

Iliac bone tuberculosis with bicompartamental abscess

Mantu Jain,¹ Saurav Sarkar,² Suprava Naik,³ Sudarsan Behera¹

¹Department of Orthopedics, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

²Department of ENT, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

³Department of Radiodiagnosis, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

Correspondence to

Dr Mantu Jain,
montu_jn@yahoo.com

Accepted 19 July 2018

DESCRIPTION

A 39-year-old man presented with insidious onset back pain and groin pain for 2 weeks, and limp for 7 days to orthopaedic outpatient department. He had anorexia for the past fortnight and had noticed weight loss of about 7 kg, though he remained afebrile. On examination, he had a pseudoflexion deformity of the right hip and tenderness in the right iliac fossa. An X-ray of the pelvis was done which showed an ill-defined lytic lesion in the anterior half of the right iliac blade with minimal periosteal reactions (figure 1). His laboratory investigation showed a high haemoglobin of 12 g/dL, erythrocyte sedimentation rate of 64 mm fall at the end of first hour, a raised total lymphocyte count of $13 \times 10^9/L$ with lymphocytosis 40%. His renal, liver and nutritional parameters were within normal range (albumin >3500 mg/dL, absolute lymphocyte count $>1500/mm^3$). X-ray of the dorsolumbosacral region and chest was unremarkable. An MRI was done which showed increased intensity on T2 and fat-suppressed images of the iliac bone with erosions in the cortex, also T2 hyperintense collection in the adjacent iliopsoas muscle and the gluteal muscles suggestive of abscess (figure 2). An ultrasound of the same, showed hypoechoic collection anteromedial to the right iliac bone (figure 3). About 30 mL of aspirate that appeared purulent and thickish was removed under guidance and sent for Gram, Zeihl Neelsen (ZN) staining and gene expert (Catridge Based Nucleic Acid Amplification Test (CBNAAT)). The Gram stain showed more than 100 white blood cell per low power field, but both the ZN staining (showing few acid-fast bacteria) and gene expert (CBNAAT) were positive, confirming *Mycobacterium* and sensitive to rifampicin. The patient was started on a four-drug



Figure 1 X-ray pelvis with both hips showing ill-defined lytic lesion (arrow mark) involving the right ilium with minimal periosteal reaction.

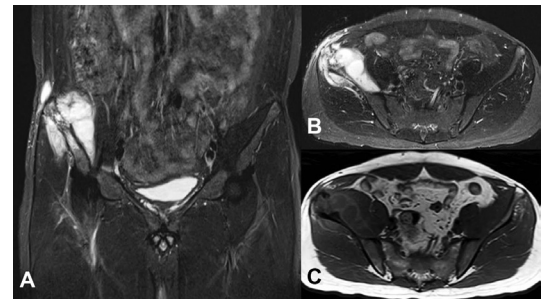


Figure 2 Coronal (A) and axial (B) fat-suppressed MRI shows increased signal intensity in the right iliac bone, small area of liquefaction and adjacent cortical erosion. In continuity with the bone lesion, hyperintense collection is seen medially displacing the iliopsoas muscle and laterally in the gluteal muscles. The collection appears hypointense on axial T1WI (C). T1WI, T1 weighted Image.

regimen of anti-tubercular therapy as per Revised National Antitubercular Control Programme (category 1: Isoniazid, Rifampicin, pyrozinamide and Ethambutol (HRZE) for 2 months followed by Isoniazid, Rifampicin (HR) for 4 months). At about 2-month follow-up, he had significant clinical improvement with a feeling of generalised well-being, regaining his appetite and weight gain of about 4 kg.

Tuberculosis is a major health burden, particularly in the low-income and middle-income countries. Extrapulmonary tuberculosis has accounted for 10%–15% of the disease of which about 10% are skeletal, mainly involving the spine followed by osteoarticular affection. Isolated bony involvement is rare but reported in the ribs, long bones, metacarpals, facial bones and pelvis.¹ Diagnosis in such cases can be difficult due to atypical presentation and often missed. Imaging plays an important role in such scenario. A plain X-ray can show destruction of bone, but it is better delineated in CT scan. Pelvic abscess can be confirmed by ultrasonography, and iliac bone defect can also be outlined. We highlight the MRI findings here, wherein one can very well appreciate the bicompartamental abscess along with iliac bone involvement. Iliopsoas (IP) abscess in low-income and middle-income countries is mainly primary and secondarily may be due to adjacent spondylodiscitis.² As a standard teaching in our place, IP abscess has to be tubercular unless proved otherwise. Hence, we could promptly diagnose by ZN stain and gene expert.

