MedCrave
Step into the World of Research
International Physical Medicine & Rehabilitation Journal

Case Report

Open Access

Fabella Syndrome: hidden culprit of knee pain

Abstract

Fabella Syndrome is a rare cause of posterolateral knee pain caused by mechanical irritation or compression of the fabella, a sesamoid bone within the tendon of the lateral gastrocnemius muscle. We present the case of a 76-year-old male with a one-year history of posterolateral knee pain, unresponsive to medication and physiotherapy. The pain, exacerbated by stair use, localized to the fabella region and was reproduced during ultrasound examination, which also identified the fabella. An ultrasound-guided injection with corticosteroids and local anesthetics provided immediate and sustained symptom relief, confirmed at the one-month follow-up. Radiographs revealed mild degenerative changes and a flattened fabella. This case highlights the importance of considering Fabella Syndrome in the differential diagnosis of posterolateral knee pain and demonstrates the value of ultrasound for diagnosis and minimally invasive treatment, offering significant symptom relief and improved quality of life.

Volume 9 Issue 3 - 2024

Sara Caldas Afonso,[1] Nuno Caria Ramalhão,[1] Marta Moreira da Silva,[1] Ana Cavalheiro,[1] João Gomes,[2] Rui Prado Costa[2]

[1]Physical Medicine and Rehabilitation Department, Centro Hospitalar Universitário de Santo António, Portugal

[2]Physical Medicine and Rehabilitation Department, Centro Hospitalar Universitário de São João, Portugal

Correspondence: Sara Caldas Afonso, Physical Medicine and Rehabilitation Department, Centro Hospitalar Universitário de Santo António, Portugal Email saracaldasafonso@gmail.com

Received: December 01, 2024 | **Published:** December 10, 2024

Case report

A 76-year-old male was referred to a Physical Medicine and Rehabilitation consultation in a Central Hospital from primary care health services, due to a 1-year history of knee pain that had not improved with conservative measures, that included pain medication and physiotherapy program. The pain was localized in the posterolateral aspect of the left knee, and the patient reported aggravated pain when descending/ascending stairs. There was no history of precipitating trauma, instability or locking, but the patient mentioned crackling sound with knee flexion and extension. Past medical history had no clinical relevance. In the physical examination, there were no alteration in the gait pattern. There was no joint effusion or other signs of inflammatory disease. At palpation, the patient reported discomfort in the posterolateral area of the knee, specifically the area where the fabella was present, there was no swealing associated. There was no limitation in knee range of motion, but pain was reported in maximal extension.

An ultrasound scan was conducted in the consultation and we were able to identify the fabella, as it can be seen in figure 1. The pressure of the ultrasound probe also triggered pain, the usual pain that was reported by the patient. We then proceeded to the ultrasound guided injection of the fabella-femoral condyle articulation with 1 ml metilpredisolone and 2 ml 2% Lidocaine and 2 ml 0.5% Ropivacaine. This procedure resulted in immediate relief of the symptoms. The patient remained symptom free following intervention in the follow-up consultation at 1-month. We proceeded to request plain radiographs of the knee that demonstrated mild degenerative changes. The lateral view revealed the presence of flattened fabella, considered normal in view of the variable radiographic appearance of this bone.

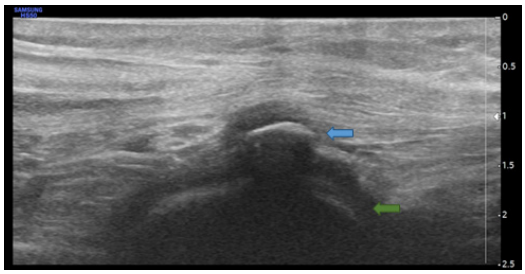

Figure 1 Ultrasound image of right knee (sagital prone view). Blue arrow shows the fabella. Green arrow shows de femoral condyle.

Figure 2 Plain X-ray right knee (lateral view). Blue arrow showing the presence of a fabella.

Discussion

The fabella is a sesamoid bone that is usually located in the anterior gliding surface of the lateral head of the gastrocnemius muscle and articulates with the posterior surface of the lateral femoral condyle. While its precise function remains speculative, it is believed to play a biomechanical role similar to the patella, redirecting forces during knee flexion. Additionally, the fabella may contribute to stabilizing the posterolateral corner of the knee by interacting with associated structures such as the fabellofibular ligament.[1–3] The prevalence of the fabella varies significantly across populations, with reported rates ranging from 20% to 87%.[4] Asian populations exhibit higher prevalence rates, such as 48.6% in a Chinese cohort, with the incidence increasing with age and in the presence of osteoarthritis.[5]

