

Case Report

A Case Report: Calcific Piriformis Tendinitis in a Patient with Known Sarcoidosis

Katherine Marino^{1*}, Justin Lee², Elena Nikiphorou^{3,4}, Ajai Seth⁵

¹Royal Stoke University Hospital, Newcastle Road, Stoke-on-Trent, Staffordshire, ST4 6QG, UK

²Fortius Clinic, 17 Fitzhardinge Street, London, W1H 6EQ, UK

³Centre for Rheumatic Diseases, King's College London, London, UK

⁴Rheumatology Department, King's College Hospital, London, UK

⁵London Bridge Sports Medicine, The Shard, 32 St Thomas Street London, SE1 9BS, UK

*Correspondence author: Katherine Marino, Royal Stoke University Hospital, Newcastle Road, Stoke-on-Trent, Staffordshire, ST4 6QG, UK;
Email: katiemarino@live.co.uk

Abstract

Calcific tendinitis most commonly involves the rotator cuff tendons. The tendons around the hip are the second most common location for calcific tendinitis to occur. Symptomatic calcific piriformis tendinitis, without calcific tendinitis elsewhere, is an extremely rare diagnosis. This case report describes calcific piriformis tendinitis diagnosed on Magnetic Resonance Imaging (MRI) in a 42-year-old man whom presented with a 7-day history of left non-specific hip pain. His past medical history included sarcoidosis and a previous gluteal abscess treated with antibiotics. He has been in remission from sarcoidosis for a decade. MRI demonstrated linear uniform low signal on all sequences involving the intramuscular tendon of piriformis with marked inflammatory change within the surrounding muscle, consistent with acute calcific piriformis tendinitis. Given the results of the MRI, the patient was treated with oral high-dose non-steroidal anti-inflammatory medication (naproxen) as per the first line recommended treatment of calcific tendinitis. Patient remained symptom free and returned to normal activities of daily living and continued to exercise. To date there has been no recurrence. Calcific tendinitis of the piriformis is scarce in medical literature with a recent review finding only two available cases reported. Given the history of sarcoidosis granulomatous myositis was the major differential diagnosis, both clinically and on imaging. However, this condition usually has variable signal intensity within the granulomas and is associated with epimuscular fasciitis. The imaging findings suggest calcification and the full recovery of symptoms post treatment for calcific piriformis tendinitis support the use of diagnosis via imaging.

Keywords: Sarcoidosis; Calcific Tendinitis; Piriformis Tendinitis

Introduction

Calcific tendinitis typically affects people between 30 and 60 years of age and most commonly involves the rotator cuff tendons [1,2]. Whilst the specific aetiology of calcific tendinitis is not fully understood, the condition describes episodes of acute calcium hydroxyapatite deposition within a tendon, leading to tendon metaplasia of fibrocartilage and subsequent mineralization [3]. The tendons around the hip are the second most common location for calcific tendinitis to occur [4]. This case report describes calcific piriformis tendinitis diagnosed on Magnetic Resonance Imaging (MRI). Symptomatic calcific piriformis tendinitis, without calcific tendinitis elsewhere, is an extremely rare diagnosis. The teaching value of this case report is the uniqueness of the case and utilizing MRI features to make the diagnosis.

Citation: Marino K, et al. A Case Report: Calcific Piriformis Tendinitis in a Patient with Known Sarcoidosis. J Ortho Sci Res. 2023;4(3):1-4.

<https://doi.org/10.46889/JOSR.2023.4306>

Received Date: 06-11-2023

Accepted Date: 24-11-2023

Published Date: 01-12-2023



Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license

(<https://creativecommons.org/licenses/by/4.0/>).

Case Report

A 42-year-old man of white Greek heritage presented to a sports medicine clinic with a 7-day history of left non-specific hip pain that began shortly after a 30-minute run. Over the following days the pain became increasingly severe.

His past medical history included a gluteal abscess 8 years prior to presentation which was treated in hospital with antibiotics. No specific cause of the abscess was found, but a full recovery was made and there was no follow up. In addition, sarcoidosis was incidentally diagnosed on a chest X-ray performed as part of an employment medical screen 11 years prior to the current presentation. The diagnosis was subsequently confirmed by biopsy. He was treated with corticosteroids and a follow up Computerised Tomography (CT) scan demonstrated remission after one year of treatment. The condition has remained in remission to date. His annual blood tests had remained normal, including a normal serum calcium.

On examination, the patient was afebrile. He was unable to fully weight-bear on his left leg and walked with a limp. He was unable to walk up or down stairs and could not maintain a single leg balance. No neurological symptoms were present. Left hip range of movement was reduced in all planes (internal rotation, external rotation, flexion, extension, abduction and adduction). The pain could not be reproduced through palpation but was localized to the posterior aspect of the hip. An urgent left hip and pelvis MRI was requested.

