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Sacroiliitis as rare presentation of brucellosis: a case report

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Abstract

Background: Brucellosis is a zoonotic infection with diverse clinical manifestations and may present with musculoskeletal involvement. Sacroiliitis is common in adults but rare in children, often leading to delayed diagnosis.

Case presentation: We report the case of a 13-year-old boy with brucella sacroiliitis confirmed by positive serology and magnetic resonance imaging. The patient presented with prolonged low-grade fever and back pain without other classical signs of brucellosis. Plain radiography was normal, while MRI revealed sacroiliitis. He responded promptly to appropriate antimicrobial therapy.

Conclusion: This case highlights the importance of considering brucellosis in children presenting with unexplained sacroiliitis, particularly in endemic regions, and emphasizes the diagnostic value of MRI and serological testing.

Keywords: Brucellosis, Sacroiliitis, Children, Iraq

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Background

Brucellosis is an animal infection and represents a major public health concern worldwide [1]. Conventional clinical presentations are usually nonspecific and include fever, arthralgia, myalgia, fatigue, and malaise [2,3]. As none of the manifestations of brucellosis is pathognomonic, the disease may mimic many multisystem disorders [2]. Sacroiliitis is the most common musculoskeletal manifestation in adult patients, whereas it is relatively rare in children [4]. Diagnosis usually depends on serological evaluation using various agglutination tests such as the Rose Bengal test and serum agglutination test [5,6,7]. Brucella sacroiliitis in children is uncommon, and accurate diagnosis is often delayed due to vague clinical findings [1,8]. In appropriate clinical settings, particularly in endemic regions, a high index of suspicion for brucella sacroiliitis should be maintained, even when uncommon joints are involved.

Case presentation

A 13-year-old boy from Baghdad, was admitted to Al-Batool Teaching Hospital for Maternity and Children in Baquba City, Diyala Governorate, Iraq, on 29 September 2023. He presented with severe lower back pain and bilateral hip joint pain associated with marked limitation of movement. The illness began three months earlier with low-grade fever, cough, abdominal pain, and back pain. He initially received symptomatic outpatient treatment, which partially relieved his symptoms. Subsequently, his condition worsened, with progressive back pain, limitation of hip movement, inability to walk, night sweats, and noticeable weight loss. He was evaluated by multiple physicians and was initially considered to have a rheumatological disorder. Treatment provided only mild symptomatic improvement.

Figure 1: Findings of pelvic x-ray image showed minor rheumatological disorders.

Magnetic resonance imaging (MRI) of the spine and hip joints later revealed sacroiliitis (Figure 2).

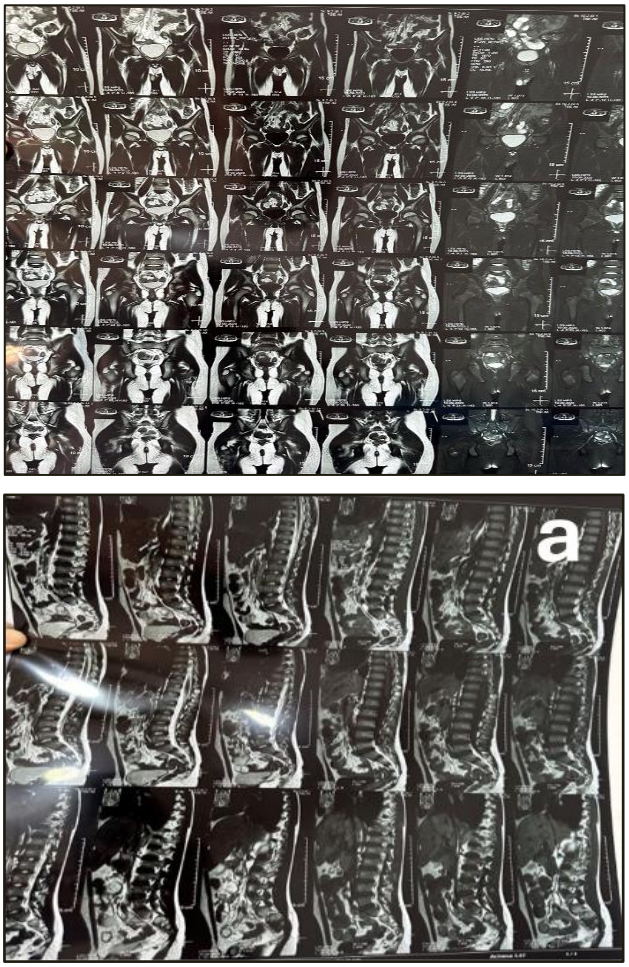

Figure 2 (a,b): Findings of magnetic resonance image showed a bone marrow edema seen on both aspects of both Sacro-iliac joints suggesting bilateral Sacroiliitis.

Non-steroidal anti-inflammatory drugs were prescribed without clinical improvement, prompting referral to our hospital. On examination, the patient was conscious and oriented. His weight was 32 kg (below the 3rd percentile) and height were 146 cm (3rd percentile). Neurological examination was normal; however, there was severe limitation of movement in both hip joints in all directions. Based on the clinical presentation and previous investigations, brucellosis was suspected. A Rose Bengal test was performed and yielded a positive result. Treatment was initiated with gentamicin (5 mg/kg/day in three divided doses for 7 days) combined with doxycycline (100 mg every 12 hours) and rifampicin (300 mg every 12 hours), to be continued for 4–6 months on an outpatient basis. The patient showed dramatic clinical improvement, with marked reduction in pain and restoration of joint mobility, and was discharged in good general condition.

Discussion

Brucellosis is a multisystem disease that may imitate various conditions, leading to misdiagnosis and increased morbidity. There is controversy regarding the most frequently involved joints, whether sacroiliac or peripheral [1,2]. Osteoarticular involvement has been reported in approximately one-quarter of pediatric brucellosis cases. Brucellosis should be considered in the differential diagnosis of children presenting with osteoarticular disorders, especially in endemic areas. Active inflammatory lesions are commonly observed in sacroiliac joints with osteolytic changes detected by MRI. Magnetic resonance imaging is considered the diagnostic modality of choice [7], particularly during the early stages of disease. In endemic regions, brucellosis should be included in the differential diagnosis of children with monoarticular involvement. Arthritis affecting the knee, ankle, and wrist generally has a benign course and responds well to appropriate therapy [7]. Conversely, sacroiliac and shoulder joint involvement requires closer attention due to a longer disease course and a higher risk of relapse [4,7]. Increased awareness and careful joint examination can reduce delays in diagnosis.

Conclusion

Brucellosis can affect multiple components of the musculoskeletal system in children. Although vertebral involvement is most common, sacroiliac and peripheral joint involvement should not be overlooked. Brucellosis must be considered in the differential diagnosis of pediatric patients presenting with arthralgia or musculoskeletal symptoms, particularly in endemic areas, to ensure early diagnosis and appropriate treatment.

Abbreviation

MRI: magnetic resonance imaging

Declaration

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Availability of data and materials

Data will be available by emailing ywsfy9348@gmail.com

Authors' contributions

Ahmed Khaleel Abed Al-karkhi1(AKAA) is the lead author who reported the case, compiled the first draft and approved the final version of it. Mohammed Abdulkader Alchalabi1 (MAA), and Jalil Ibrahim Al-ezzi (JIA) contributed in writing the case report draft. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the declaration of Helsinki. The ethical approval was obtained from the Al- Batool Teaching Hospital, Diyala Health Directorate, Ministry of Health, Iraq [Ref. No. 226925 on 10th September 2023]. Parents verbal and signed consent form was obtained.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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