. Here, we report a case of a patient with a neglected rupture of the patellar tendon to highlight the role of MRI in diagnosis. Surgical repair was performed using the semitendinosus tendon and wire framing.

**Key words:** Patellar tendon, neglected rupture, diagnosis, surgical planning, MRI.

**Copyright © 2024 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution **4.0 International License (CC BY-NC 4.0)** which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## INTRODUCTION

Neglected ruptures of the patellar tendon are rare and pose therapeutic challenges. Diagnosis, strongly suspected based on clinical examination, is confirmed through imaging, especially magnetic resonance imaging (MRI) [1]. This imaging not only enables diagnosis but also assists in surgical planning [1]. Various techniques are used for tendon reconstruction. Here, we present a case of a patient in whom MRI revealed a patellar tendon rupture.

## CASE REPORT

This is a 62-year-old patient with no notable medical history, who is physically active (military profession), admitted to the trauma department for total functional impairment of the left lower limb following a fall that occurred two months prior. Clinical examination revealed a complete deficit in active knee extension with inability to bear weight on the left lower limb, patella alta, and a subpatellar gap (Figure 1), along with quadriceps muscle atrophy.



**Figure 1: Clinical examination revealed a subpatellar gap**

A lateral standard X-ray of the left knee showed a high patella with a Caton-Deschamps index of 1.8. Ultrasonography indicated a discontinuity in the patellar tendon. MRI confirmed the tendon rupture (Figure 2) and also revealed joint effusion.

Therapeutically, a vertically centered midline approach was used, targeting the patellar tendon. Surgical exploration revealed a thin and pathological patellar tendon (Figure 3). Surgical repair was performed using the semitendinosus tendon and wire framing.



**Figure 2: Knee MRI revealed a patellar tendon rupture**



**Figure 3: Surgical exploration revealed a thin patellar tendon**

## DISCUSSION

Ruptures of the patellar tendon are rare and serious [1,2,9]. Experimentally, the rupture of a normal patellar tendon requires a force equivalent to 17 times the body weight [3,4]. This condition makes it likely that factors weakening the patellar tendon are responsible for the rupture. According to Enad [5], the mechanism of injury in patellar tendon rupture is a violent eccentric contraction of the quadriceps occurring on a flexed knee where the force ratio between the quadriceps tendon and the patellar tendon is reversed.

The diagnosis of patellar tendon rupture is primarily clinical and is relatively straightforward in the acute phase. However, delayed diagnosis is common [6], which, according to Enad [5], can be facilitated by continuity, in some cases, of the patellar wings allowing for active extension but only against gravity. In neglected ruptures, imaging guided by clinical

suspicion remains important for confirming the diagnosis and determining the surgical technique [1,2], particularly magnetic resonance imaging (MRI), which specifies the location of the rupture (mid-substance, proximal or distal avulsion), its complete nature with tendon retraction, or partial with the persistence of certain tendon fibers, not to mention quadriceps muscle atrophy [1,2].

This information is crucial for selecting the appropriate technique, whether it be end-to-end suturing or plasty with tendon transfers [1,5]. Other radiological assessments, such as a lateral view X-ray showing patella alta, raise a high suspicion, while ultrasound retains good sensitivity in total ruptures but lacks precision in partial ruptures [1,2]. Several technical modalities of reconstruction have been described without being able to prove the superiority of one over another [6]. The most well-known methods [7,8] involve grafting the semitendinosus tendon alone or in combination with the gracilis tendon, or even

reinforcement with the fascia lata. Protection of the reconstruction is necessary, using either a metal frame, wire cerclage, or PDS tape.

## CONCLUSION

Neglected ruptures of the patellar tendon are rare injuries and always pose a therapeutic challenge. Imaging plays an important role in diagnosis and therapeutic planning, including the selection of the appropriate surgical technique tailored to the patient, which is the key to achieving a good functional outcome.

## REFERENCES

1. Dejour, H., Denjean, S., & Neyret, P. (1992). Traitement des ruptures anciennes ou itératives du ligament patellaire par autogreffe controlatérale. *Rev Chir Orthop Reparatrice Appar Mot*, 78, 58–62.
2. Coudane, H., & Huttin, P. (2010). Ruptures de l'appareil extenseur du genou. *Encycl Med Chir*, 4-081-A-10.
3. Boggione, C., & Marmorat, J.L. (2004). Traitement des ruptures totales du tendon rotulien. *J Traumatol Sport*, 21, 204–17.
4. Middleton, P., Puig, P.L., Trouve, P., & Savalli, L. (2010). Rééducation des entorses du genou. *Encycl Med Chir*, 26-240-C-10.
5. Kelly, D.W., Carter, V.S., Jobe, F.W., & Kerlan, R.K. (1984). Patellar and quadriceps tendon ruptures–jumper's knee. *Am J Sports Med*, 12, 375–80.
6. Kellersmann, R., Blattert, T.R., & Arnulf, W. (2005). Bilateral patellar tendon rupture without predisposing systemic disease or steroid use: a case report and review of the literature. *Arch Orthop Trauma Surg*, 125, 127–33.
7. Chagar, B., Boussouga, M., Lazrak, K.H., & Taobane, H. (2003). Rupture bilatérale spontanée négligée des tendons rotuliens à propos d'un cas. *Rev Chir Orthop Reparatrice Appar Mot*, 89, 733–7.
8. Buquet, P., Piétu, G., Huguet, D., & Capelli, M. (1999). Rupture du tendon rotulien à propos de 17 cas. *Ann Orthop Ouest*, 31, 45–50.
9. Bennani, A., Loudiyi, D., Zizah, S., Amar, M.F., Marzouki, A., & Boutayeb, F. (2009). Rupture post traumatique du tendon patellaire (à propos d'un cas et une revue de la littérature). *J Traumatol Sport I*, 26(4), 243–6.

---

**Cite This Article:** Meriem Boui, Anouar Benhima, Yousra Zouine, Zakaria Zouaki, Nabil Hammoune, Badr Slioui, Mehdi Atmane, Abdelilah Mouhsine (2024). Neglected Rupture of the Patellar Tendon: The Role of Imaging in Diagnosis: A Case Report. *EAS J Radiol Imaging Technol*, 6(2), 16-18.

---