Fabella Syndrome is a rare condition characterized by posterolateral knee pain resulting from mechanical irritation or compression caused by the fabella. Reports have described symptoms arising from the fabella both as a result of chondromalacia in the younger patient[4] and Osteoarthritis in the older patients.[5,6] The pain is often exacerbated during knee extension or physical activity, and in severe cases, it may lead to complications such as neuropathies

or vascular entrapment.[7]Compression of the common fibular nerve, for example, can result in symptoms such as foot drop or sensory deficits, while vascular involvement may manifest as ischemic pain. Dynamic imaging techniques, especially ultrasound, are essential for assessing the fabella and its relationship with surrounding structures. Ultrasound is also valuable for therapeutic purposes, such as guided corticosteroid injections, which have been effective in our case and others, such as the study by Robertson et al.[6] The differential diagnosis of posterolateral knee pain includes a range of conditions that must be carefully ruled out before confirming Fabella Syndrome. Intra-articular causes, such as meniscal tears or osteochondral lesions, often present with mechanical symptoms like locking or catching, which can mimic Fabella Syndrome. Similarly, extra-articular pathologies, including ligamentous injuries of the posterolateral corner or lateral collateral ligament, as well as tendinopathies involving the gastrocnemius or popliteus tendons, can result in localized pain. Baker's cysts, while typically associated with posterior knee pain, may also contribute to posterolateral symptoms in certain cases. Nerve-related etiologies, such as common fibular nerve compression, and vascular conditions, are rarer but should be considered. Inflammatory and degenerative conditions like osteoarthritis can overlap symptomatically with Fabella Syndrome, further complicating the diagnostic process. Finally, tumors, ganglion cysts, or stress fractures involving the fibula or tibia must also be considered in the differential diagnosis.

Treatment of Fabella Syndrome often begins with conservative measures, including physical therapy, activity modification, or minimal invasive procedures, such as localized corticosteroid injections. These methods, as demonstrated in our case and Robertson et al.,[6] can provide significant relief and improve knee function. When conservative treatments fail, or in some cases as a first-line approach, surgical removal of the fabella (fabellectomy) may be performed. Fabellectomy is often considered the definitive treatment, as removing the fabella is believed to resolve the problem. However, while most patients experience substantial pain relief after surgery, some may continue to have persistent pain or difficulty with high-impact activities, as reported by Driessen et al.[4,8]

Conclusion

This case highlights the importance of considering Fabella Syndrome as a potential cause of posterolateral knee pain, particularly in active individuals or those with osteoarthritis. A systematic approach that combines a thorough clinical examination with targeted imaging is essential for accurate diagnosis. While the fabella is often an incidental finding, its presence can lead to significant symptoms when it becomes problematic. Because the function and clinical impact of the fabella are not fully understood, treatment should initially focus on conservative or minimally invasive options. Surgery should only be considered after these approaches have been exhausted. Patients should be fully informed about all available treatment options, including their associated risks and benefits. Before recommending surgical intervention, it is crucial to carefully rule out other potential causes of posterolateral knee pain. The primary goal of treatment is to reduce knee pain, improve the patient's quality of life, and restore their ability to participate in physical activities whenever possible.

Acknowledgments

None.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Pritchett JW. The incidence of fabellae in osteoarthrosis of the knee. *J Bone Joint Surg Am*. 1984;66(9):1379–1380.
2. Kawashima T, Takeishi H, Yoshitomi S, et al. Anatomical study of the fabella, fabellar complex and its clinical implications. *Surg Radiol Anat*. 2007;29(8):611–616.
3. Sekiya JK, Jacobson JA, Wojtys EM. Sonographic imaging of the posterolateral structures of the knee: findings in human cadavers. *Arthroscopy*. 2002;18(8):872–881.
4. Driessen A, Maurice B, Christoph O, et al. The fabella syndrome - a rare cause of posterolateral knee pain: a review of the literature and two case reports. *BMC Musculoskelet Disord.* 2014;15:100.
5. Hou W, Xu L, Wang J, et al. Fabellar prevalence, degeneration and association with knee osteoarthritis in the Chinese population. *Sci Rep.* 2019;9:13046.
6. Robertson A, Jones SCE, Paes R, et al. The fabella: a forgotten source of knee pain? *Knee*. 2004;11(3):243–245.
7. Tabira Y, Saga T, Takahashi N, et al. Influence of a fabella in the gastrocnemius muscle on the common fibular nerve in Japanese subjects. *Clin Anat.* 2013;26(7):893–902.
8. Ehara S. Potentially symptomatic fabella: MR imaging review. *Jpn J Radiol*. 2013;32(1):1–5.