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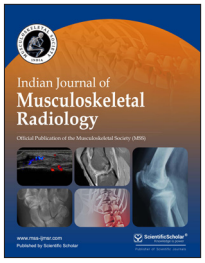

Case Report

Posteromedial knee friction syndrome: Diagnosis by magnetic resonance imaging

Victor Sudário Takahashi[1], João Paulo Lopes Milhomem[1], José Luiz Masson de Almeida Prado[2], Márcio Luís Duarte[1]

[1]Department of Radiology, UNAERP Campus Guarujá, Guarujá-SP, Brazil, [2]Department of Radiology, United Health Group, São Paulo-SP, Brazil.

***Corresponding author:**
Márcio Luís Duarte,
Department of Radiology,
UNAERP Campus Guarujá,
Guarujá-SP, Brazil.

marcioluisduarte@gmail.com

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ABSTRACT

Posteromedial knee friction syndrome is a condition rarely discussed in the literature and is characterized as the abnormal movement between the semitendinosus tendon and medial tibial condyle or gracilis and semitendinosus tendons versus semimembranosus tendon or tibial collateral ligament over the tibial crest, causing irritation of the soft tissue around. It occurs especially in active individuals. For the diagnosis, it is recommended to investigate signs and symptoms – pain (mainly in the medial joint line), edema, instability – and relate them to an imaging examination – magnetic resonance imaging (MRI). The literature emphasizes the use of MRI as an imaging method. However, ultrasound undoubtedly has valuable functions, in a way that allows the dynamic study of the posteromedial structures, and also, the treatment guided by ultrasound with corticosteroid and anesthetic. Conservative – physiotherapy and neuromuscular re-education – and surgical – removing the semimembranosus tendon and releasing the semitendinosus and gracilis tendons – treatments are the options for treatment. We present a case of a 46-year-old woman posteromedial friction syndrome diagnosed by an MRI and treated with physiotherapy and local corticosteroid therapy.

Keywords: Knee friction syndrome, Knee, Magnetic resonance imaging

INTRODUCTION

The knee is formed by complex structures, which relate to each other to generate stability and adequate movement.[1] Any abnormal motion can cause a friction syndrome, especially in active individuals.[1,2]

Posteromedial knee friction syndrome is characterized as the abnormal movement between the semitendinosus tendon and medial tibial condyle or gracilis and semitendinosus tendons versus semimembranosus tendon or tibial collateral ligament over the tibial crest, causing irritation of the soft tissue around.[3] Posteromedial friction is more common in active adults and individuals with some other concurrent knee syndrome, like medial plica syndrome, medial tibial stress syndrome, medial collateral ligament sprain, medial meniscal tear, pes anserine bursitis, and ganglion cyst formation.[4]

For the diagnosis, it is recommended to investigate signs and symptoms – pain (mainly in the medial joint line), edema, instability – and relate them to an imaging examination, especially magnetic resonance imaging (MRI).[3] The present study aims to report a case of posteromedial knee friction syndrome with a literature review.

CASE REPORT

A 46-year-old woman reported left knee pain for 3 years. She referred progressive worsening, especially in the anterior portion of the knee, limiting walking, especially using stairs. She denied arterial hypertension, diabetes mellitus, previous surgeries, and sports practice. She reported improvement with medication (ibuprofen or diclofenac and dipyrone) but without pain resolution.

On physical examination, she had knee edema, without pain on passive movement, but with pain when walking. There were no bruises or deformities on inspection of the joint, but positive McMurray and Apley tests (tests to detect meniscal lesions) and negative anterior drawer tests (test to detect anterior cruciate ligament tear). The MRI demonstrated mild edema in the fat between the medial femoral condyle and the sartorius and gracilis tendons, compatible with posteromedial friction syndrome [Figures 1 and 2]. The medial and lateral menisci were normal.

The patient was treated with physiotherapy and local corticosteroid therapy, with resolution of the symptoms.

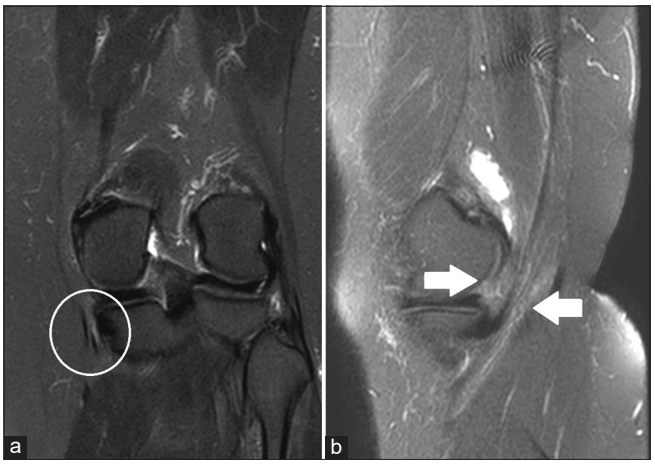

Figure 1: Proton density spectral presaturation with inversion recovery magnetic resonance imaging (MRI) sequence in the coronal section in A demonstrating mild edema in the fat between the medial femoral condyle and the sartorius and gracilis tendons (white circle). PD SPIR MRI sequence in sagittal section in B demonstrating meniscocapsular edema (white arrow).