Peculiar findings in our case are:

1. Isolated pelvic bone involvement in tuberculosis which is rare.



© BMJ Publishing Group Limited 2018. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Jain M, Sarkar S, Naik S, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2018-226606

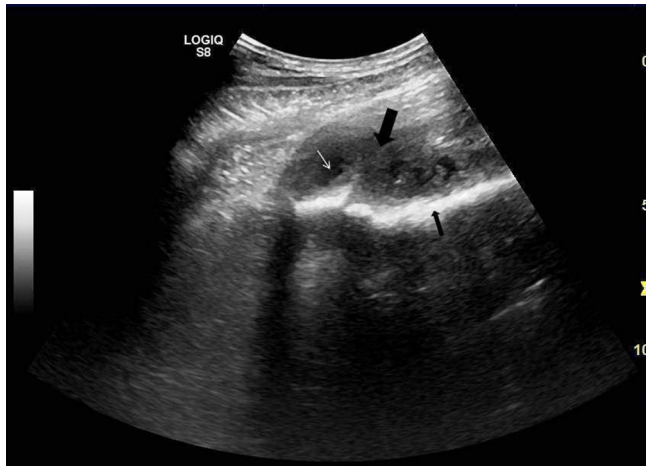


Figure 3 Long axis grey scale ultrasound image of the right/left lumbar region shows a large hypoechoic lesion (thick black arrow) in the psoas muscle seen anterior to the cortex of the lumbar spine (thin black arrow) with small anechoic areas (thin white arrow) within it (suggesting necrosis and thus abscess formation).

2. Secondary IP abscess is due to gastrointestinal or genitourinary pathology but then its mainly pyogenic but tubercular in our case.
3. Secondary tubercular IP abscess spreads from adjacent vertebrae (spondylodiscitis) which was not the case.

CBNAAT is an effective and rapid test with high sensitivity (95.7%) and specificity (99.3%) which is a very useful tool for an early diagnosis even in cases that are stain negative.³ The patient would need a repeat follow-up as recurrence is not uncommon. Imaging plays a very important role in the diagnosis of skeletal tuberculosis. The differential diagnosis that one must keep in

mind includes pyogenic abscess, other granulomatous conditions, haematomas, enlarged IP bursa and pseudo aneurysm.⁴

We intend to highlight the classical MRI findings supplemented with other diagnostic imaging in this situation.

Learning points

- ▶ Tuberculosis can present as isolated osteomyelitis.
- ▶ Iliac abscess in tuberculosis can occur without spinal involvement.
- ▶ Cortical erosion and perforation in ilium can involve both sides, leading to bicompartmental abscess.
- ▶ Ultrasound-aided drainage helps in diagnostic and therapeutic management with antitubercular medication.

Contributors MJ and SB identified the patient and imaging was done by SN. SS reviewed the literature and gave important inputs while writing up the paper. MJ and SN wrote the paper. All authors have read and agree with the content of the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Chaudhary S, Samiullah AAM. An unusual presentation of tuberculosis of iliac bone. *Pak J Med Sci* 2005;21:489–90.
- 2 Mallick IH, Thoufeeq MH, Rajendran TP. Iliopsoas abscesses. *Postgrad Med J* 2004;80:459–62.
- 3 Sharma SK, Kohli M, Yadav RN, *et al.* Evaluating the diagnostic accuracy of Xpert MTB/RIF assay in pulmonary tuberculosis. *PLoS One* 2015;10:1–9.
- 4 Satishchandra H, Virupaxappa TK. A case report - iliac bone tuberculosis with iliopsoas abscess. *Ind J Radiol Imag* 2005;15:255–8.

Copyright 2018 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.

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