DOI: https://doi.org/10.30795/jfootankle.2025.v19.1862

Case Report

Isolated traumatic dislocation of the posterior tibialis tendon: a case report

Gustavo Damazio Heluy[1], Alesson Filipi Bernini[2], Lincoln Rodrigues Fernandes Júnior[2], Luciana Alves Silveira Monteiro[3], Pedro Sebastião de Oliveira Lazaroni[1]

1. Maria Amélia Lins Hospital, Belo Horizonte, MG, Brazil.
2. Federal University of Uberlandia, Uberlandia, MG, Brazil.
3. Clinical Hospital of the Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.

Abstract

This case report describes a 65-year-old female patient with no previous comorbidities who suffered a traumatic dislocation of the posterior tibialis tendon during domestic activities. The initial diagnostic suspicion was a sprain; however, after suggestive physical examination and subsequent magnetic resonance imaging, dislocation of the posterior tibialis tendon was confirmed. The patient was submitted to tendon reduction, repair, and retinaculum reinforcement using tibial periosteal flaps. No complications occurred postoperatively, and after six months, the patient returned to her usual activities.

Level of Evidence IV, Therapeutic Study; Case Report.

Keywords: Ankle Injuries; Tendons; Ankle Joint.

Introduction

Traumatic dislocation of the posterior tibialis tendon is a rare and often underdiagnosed condition due to clinical similarity to ankle sprains. Since it was described by Martius in 1874[(1)], fewer than 50 cases have been reported in the literature worldwide[(2)]. Dislocation of this tendon usually results from traumas that combine extension and internal rotation of the ankle. Clinically, the patient presents with pain and edema in the medial region of the ankle—signs often mistaken with ligament injuries—making magnetic resonance imaging (MRI) the diagnostic tool of choice for a definitive diagnosis[(3,4)]. The literature, limited due to the extremely rare condition, recommends the surgical approach in most cases[(3,5,6)].

Case report

Clinical history

A 65-year-old female patient, retired, with no history of previous diseases, smoking or alcoholism, with regular practice of physical activities, such as dance and weight training. She had no history of trauma or injury to the affected limb.

During household activities, she tried to balance in a chair but slipped and rested his right foot on the ground, feeling a "snap" followed by intense pain in her right ankle. Due to the pain and instability in her limb, she could not keep walking.

Tests and diagnosis

In the emergency room, the initial radiograph of the ankle revealed no fractures or bone injuries. However, the physical examination demonstrated localized pain on palpation and during the excursion of the posterior tibialis tendon with passive ankle flexion-extension. Initially, the patient was treated with withdrawal of support and immobilization. An MRI was immediately requested, confirming the traumatic dislocation of the posterior tibialis tendon, which was displaced from its retromalleolar anatomical groove (Figure 1).

Study performed at the Clinical Hospital of the Federal University of Minas Gerais, Belo Horizonte, MG, Brazil.

Correspondence: Pedro Sebastião de Oliveira Lazaroni. Rua Aimorés 2125, Lourdes, Belo Horizonte, MG, 30140-072, Brazil. **Email:** pedro.lazaroni@gmail.com.
Conflicts of interest: None. **Source of funding:** None. **Date received:** November 23, 2024. **Date accepted:** March 23, 2025.

How to cite this article: Heluy GD, Bernini AF, Fernandes Júnior LR, Monteiro LAS, Lazaroni PSO. Isolated traumatic dislocation of the posterior tibial tendon: a case report. J Foot Ankle. 2025;19(1):e1862.

Given the diagnosis of traumatic dislocation, surgical treatment was chosen, considering the failure of conservative approaches in similar cases described in the literature. The patient underwent spinal anesthesia and was positioned in horizontal dorsal decubitus, with a pneumatic tourniquet at the thigh root to control bleeding.

The surgical access was performed with an incision of approximately 8 cm posteromedially, following the anatomical path of the posterior tibialis tendon (Figure 2).

A complete rupture of the posterior tibialis tendon retinaculum was observed during the procedure. The tendon was completely dislocated but showed no signs of rupture (Figure 3A-B) or changes in its sheath or bone avulsions.

