Unusual presentation of more common disease/injury

Pyomyositis of the piriformis muscle presenting with sciatica in a teenage rugby player

Dia Eldean Giebaly,¹ Sam Horriat,² Aabha Sinha,³ Singu Mangaleshkar²¹Trauma and Orthopaedics Department, NHS Ayrshire and Arran, Ayr, UK;²Trauma and Orthopaedics Department, The Dudley Group of Hospitals NHS Foundation Trust, Dudley, UK;³Radiology Department, The Dudley Group of Hospitals NHS Foundation Trust, Dudley, UK**Correspondence to** Mr Dia Eldean Giebaly, dia.giebaly@doctors.org.uk**Summary**

The authors report a rare case of piriformis pyomyositis, in a teenage rugby player, who was initially feverish and presented to us with low back pain, sciatica and inability to mobilise due to pain. Subsequent imaging investigations (MRI scan) revealed abscess formation in the piriformis muscle with compression effect on the ipsilateral sciatic nerve. A course of intravenous antibiotic therapy followed by oral antibiotics fully resolved his symptoms and returned inflammatory markers back to normal.

BACKGROUND

Pyomyositis of pelvic muscles can present with generalised and systemic symptoms as well as symptoms secondary to the proximity or compression effect on the nearby structures, including hip joints, nerves and blood vessels.¹

² Pyomyositis of piriformis muscle particularly should be considered as a differential diagnosis in a febrile patient presenting with a clinical picture of sciatica. We hope to highlight the varied and protean nature of such cases so that important diagnoses are not missed.

CASE PRESENTATION

An 18-year-old male rugby player presented to the emergency department with a 5-day history of sudden onset lower back pain. The severe pain in his lower back radiated to his left leg and foot. The pain was exacerbated by movement, coughing or sneezing and relieved by lying supine. He was reluctant to move while in bed, and was not able to stand up due to severe leg and back pain.

The patient was feverish, with a temperature of 38.7° on admission however, he had not experienced any rigors or sweating and had no known infections. He was unable to straight leg raise either side due to pain. Other hip movements including flexion were painful. Neurological examination of the lower limb did not demonstrate any loss of sensation or reduced muscle power in any of the nerve root distributions. His abdominal examination was unremarkable.

Blood results on admission showed normal urea and electrolytes, normal full blood count, raised C reactive protein to 183 mg/l, raised erythrocyte sedimentation rate to 37 mm 1st h and minimally deranged liver function tests (bilirubin 34 µmol/l, alkaline phosphatase 166 U/l, alanine transaminase 171 IU/l).

The plain radiograph images of his lumbar spine revealed grade I spondylolisthesis at the L5/S1. Results of his pelvic and hip x-rays were unremarkable. As the initial diagnosis was sciatica secondary to discitis or disc prolapse, an urgent MRI scan of lumbosacral spine has been arranged.

The MRI scan images revealed disc degeneration at L5/S1 with fluid identified in the left iliopsoas and in the sacroiliac joint (figure 1). The prominent feature of the scan was a 46×30 mm abscess within the left piriformis muscle causing extrinsic compression of the neurovascular bundle tenting the sciatic nerve (figure 2).

S aureus was cultured from his blood, and he was commenced on intravenous vancomycin 1 g twice daily and meropenim 1 g three times a day. This was then changed to intravenous flucloxacillin 2 g four times a day and rifampicin 300 mg twice daily based on sensitivity testing.

After 20 days of treatment with intravenous antibiotics, his symptoms subsided with resumption of mobility, his

Figure 1 Coronal STIR images showing fluid throughout the length of right S1 joint. Inflammatory changes in the iliopsoas and abscess in piriformis.

Figure 2 Fat saturated proton density axial images showing the abscess tenting the sciatic nerve. Bone marrow oedema is also present on the iliac side of the joint.

inflammatory markers improved, his C reactive protein level reduced to 3 mg/l, erythrocyte sedimentation rate 27 mm 1st h. He was discharged with a further 8 weeks of oral flucloxacillin and erythromycin. He was regularly reviewed in clinic for a total duration of 6 months, with full resolution of symptoms and return to sporting activities.