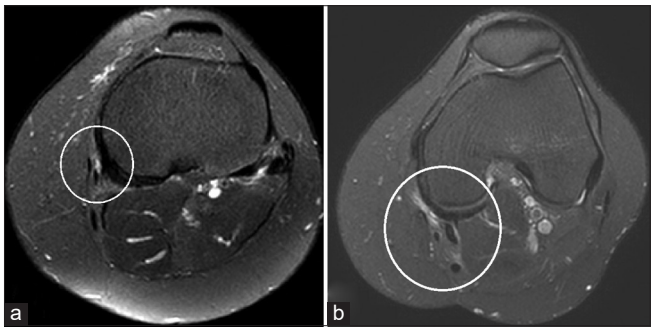

Figure 2: PD SPIR magnetic resonance imaging sequence in the axial sections in A and B demonstrating mild semimembranosus, sartorius, and gracilis tendons high signal and fluid and edema in the fat between the medial femoral condyle and the sartorius and gracilis tendons, compatible with posteromedial friction syndrome (white circle).

DISCUSSION

The association of medial pain and swelling in the knee was described in the study by Simeone *et al*., characterizing the signs and symptoms of posteromedial friction syndrome, which may be similar to medial meniscal tear.[5] This condition is rarely discussed in the literature.[3] In addition to the abnormal movement between the sartorius and/or gracilis and the medial femoral condyle, this disease causes surrounding soft-tissues inflammation.[3] Patients may experience bone marrow edema of the medial tibial condyle along with soft tissue edema around the medial collateral ligament since repetitive forces of compression and friction caused by the combined bones-ligaments generate pain and edema.[4]

The literature emphasizes the use of MRI as an imaging method. However, ultrasound undoubtedly has valuable functions – it allows the passionate study of the posteromedial structures[2] and the treatment guided by ultrasound with corticosteroid and anesthetic.[3] As demonstrated by Nogueira-Barbosa and Lacerda, ultrasound is an important technique for snapping in the posteromedial corner of the knee diagnosis.[2] Ultrasound can detect posteromedial friction syndrome different diagnosis, like medial collateral ligament sprain, pes anserine bursitis, and ganglion cyst formation.

The main differential diagnosis of posteromedial friction syndrome is pes anserine bursitis. However, according to Tschirch *et al*., fluid in the anserine bursa is seen in 5% of asymptomatic patients. Hence, it does not necessarily imply clinically overt bursitis.[6] Simeone *et al*. described MRI findings of posteromedial friction syndrome in individuals with medial knee pain and focal edema between the posteromedial condyle of the femur, sartorius, and/or gracilis tendons. They concluded that this location is distinct from pes anserine bursitis.[5]

The study by Simeone *et al*. evaluated 26 patient knees with edema between the posteromedial condyle of the femur, sartorius, and gracilis and found that the main symptoms were a pain in the medial joint line, which lasted from 9 to 14 months – a shorter period than in our case. In addition, on physical examination, stability was tested in ligament stress tests and, in only three knees, a snapping sensation was reported. Two knees were treated with an ultrasound-guided injection containing triamcinolone and 1% lidocaine directed at the site of edema – after 8 weeks, they described a feeling of this improvement.[5]

Finally, regarding the treatment, they can follow two approaches that have the possibility of helping each other, they are: Conservative and surgical.[5] As described by Simeone *et al*., the association of corticosteroids with injectable anesthetics is highlighted – especially if guided by ultrasound, providing more safety – with a significant and sustained improvement in symptoms.[3] However, relevance should be given to physiotherapy and neuromuscular re-education. In addition, there is the surgical option of removing the semimembranosus tendon and releasing the semitendinosus and gracilis tendons.[5]

CONCLUSION

The posteromedial knee friction syndrome is an uncommon/underreported disease that impairs the patient's quality of life, affecting their locomotion and limiting their movement, as demonstrated in the described report. This report also emphasizes the importance of MRI to diagnose the disease for proper treatment – conservative or surgical.

Declaration of patient consent

Institutional Review Board (IRB) permission obtained for the study.

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Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Pharis H, Kong A, Robbins M, Waranch C, Wissman R. Friction syndromes of the knee. J Knee Surg 2022;35:491-7.
2. Nogueira-Barbosa MH, Lacerda FM. Posteromedial snapping knee related to the sartorius muscle. Radiol Bras 2011;44:195-7.
3. Simeone FJ, Kheterpal A, Chang CY, Palmer WE, Bredella MA, Huang AJ, *et al*. Ultrasound-guided injection for the diagnosis and treatment of posteromedial knee friction syndrome. Skeletal Radiol 2019;48:563-8.
4. Klontzas ME, Akoumianakis ID, Vagios I, Karantanas AH. MR imaging findings of medial tibial crest friction. Eur J Radiol 2013;82:e703-6.
5. Simeone FJ, Huang AJ, Chang CY, Smith M, Gill TJ, Bredella MA, *et al*. Posteromedial knee friction syndrome: An entity with medial knee pain and edema between the femoral condyle, sartorius and gracilis. Skeletal Radiol 2015;44:557-63.
6. Tschirch FT, Schmid MR, Pfirrmann CW, Romero J, Hodler J, Zanetti M. Prevalence and size of meniscalcysts, ganglionic cysts, synovial cysts of the popliteal space, fluid filled bursae, and other fluid filled collections in asymptomatic knees on MR imaging. AJR Am J Roentgenol 2003;180:1431-6.

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