MRI Findings

The MRI demonstrated linear uniform low signal on all sequences involving the intramuscular tendon of piriformis with marked inflammatory change within the surrounding muscle (Fig. 1). The appearances were consistent with acute calcific piriformis tendinitis.

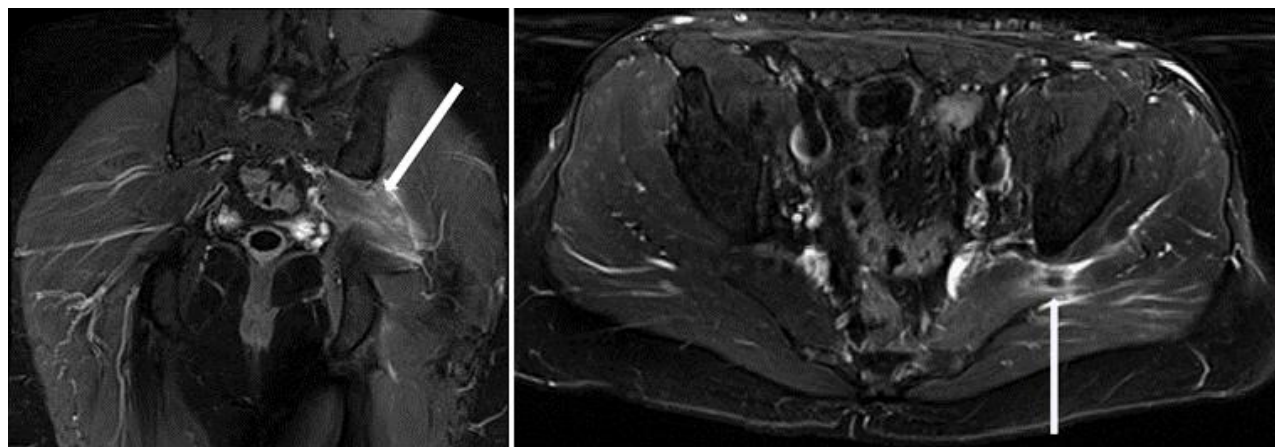


Figure 1: MRI images in 42-year-old male with sarcoidosis. Left image: Coronal STIR pelvis MRI. The left piriformis muscle is diffusely oedematous and swollen. Right image: Axial STIR pelvis MRI. There is a low-signal deposit within the left piriformis muscle with surrounding muscle oedema.

Treatment

Given the results of the MRI, the patient was treated with oral high-dose non-steroidal anti-inflammatory medication (naproxen) as per the first line recommended medication for treatment of calcific tendinitis [5]. At review two weeks after starting his anti-inflammatory medication, his symptoms had fully resolved. There was no recurrence. Patient remained symptom free and returned to normal activities of daily living and continued to exercise.

Discussion

Calcific tendinitis of the piriformis is scarce in medical literature with a recent review finding only two available cases reported [6]. A recent paper also reports a case of piriformis syndrome, diagnosed on MRI with findings of a calcific deposit with surrounding oedema within the proximal piriformis muscle adjacent to the sciatic nerve [7]. In this case, the patient gained significant symptoms improvement with steroid injection and low-energy shockwave therapy.

Given the history of sarcoidosis granulomatous myositis was the major differential diagnosis, both clinically and on imaging. However, this condition usually has variable signal intensity within the granulomas and is associated with epimuscular fasciitis [8,9].

Furthermore, the history of sarcoidosis is a potential pre-disposing factor for this patient to develop calcific tendon pathology. It should be recognized that it would be unusual for a patient with a history of isolated lung-involving sarcoidosis to develop related musculoskeletal pathology over a decade after their initial diagnosis. Isolated cases of muscular sarcoidosis and acute sarcoid-like myositis have been reported in cases of hypercalcaemia [10,11]. A previous case demonstrated non-caseating epithelioid granulomas and calcium oxalate crystals in a 16-year-old patient found to be related to sarcoidosis [12]. However, that report presented with systemic symptoms including weight loss and associated renal failure, which were not present in this case report.

Muscle involvement of sarcoidosis is usually asymptomatic, only 0.5%-2.3% have symptomatic muscular symptoms of sarcoidosis and this tends to be when there is extensive systemic involvement [13]. Isolated acute muscular involvement is very uncommon.

While there is no gold standard consensus on imaging diagnostic criteria for calcific tendinitis, the Gartner and Heyer classification is often used in clinical practice and comprises of a) well circumscribed and dense calcification b) soft contour/dense or sharp transparent; and c) translucent or cloudy appearance without clear circumscription [14]. Similar characteristic imaging features of a dense, amorphous, well-circumscribed area of calcification in soft tissue has been highlighted in other papers [15]. While there is no similar classification for calcific tendinitis of the piriformis, due to the rare nature of the pathology, it is of interest to acknowledge the MRI findings in this case are in keeping with this diagnostic classification.