INVESTIGATIONS

Initial blood investigations showed a raised C reactive protein to 183 mg/l, a raised erythrocyte sedimentation rate to 37 mm 1st h and a normal white cell count. Results of his radiographs were normal except for some minor spondylolisthesis at L5/S1. A 46×30 mm abscess was revealed with a lumbosacral MRI scan within the left piriformis muscle tenting the sciatic nerve. Blood cultures grew *S aureus* and the antibiotic treatment was changed according to sensitivity results. Sterile aspiration of the abscess was not required.

DIFFERENTIAL DIAGNOSIS

As the initial diagnosis was sciatica secondary to discitis or disc prolapse, an urgent MRI scan of lumbosacral spine has been arranged. Sacroilitis can present with pain in the hip, buttock, thigh, spine, flank, groin and abdomen mimicking appendicitis, and sometimes with associated jaundice. Classically acute bacterial infection of the sacroiliac joint presents with a triad of fever, antalgic gait and buttock pain.³

The MRI scan images revealed disc degeneration at L5/S1 with fluid identified in the left iliopsoas and in the sacroiliac joint (figure 1). The prominent feature of the scan was a 46×30 mm abscess within the left piriformis muscle causing extrinsic compression of the neurovascular bundle tenting the sciatic nerve (figure 2).

TREATMENT

S aureus was cultured from his blood, and he was commenced on intravenous vancomycin 1g twice daily and meropenem 1g three times a day. This was then changed to intravenous flucloxacillin 2 g four times a day and rifampicin 300 mg twice daily based on sensitivity testing.

OUTCOME AND FOLLOW-UP

After 20 days of treatment with intravenous antibiotics, his symptoms subsided with resumption of mobility, his inflammatory markers improved, his C reactive protein level reduced to 3 mg/l, erythrocyte sedimentation rate 27 mm 1st h. He was discharged with a further 8 weeks of oral flucloxacillin and erythromycin. He was regularly reviewed in clinic for a total duration of 6 months, with full resolution of symptoms and return to sporting activities.

DISCUSSION

There are only seven cases of piriformis pyomyositis documented in English literature,^{4–10} with three of the reported cases occurring in teenagers.^{4 6 8} Piriformis myositis has been reported in active sportsmen, including in a 69-year-old tennis player soon after a tournament⁹ and in a 17-year-old swimmer who was admitted with fever and severe leg and back pain and sciatica to the point that even walking became difficult.

The only other two cases of piriformis pyomyositis presenting with typical sciatica type pain have been reported as obstetric complications following abortions.^{5 11} We report another case of piriformis pyomyositis in a teenager with genuine sciatica as the main presenting symptom, severe enough to inhibit mobilisation.

Trauma to a muscle on a background of bacteraemia has been suggested in the development of pyomyositis^{7 12–15} with numerous reports of bacterial pyomyositis occurring in young athletes.^{3 7 14 15} Other predisposing factors include sickle cell disease, viral or parasitic infections, HIV infections and rheumatologic disease.¹⁶ In our patient, it is plausible that trauma to his piriformis from a contact sport such as rugby could have led to the development of pyomyositis of his piriformis muscle.

Early diagnosis of this condition can potentially prevent abscess formation and swelling of the surrounding tissues, compressing the neurovascular bundle and causing severe and disabling sciatica pain.¹⁷ Distension of the sacroiliac joint causes pain in the buttock and muscle splinting of this joint. Such splinting may be responsible for the failure to examine the sacroiliac joints adequately during the initial physical examination of patients who was reluctant to move.

Attempting aspiration or drainage of the abscess for diagnostic purposes was not necessary with our patient having grown *S aureus* from blood cultures, and responded well to treatment with intravenous antibiotics. Previously reported piriformis pyomyositis responded well to empiric antibiotic therapy as well. Nevertheless if patient do not show suitable improvement of symptoms or inflammatory markers, surgical intervention and drainage of abscess will need to be considered.

It is very important that front-line medical practitioners (general practitioners and emergency room doctors) be aware of this condition and to consider abscesses and pyomyositis of the pelvic muscles as a differential diagnosis in patients presenting with radicular pain. Given its relative rarity, practitioners encounter it infrequently and can result in diagnostic delay, morbidity and unnecessary, often invasive investigations.

