Surgical Neurology International

SNI: Spine, a supplement to Surgical Neurology International

OPEN ACCESS

For entire Editorial Board visit : http://www.surgicalneurologyint.com

Editor: Nancy E. Epstein, MD Winthrop University Hospital, Mineola, NY, USA

Nontropical pyomyositis complicated with spinal epidural abscess in a previously healthy child

Mohamed Boulyana, Mohammad Saeed Kilani[1]

Department of Pediatrics, Hospital of Saint Omer, 62500, [1]Department of Radiology, Lille University Hospital, 59037, France

E-mail: *Mohamed Mohamed Boulyana - boulya77@hotmail.fr; Mohammad Saeed Kilani - mohammadalikilani@yahoo.com
*Corresponding author

Received: 30 November 13 Accepted: 20 January 14 Published: 16 April 14

This article may be cited as:
Boulyana M, Kilani MS. Nontropical pyomyositis complicated with spinal epidural abscess in a previously healthy child. Surg Neurol Int 2014;5:S119-21.
Available FREE in open access from: http://www.surgicalneurologyint.com/text.asp?2014/5/4/119/130718

Abstract

Background: Pyomyositis (PM), a rare pyogenic infection that involves skeletal muscles, if not immediately diagnosed, can be fatal. Most notably, this results in spinal epidural abscess (SEA) in typically unhealthy individuals.

Case description: We present a very rare nontropical PM complicated with SEA in a previously healthy child revealed by Magnetic resonance imaging (MRI). Our patient recovered without complications 5 years after abscess drainage and antibiotics.

Conclusion: PM remains a challenge to clinicians and should be considered in the differential diagnosis of musculoskeletal pain. MRI is the investigation of choice of spinal infection and should be undertaken at an early stage.

Key Words: Pyomyositis, Spinal epidural abscess, MRI, children

Access this article online

Website: www.surgicalneurologyint.com

DOI: 10.4103/2152-7806.130718

Quick Response Code:

INTRODUCTION

First described by Scriba[8] in 1885, pyomyositis (PM) is a rare entity in temperate climates, but accounts for up to 4% of surgical admissions in the tropics.[1] PM is a bacterial infection of the skeletal muscles, with a risk of abscess extension into the epidural space: Spinal epidural abscess (SEA).[1,4] Because of the nonspecific symptoms, diagnosis of PM is often delayed and may lead to severe morbidity or even death.[1,4] We report a very rare case of staphylococcal paraspinal PM complicated by SEA in a previously healthy boy.

CASE REPORT

We report a very rare case of PM and SEA in a 13-year-old previously healthy boy. He was admitted because of a progressive pain located in the left gluteal region and then left L5 sciatica. On admission, physical examination was normal with stable vital signs. He was febrile at 39°C and neurologic examination revealed a reduced Lasegue sign on the left. Laboratory tests showed an elevated C-reactive protein (CRP) at 92 mg/l without leukocytosis. Blood culture was positive for a methicillin-sensitive *Staphylococcus aureus* (MSSA). Initially, the spinal plain radiographs, ultrasound, computerized tomography scan, and bone scintigraphy showed no abnormality. Subsequently, spinal magnetic resonance imaging (MRI) with Gadolinium injection revealed left paraspinal muscular enhancement and multiple intramuscular fluid collections with thick enhancing wall [Figures 1 and 2]. There was also intraspinal extension from the fourth lumbar (L4) to the first sacral vertebrae (S1) with epidural enhancement and epidural abscess measuring 10 mm occupying the left half of the spinal canal and displacing the dural sac to the right [Figure 3]. There was no evidence of osteoarticular involvement. Abscess drainage was immediately realized and intravenous