Intraoperative assessment identified a shallow retromalleolar groove, prompting the decision to proceed with its deepening. For the sulcoplasty, a longitudinal osteotomy was performed at the edge of the groove, followed by curettage and removal of cancellous bone to deepen the bone-tendon contact surface without compromising its integrity.

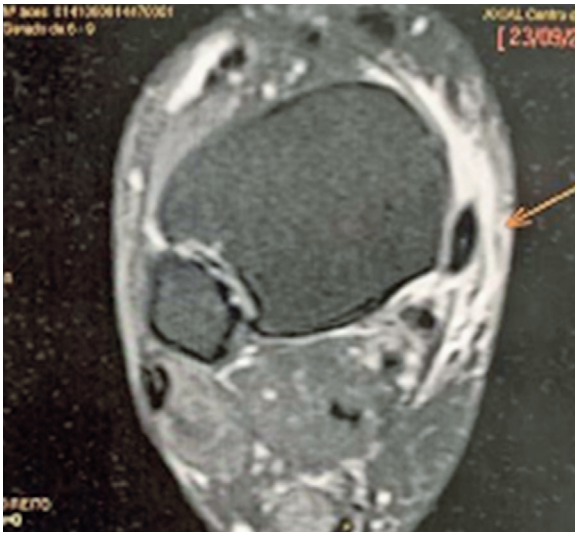

Figure 1. Ankle magnetic resonance imaging showing the posterior tibialis tendon located anteriorly to the retromalleolar groove.

Figure 2. The continuous line shows the planning of the surgical incision, while the dashed line shows the anomalous position of the dislocated posterior tibialis tendon.

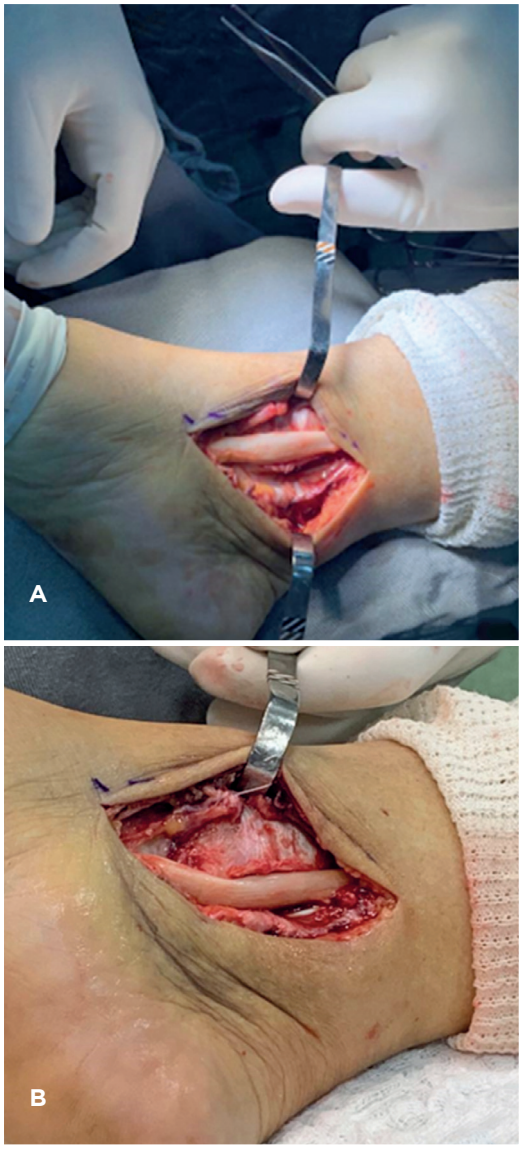

Figure 3. (A) Dislocated posterior tibialis tendon presenting anterior to the retromalleolar groove and under the medial malleolus. (B) Tendon in usual positioning after reduction.

After the tendon reduction in its groove, the retinaculum was repaired, providing good stabilization, as verified in the evaluation of the passive ankle movements. In addition, a retinaculum reinforcement was performed with tibial periosteal flaps to provide greater stability to the tendon (Figure 4).