We would like to highlight the varied and protean nature of the symptoms of active children with piriformis

muscle pyomyositis, and recommend frequent and thorough review of symptoms and signs in such cases, such that important diagnoses are not overlooked.

Learning points

- ▶ Piriformis pyomyositis can present with severe sciatica symptoms.
- ▶ Early diagnosis of this condition can potentially prevent abscess formation and swelling of the surrounding tissues.
- ▶ Attempting aspiration or drainage of the abscess to obtain a positive pathogenic organism is not always necessary if the patient responds well to treatment.
- ▶ MRI is useful in diagnosis of piriformis pyomyositis.

Competing interests None.

Patient consent Obtained.

REFERENCES

1. **Stuart JE**, McHale KA, Elias S, *et al*. Piriformis abscess mimicking a hip pyarthrosis. *Orthop Rev* 1993;**22**:925–8.
2. **Arai Y**, Kawakami T, Soga H, *et al*. Psoas abscess associated with iliac vein thrombosis and piriformis and gluteal abscesses. *Int J Urol* 1999;**6**:257–9.
3. **Cheer K**, Pearce S. Osteoarticular infection of the symphysis pubis and sacroiliac joints in active young sportsmen. *BMJ* 2009;**339**:b5019.
4. **Burton DJ**, Enion D, Shaw DL. Pyomyositis of the piriformis muscle in a juvenile. *Ann R Coll Surg Engl* 2005;**87**:W9–12.
5. **Chong KW**, Tay BK. Piriformis pyomyositis: a rare cause of sciatica. *Singapore Med J* 2004;**45**:229–31.
6. **Chusid MJ**, Hill WC, Bevan JA, *et al*. Proteus pyomyositis of the piriformis muscle in a swimmer. *Clin Infect Dis* 1998;**26**:194–5.
7. **Kinahan AM**, Douglas MJ. Piriformis pyomyositis mimicking epidural abscess in a parturient. *Can J Anaesth* 1995;**42**:240–5.
8. **Kraniotis P**, Marangos M, Lekkou A, *et al*. Brucellosis presenting as piriformis myositis: a case report. *J Med Case Reports* 2011;**5**:125.
9. **Burkhart BG**, Hamson KR. Pyomyositis in a 69-year-old tennis player. *Am J Orthop* 2003;**32**:562–3.
10. **Chen WS**. Sciatica due to piriformis pyomyositis. Report of a case. *J Bone Joint Surg Am* 1992;**74**:1546–8.
11. **Colmegna I**, Justiniano M, Espinoza LR, *et al*. Piriformis pyomyositis with sciatica: an unrecognized complication of “unsafe” abortions. *J Clin Rheumatol* 2007;**13**:87–8.
12. **Renwick SE**, Ritterbusch JF. Pyomyositis in children. *J Pediatr Orthop* 1993;**13**:769–72.
13. **Christin L**, Sarosi GA. Pyomyositis in North America: case reports and review. *Clin Infect Dis* 1992;**15**:668–77.
14. **Jayoussi R**, Bialik V, Eyal A, *et al*. Pyomyositis caused by vigorous exercise in a boy. *Acta paediatrica* 1995;**84**:226–7.
15. **Meehan J**, Grose C, Soper RT, *et al*. Pyomyositis in an adolescent female athlete. *J Pediatr Surg* 1995;**30**:127–8.
16. **Birkbeck D**, Watson JT. Obturator internus pyomyositis. A case report. *Clin Orthop Relat Res* 1995;**316**:221–6.
17. **Macnicol MF**. Patterns of musculoskeletal infection in childhood. *J Bone Joint Surg Br* 2001;**83**:1–2.

This pdf has been created automatically from the final edited text and images.

Copyright 2012 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.

BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Giebal DE, Horriat S, Sinha A, Mangaleskar S. Pyomyositis of the piriformis muscle presenting with sciatica in a teenage rugby player. *BMJ Case Reports* 2012;10.1136/bcr.12.2011.5392, Published XXX

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow

Keep up to date with all published cases by signing up for an alert (all we need is your email address) <http://casereports.bmj.com/cgi/alerts/etoc>