CASE REPORT

Brodie's abscess of the posterior ilium: a rare cause for low back pain in children

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SUMMARY

Brodie's abscess of the pelvis is very rare in healthy children. It can be missed because of its varied presentation. We present an 11-year-old boy who presented with low back pain. Investigations revealed a well-defined lesion in the posterior ilium. He underwent open biopsy and debridement. At the end of the final follow-up, he was asymptomatic and there was no recurrence. We present this case for the rare site of Brodie's abscess and for its unusual presentation as low back pain.

BACKGROUND

Pelvic osteomyelitis accounts for 2–3% of all cases of osteomyelitis in children.¹ Brodie's abscess, a variety of subacute osteomyelitis, is usually common in proximal metaphysis of tibia and is due to low virulent organisms. It can present as lumbar, gluteal or abdominal syndrome based on the direction of spread of inflammation. We present this case for its rare site and its presentation as low back pain which can be misdiagnosed.

CASE PRESENTATION

An 11-year-old boy presented with low back pain since 2 months. The pain was insidious in onset with no associated swelling. There was no history of trauma or fever. On examination, he had localised tenderness over right posterior superior iliac spine. There was no warmth or swelling. There was no significant family history.

INVESTIGATIONS

Blood investigations revealed haemoglobin of 10.8 g/dL, total count 11 780/mm³ and erythrocyte sedimentation rate of 42 mm at 1 h. Plain radiographs of the pelvis and sacroiliac joint revealed a well-defined osteolytic lesion in the posterior iliac bone just below the posterior superior iliac spine (figures 1 and 2). CT revealed a linear track which was tracking posterosuperiorly along the medullary aspect of the right-iliac bone surrounded by inhomogenous sclerosis with bony dehiscence along the superior end of the track with subtle periosteal reaction suggestive of probable osteomyelitis (figure 3).

DIFFERENTIAL DIAGNOSIS

Differential diagnoses were tuberculosis, osteomyelitis, benign bone tumours and eosinophilic granuloma.

Figure 1 Plain radiograph of the pelvis anteroposterior view showing an osteolytic lesion in the posterior ilium.

TREATMENT

The child was planned for an open biopsy and curettage of the lesion. Under general anaesthesia, incision was made centring over the posterior iliac spine. The lesion was identified under image

Figure 2 Plain radiograph of the sacroiliac joint oblique view showing a well-defined osteolytic lesion in the posterior ilium.

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Figure 3 CT scan showing a well-defined lesion with surrounding sclerosis in the ilium.

intensifier. The lesion was curetted and tissues were sent for culture sensitivity and histopathology (figure 4). There was no frank purulent material. Routine and acid-fast bacilli cultures were negative. Histopathology was suggestive of subacute osteomyelitis. The child was on antibiotics for a period of 6 weeks.

OUTCOME AND FOLLOW-UP

At the end of 10-month follow-up, the child was painless and there was no recurrence of the lesion.

DISCUSSION

Osteomyelitis of the pelvis is quite rare in healthy kids. It accounts for 10–15% of all skeletal osteomyelitis.² Among the pelvic bones, ilium is involved more often compared with pubis and ischium probably because of it being a wide bone with rich blood supply. The aetiology for infection could be endogenous or exogenous. Endogenous is usually due to haematogenous spread and exogenous is following an open injury. According to Beaupre and Carroll³ pelvic infection can present as lumbar, gluteal or abdominal syndrome based on the direction of spread of inflammation. In the lumbar variety, the spread of inflammation is through the inner cortex of the bone and it irritates the lumbosacral plexus. Spread of inflammation to the outer cortex produces gluteal symptoms. Abdominal syndrome develops when the spread is to the iliac fossa.

Figure 4 Intraoperative photograph showing the unhealthy granulation tissue inside the cavity.

In a study carried out by Rand *et al*⁴ two of four cases presented with hip pain while the other two presented as buttock pain. Beslikas *et al*¹ in their study on five cases of osteomyelitis in children, showed that three of them had gluteal pain, one had abdominal syndrome and one presented with lumbar pain.

Our patient presented with low back pain probably because of the posterosuperior location of the lesion in the ilium. Blood investigations showed borderline increase in total count. Plain radiograph of the pelvis anteroposterior view showed an osteolytic lesion which can easily be missed if we do not correlate clinically to the point of tenderness. Hence an oblique view of the sacroiliac joint was carried out, which showed a well-defined osteolytic lesion. Since our patient was cooperative and was able to localise the area of pain, we were able to diagnose early. In younger patients and in uncooperative children, the diagnosis can be missed. Hence we advise clinicians to routinely perform oblique views of the sacroiliac joints in children who present with back pain.

Although our patient did not grow any organism, *Staphylococcus aureus* is the most common organism causing osteomyelitis in children. Other organisms are *Streptococcus*, *Escherichia coli*, *Pseudomonas* and *Salmonella*.⁵

Treatment for osteomyelitis is debridement followed by antibiotics based on the culture sensitivity. Recurrence is a common problem in these patients. Muhdi and Hamdam *et al*² have shown good results in six patients who underwent marginal wedge resection of the iliac bone for preventing recurrence.

To conclude, Brodie's abscess of the posterior ilium is very rare and can be easily misdiagnosed since the clinical presentation is not classical. Treating clinicians should keep in mind this rare possibility in children presenting with low back pain.

Learning points

- Posterior ilium is a rare site for Brodie's abscess.
- Brodie's abscess is a rare cause for low back pain.
- Pelvis and sacroiliac joint pathology should be kept in mind while evaluating low back pain.
- Clinical signs of Brodie's abscess in ilium are not classical as the pelvis is deeply seated.

Contributors All authors participated in the concept of the case report, helped in manuscript preparation and correction of the manuscript.

Competing interests None.

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