CASE REPORT

Osteomyelitis of acetabulum with extension into ileum and ischium associated with gluteal muscle abscess caused by *Streptococcus milleri*

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Introduction

*Streptococcus milleri* species are found in normal oral flora, upper respiratory tract, gastrointestinal tract,6,7 and they have also been isolated from vagina. *S. milleri* organisms are associated with pyogenic infections and they either result in isolated infections or are a part of mixed pyogenic infections. Most commonly, they are associated with dental and periodontal abscess, nasopharyngeal infections, brain abscess,5,9 liver and intraabdominal abscess1,5 and lung abscess.8 Rarely, they result in musculoskeletal abscess,3 splenic abscess and pericarditis.

Case report

A 13-year-old boy was admitted for investigations on account of painful right hip and a limp of six weeks duration. On the week prior to admission, he had run an intermittent fever. There was no history of injury.

On clinical examination, the right hip movements were variably restricted and painful. To palpation, he appeared tender in the right buttock. Investigations revealed raised inflammatory markers with CRP of 138 mg/L and ESR 53 mm/h. Leucocyte count was $9.2 \times 10^9/L$ with a neutrophil count of $6.6 \times 10^9/L$. Blood cultures were negative and plain X-rays were normal. MRI of pelvis revealed a focal area suggestive of an abscess in the posterior right acetabulum (Fig. 1) with abnormal inflammatory changes extending into adjacent ileum (Fig. 2) and ischial tuberosity (Fig. 3). There were also abnormal signals in the right gluteal muscle bulk consistent with presence of an abscess. An attempt was made to perform an ultrasound guided biopsy of the pathology, which was unsuccessful.

A formal open exploration was, therefore, undertaken via a posteriorly based skin incision. On splitting, the gluteal maximus fibres and approaching the ileum, several pieces of greenish yellow material presented themselves, although there was no frank pus. The ileum bone was visualized and there was a small hole in it, approximately 3 mm in diameter. Underneath this hole, there was a small but definite abnormal cavity, approximately 1 cm size. The curettage specimen obtained from the iliac cavity, along with the abnormal greenish yellow material was sent for microscopic examination, culture and histopathological examination.

The initial diagnosis of tuberculosis was made, on the basis of operative findings, and the boy...
was commenced on anti-tuberculosis therapy. However, microscopic examination revealed the presence of pyogenic infection and eventually \textit{S. milleri} organisms were cultured from the biopsy specimen.

A 12-week course of Ceftriaxone, initially administered intravenously and subsequently orally, resulted in complete resolution of his symptoms.

**Discussion**

\textit{S. milleri} group of organisms are also referred to as \textit{S. intermedius}, \textit{S. anginosus} or \textit{S. anginosus–milleri} group. The major clinical characteristic of these organisms is their propensity for invasive pyogenic disease which separates them from other viridans streptococci. These organisms are microaerophilic and require carbon-dioxide for their normal growth. The microbiological characteristics of these organisms are; typical caramel like odour, formation of minute colonies (<0.5 mm) when cultured, possession of Lancefield antigens (A, C, F, G or none), and they exhibit variation in haemolytic reaction (α, β, or non-haemolytic), lactose fermentation and Voges-Proskauer reaction.

Infections with \textit{S. milleri} group of organisms are uncommon and they most frequently affect gums and teeth, lungs, brain, liver and other intra abdominal organs. \textit{S. milleri} is a rare cause of osteomyelitis.
and muscle abscess. The organism has been reported to cause musculoskeletal pathology like, vertebral osteomyelitis,¹⁰ septic arthritis¹⁰ and psoas abscess.⁴ These organisms are sensitive to penicillin, cephalosporin, erythromycin, clindamycin and vancomycin.²,⁹

The case reported is interesting because of its atypical presentation as well as a rare organism causing osteomyelitis of acetabulum associated with a gluteal abscess. The initial clinical presentation was suggestive of pathology around the hip joint, differential diagnosis being an irritable hip, septic arthritis of hip or a psoas abscess. The inflammatory markers and MRI scan were consistent with presence of an infective pathology involving gluteal muscles, acetabulum, ileum and ischium bones, whereas the white cell counts and the plain X-rays were normal. Surgical exploration resembled a tuberculous lesion. However, microscopic examination of tissue biopsy specimen showed presence of pus cells suggestive of pyogenic bacterial infection. Subsequent culture of the biopsy specimen confirmed the presence of S. milleri organisms which responded well to a prolonged course of antibiotics for 12 weeks.

In conclusion, this case illustrates the importance of recognising S. milleri group of organisms as a possible cause of bony osteomyelitis and pyogenic muscle abscess, as early recognition and surgical intervention coupled with prolonged antibiotic treatment is necessary for remission of the pathology.

References