Postoperative and outcome

The patient was periodically followed postoperatively. For the first six weeks, she remained immobilized with her ankle in a neutral position. From the eighth week, she started physiotherapy with active ankle flexion and extension exercises and progressive muscle strengthening.

She did not present significant pain or functional limitations in the three-month evaluation. At six months postoperatively, she reported a complete return to her usual activities, including physical exercise, with no signs of recurrence.

Discussion

Traumatic dislocation of the posterior tibialis tendon is a rare but potentially debilitating injury often confused with ankle sprains[7-9]. Early diagnosis is essential to avoid complications such as chronic ankle instability, progressive tendinopathy, formation of pseudoaneurysms in the medial region, progressive collapsing deformity, and persistent pain. These conditions can significantly compromise limb functionality and patient quality of life, reinforcing the importance of an accurate and timely diagnostic approach[7,8,10].

The posterior tibialis tendon originates from the posterior surface of the tibia and fibula, in addition to the interosseous membrane, and has multiple insertions, including the plantar face of the navicular, cuboid, cuneiform, and metatarsals[7]. It is contained in the flexors retinaculum, a structure located in the medial region of the ankle, along with the flexor digitorum longus tendon, the posterior tibial artery, the posterior tibial veins, the tibial nerve, and the flexor hallux longus tendon[7,10].

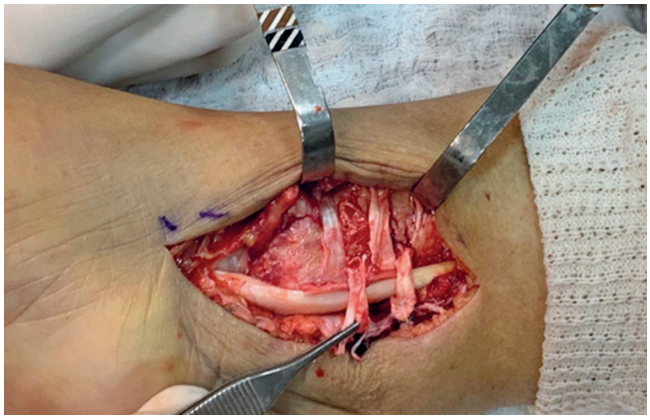

Figure 4. Tibial periosteal flaps were made and detached and then folded later to reinforce the retinaculum.

The main functions of the posterior tibialis tendon are plantar flexion of the ankle and inversion of the foot while also maintaining the medial longitudinal arch[9,11]. It has a sheath composed of two layers: one inner (synovial) and one outer (fibrous)[8,10]. The synovial layer is responsible for the production and secretion of synovial fluid, facilitating the sliding of the tendon and reducing its friction with adjacent structures. On the other hand, the fibrous layer is more resistant, provides mechanical protection, and maintains its positioning, especially during activities of high biomechanical demand[7,10].

Imaging tests are key in diagnosis and treatment planning[8]. Although MRI is widely recognized as the gold standard for evaluating soft tissues and confirming dislocation, dynamic ultrasound has become a complementary tool[7,8]. This method is particularly useful in assessing dynamic instabilities of the posterior tibialis tendon, allowing real-time observation of tendon movement and facilitating diagnosis in an emergency environment[10]. In addition, ultrasound is more affordable and cost-effective, making it a viable alternative in settings where MRI is not available[8,9].

Conservative treatment has high failure rates, and, therefore, surgery should be the treatment option, except in patients with low functional demand or who are unable to undergo the perioperative process[6].

Among the procedures described are the repair or reconstruction of the flexors retinaculum, the deepening of the groove of the posterior tibialis tendon, and the use of bone blocks[4,7,12].

In this study, the authors chose retinaculum reinforcement using tibial periosteal flaps. No previous descriptions were found in the literature about this technique modification. The objective of this change was to increase the strength of the construction and, consequently, provide greater stability for the posterior tibialis tendon in its groove.

No postoperative protocols are tested in the literature for treating posterior tibialis tendon dislocation[11]. In the case described, it was decided to immobilize in a neutral position for six weeks to protect the repaired retinaculum and avoid early stress during the initial healing phase[10,12].