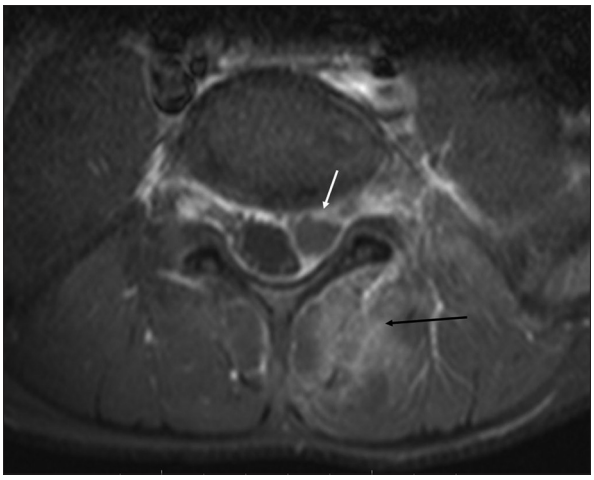

Figure 1: Axial,T1-weighted MR images with Gadolinium injection showing well-defined epidural fluid collection lateralized to the left displacing dural sac to the right side with enhancing wall (white arrow). Please note also enhancement of left paraspinal muscles (black arrow)

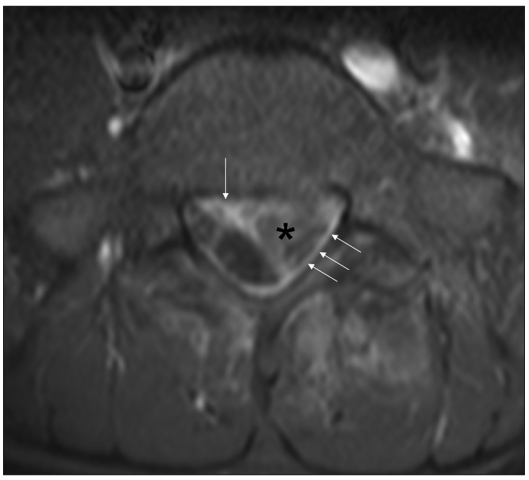

Figure 2: Axial,T1-weighted MR images with Gadolinium injection showing right posterior epidural enhancement and along the left lamina of S1 (white arrows) with spinal epidural abscess (asterisk)

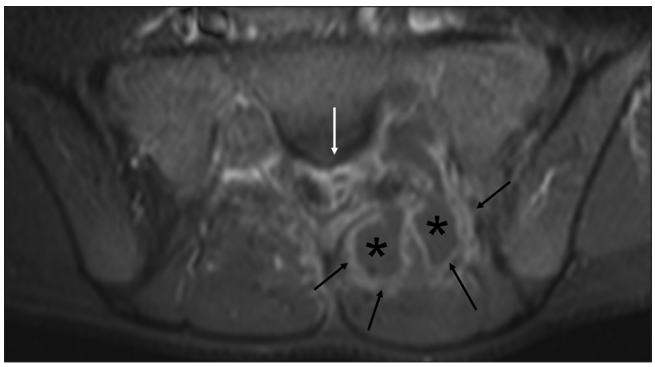

Figure 3: Axial,T1-weighted MR images with Gadolinium injection showing two necrotic collections (asterisks) within the left paraspinal muscles with thick enhancing walls (black arrows) extending to the spinal canal in form of septated collection (white arrow)

oxacillin (100 mg/kg/day) was started. Sciatica was immediately improved and the patient became afebrile with a normalized CRP 4 days postoperatively. A complete evaluation ruled out any immune defect. He was discharged from the hospital 12 days after surgery with oral Amoxicillin and Clavulanic acid for 4 weeks. The patient was followed-up regularly for 5 years without recurrence or residual deformity.