Conclusion

Symptomatic calcific piriformis tendinitis is an extremely rare diagnosis. To the best of our knowledge this is the first case to demonstrate calcific piriformis tendinitis in a patient with known sarcoidosis. It is acknowledged that biopsy to confirm calcific tendinitis would have been desirable. However, the imaging findings suggest calcification and the full recovery of symptoms post treatment for calcific piriformis tendinitis support the use of diagnosis via imaging.

Contribution of Authors

AS developed the idea of creating this case report after seeing the case. KM prepared the initial draft of the report. All authors contributed to the final edition of the report.

Consent Information

Informed consent was obtained from the subject described in this report.

Conflict of Interest

The authors have no conflict of interest to declare.

References

1. Serafini G, Sconfienza LM, Lacelli F. Rotator cuff calcific tendonitis: short-term and 10-year outcomes after two-needle us-guided percutaneous treatment nonrandomized controlled trial. *Radiol.* 2009;252(1):157-64.
2. Speed CA, Hazleman BL. Calcific tendinitis of the shoulder. *N Engl J Med.* 1999;340(20):1582-4.
3. Albano D, Coppola A, Gitto S, Rapisarda S, Messina C, Sconfienza LM. Imaging of calcific tendinopathy around the shoulder: usual and unusual presentations and common pitfalls. *La Radiologia Medica.* 2021;126:608-19.
4. Almedghio S, Garneti N. The acute and chronic presentation of gluteus medius calcific tendinitis- a case report of two. *J Orthop Case Rep;*2014;4(4):48-50.
5. Catapano M, Robinson DM, Schowalter S, McInnis KC. Clinical evaluation and management of calcific tendinopathy: an evidence-based review. *J Osteopathic Medicine.* 2022;122(3):141-51.
6. Draghi F, Cocco G, Lomoro P, Bortolotto C, Schiavone C. Non-rotator cuff calcific tendinopathy: ultrasonographic diagnosis

- and treatment. *J Ultrasound*. 2020;23:301-15.
7. Chua E, Shah D. Hydroxyapatite crystal deposition disease around the hip: a rare cause of piriformis syndrome and ischiofemoral impingement. *BJR Case Rep*; 2022;7(6):20210075.
 8. Koyama T, Ueda H, Togashi K, Umeoka S, Kataoka M, Nagai S. Radiologic manifestations of sarcoidosis in various organs. *RadioGraphics*; 2004;24(1):87-104.
 9. Schulze M, Kötter I, Ernemann U, Fenchel M, Tzaribatchev N, Claussen CD, et al. MRI findings in inflammatory muscle diseases and their noninflammatory mimics. *Am J Roentgenol*. 2009;192(6):1708-16.
 10. Mageau A, Rigolet A, Benali K, Chauchard M, Ladjeroud S, Mahe I, et al. Life-threatening hypercalcemia revealing diffuse and isolated acute sarcoid-like myositis: a new entity? (a case-series). *Medicine (Baltimore)*. 2016;95(10):e3089.
 11. Dhomps A, Foret T, Streichenberger N, Skanjeti A, Tordo J. Isolated muscular sarcoidosis revealed by hypercalcemia and 18F-FDG PET/CT. *Clinical Nuclear Med*. 2019;44(10):824-5.
 12. Orandi AB, Eutsler E, Ferguson C, White AJ, Kitcharoensakkul M. Sarcoidosis presenting as granulomatous myositis in a 16-year-old adolescent. *Pediatr Rheumatol Online J*. 2016;14(1):59.
 13. Han EJ, Jang YS, Lee IS, Lee JM, Kang S, Kim HS. Muscular sarcoidosis detected by F-18 FDG PET/CT in a hypercalcemic patient. *J Korean Med Sci*. 2013;28(9):1399-402.
 14. Gärtner J, Heyer A. Calcific tendinitis of the shoulder. *Orthopade*. 1995;24:284-302.
 15. Kim YS, Lee HM, Kim JP. Acute calcific tendinitis of the rectus femoris associated with intraosseous involvement: a case report with serial CT and MRI findings. Springer-Verlag France. *Eur J Orthop Surg Traumatol*. 2012;23:233-9.

Journal of Orthopaedic Science and Research



Publish your work in this journal

Journal of Orthopaedic Science and Research is an international, peer-reviewed, open access journal publishing original research, reports, editorials, reviews and commentaries. All aspects of orthopaedic health maintenance, preventative measures and disease treatment interventions are addressed within the journal. Orthopaedicians and other researchers are invited to submit their work in the journal. The manuscript submission system is online and journal follows a fair peer-review practices.

Submit your manuscript here: <https://athenaeumpub.com/submit-manuscript/>