Traumatic dislocation of the posterior tibialis tendon is rare and often underdiagnosed. Early diagnosis is essential to avoid complications such as chronic instability and tendinopathy. Magnetic resonance imaging is the gold standard for confirmation, but dynamic ultrasound offers a viable alternative in assessing instabilities.

Surgery should be the treatment option, evaluating the need to repair or retinaculum reconstruction, sulcoplasty, or bone blocks in each case. In this report, the authors described the treatment with sulcoplasty and retinacular reinforcement with tibial peristeal flaps, a technique unprecedented in the literature on the subject.

This case highlights the importance of establishing an early diagnosis to achieve a good functional recovery.

Authors' contributions: Each author contributed individually and significantly to the development of this article: GDH *(https://orcid.org/0000-0002-1830-450X) Conceived and planned the activities that led to the study, interpreted the results of the study, performed the surgeries, data collection, bibliographic review, survey of the medical records, clinical examination, approved the final version; AFB *(https://orcid.org/0000-0001-9751-9738) Interpreted the results of the study, participated in the review process, performed the surgeries, data collection, bibliographic review, survey of the medical records, clinical examination, approved the final version; LRFJ *(https://orcid.org/000-0002-3795-5471) Interpreted the results of the study, participated in the review process, performed the surgeries, data collection, bibliographic review, survey of the medical records, clinical examination, approved the final version; LASM *(https://orcid.org/0000-0002-1071-9946) Participated in the review process, bibliographic review, formatting of the article, approved the final version; PSOL *(https://orcid.org/0000-0001-6771-4524) conceived and planned the activities that led to the study, interpreted the results of the study, participated in the review process, performed the surgeries, data collection, bibliographic review, survey of the medical records, clinical examination, approved the final version. All authors read and approved the final manuscript. *ORCID (Open Researcher and Contributor ID).

References

1. Martius CH. Notes on a case of posterior tibialis tendon luxation. Mem Acad Chir. 1874;23:14. [cited 2024 Nov 29]. Available from: http://gallica.bnf.fr/ark:/12148/bpt6k5711794r/f8.item.textelmage
2. Sakakibara Y, Kura H, Teramoto A, Yamashita T. Early surgical management of traumatic dislocation of the tibialis posterior tendon: a case report and review of the literature. J Med Case Rep. 2018;12(1):348.
3. Gambhir AK, Kay PR. Traumatic dislocation of tibialis posterior presenting late as a bony spur. Injury. 1998;29(5):401-2.
4. Lee K, Byun WJ, Ha JK, Lee WC. Dislocation of the tibialis posterior tendon treated with autogenous bone block: a case report. Foot Ankle Int. 2010;31(3):254-7.
5. Loncarich DP, Clapper M. Dislocation of posterior tibial tendon. Foot Ankle Int. 1998;19(12):821-4.
6. Ouzounian TJ, Myerson MS. Dislocation of the posterior tibial tendon. Foot Ankle. 1992;13(4):215-9.
7. Alamri WM, Aljeaan R, Almulhim AK, Saleh H. Traumatic dislocation of tibialis posterior tendon: A case report and literature review. Cureus. 2020;12(10)e10885.
8. Gkoudina A, Graikos G, Chatziargiriou M, Saloupis P. Posterior tibialis tendon dislocation: Case report and review of literature. Cureus. 2021;13(11):e19301.
9. Allison SJ, Nazarian LN. Musculoskeletal ultrasound: evaluation of ankle tendons and ligaments. AJR Am J Roentgenol. 2010; 194(6):W514.
10. Strydom A, Saragas NP, Tladi M, Ferrao PNF. Tibialis posterior tendon dislocation: A review and suggested classification. J Foot Ankle Surg. 2017;56(3):656-65.
11. Rips L, Luik M, Koovit T, Rahu M. Lower leg muscle recovery takes at least 12 months for functional tests to recover after late reconstruction of the tibialis posterior tendon retinaculum. BMJ Case Rep. 2022;15(1):e247273.
12. Matsui T, Kumai T, Tanaka Y. Recurrent dislocation of the tibialis posterior tendon treated with suture tape: A case report of an innovative operative procedure. J Foot Ankle Surg. 2018;57(6):1267-71.