DISCUSSION

PM is a primary infection of skeletal muscles, which is endemic in the tropics where it represent 4% of surgical admissions.[1] In temperate climates, the PM is rare and the majority having comorbidities such as human immunodeficiency virus (HIV), diabetes.[2,10] The incidence of SEA was 0.4 cases per 100,000 person-years.[1,4] The disease has a progressive course, starting with myositis before manifesting as an abscess and possible septic shock.[7,9] Because of nonspecific presentation, a delayed diagnosis is common in cases of PM.[7] PM must be considered in the etiological diagnosis of patients presenting with pain, tenderness and reddened skin even no fever. Laboratory studies show leukocytosis, elevated erythrocyte sedimentation rate and elevated CRP.[2] Blood culture is positive in less than 50% of children and *S. aureus* is the major causative agent.[2,7,9] Recently, methicillin-resistant *S. aureus* (MRSA) was found to be an important causative agent in PM.[3,9] The definite diagnosis is usually based on imaging.[7,11] Plain radiographs are frequently not informative.[5] PM may be accurately diagnosed with ultrasound, however, the intraspinal extension cannot be visualized. However, for both PM and SEA, MRI is the imaging of choice, not only because of its specificity and sensitivity for early diagnosis but also for its utility to exclude osteomyelitis, to study the extension of a possible abscess and to guide treatment.[2,3,7]

Once diagnosed, treatment of PM consists of appropriate antibiotics and possible abscess drainage depending on its size and pressure symptoms.[2,7] Antibiotic alone can be sufficient in an early stage.[2,6] Both PM and small SEA may be treated conservatively with percutaneous aspiration and intravenous antibiotics.[3] However, a surgical decompression may subsequently be required in 50%.[3] Antibiotics should cover *S. aureus* beta lactamase-resistant penicillin, such as oxacillin with an aminoglycoside or clindamycin unless suspected MRSA where vancomycin, teicoplanin, or linezolid are chosen.[3,5,7] Therapy is usually with intravenous antibiotics for at least for 2 weeks and then oral antibiotics for 4-6 weeks.[3,7,9]

CONCLUSION

Although rare, PM should be considered in the differential diagnosis of musculoskeletal pain. A delay in

diagnosis can be fatal. Early diagnosis and appropriate antibiotic following drainage are important as major complications can be avoided. Having a high sensitivity, MRI is the investigation of choice of spinal infection.

REFERENCES

1. Ansaloni L. Tropical pyomyositis. World J Surg 1996;20:613-7.
2. Crum-Cianflone NF. Bacterial, fungal, parasitic, and viral myositis. Clin Microbiol Rev 2008;21:473-94.
3. Curry WT Jr, Hoh BL, Amin-Hanjani S, Eskandar EN. Spinal epidural abscess: Clinical presentation, management, and outcome. Surg Neurol 2005;63:364-71.
4. Govender S. Spinal infections. J Bone Joint Surg Br 2005;87:1454-8.
5. Martinez-Aguilar G, Avalos-Mishaan A, Hulten K, Hammerman W, Mason EO Jr, Kaplan SL. Community-acquired, methicillin-resistant *Staphylococcus aureus* musculoskeletal infections in children. Pediatr Infect Dis J 2004;23:701-6.
6. Miller NJ, Duncan RD, Huntley JS. The conservative management of primary pyomyositis abscess in children: Case series and review of the literature. Scott Med J 2011;56:i-181.
7. Mitsionis GI, Manoudis GN, Lykissas MG, Sionti I, Motsis E, Georgoulis AD, et al. Pyomyositis in children: Early diagnosis and treatment. J Pediatr Surg 2009;44:2173-8.
8. Scriba J. Beitrag zur aetiologie der myositis acuta. Dtsch Z Chirurg 1885;22:497-502.
9. Taksande A, Vilhekar K, Gupta S. Primary pyomyositis in a child. Int J Infect Dis 2009;13:e149-51.
10. Unnikrishnan PN, Perry DC, George H, Bassi R, Bruce CE. Tropical primary pyomyositis in children of the UK: An emerging medical challenge. Int Orthop 2010;34:109-13.
11. Yu CW, Hsiao JK, Hsu CY, Shih TT. Bacterial pyomyositis: MRI and clinical correlation. Magn Reson Imaging 2004;22:1233-41.