

Pyogenic sacroiliitis in the immediate postpartum period: a case report and review of literature

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Abstract

Pyogenic sacroiliitis in the immediate postpartum period is an extremely rare orthopaedic emergency which requires prompt diagnosis and treatment to avoid permanent destruction of the sacroiliac joints. Herein we report a case of pyogenic sacroiliitis in the immediate postpartum period of a 25-year old woman presenting with acute onset severe lower back pain, buttock pain and inability to move her right lower limb. Prompt suspicion and imaging facilitated the diagnosis of pyogenic sacroiliitis for which she was treated with antibiotics and her pelvic joints were supported with a corset around the hip and traction applied to the right leg.

Key words: postpartum, septic arthritis, septic sacro-iliitis, asymptomatic bacteriuria, GBS

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Introduction

Lower back pain and buttock pain following labour are not uncommon symptoms and are mostly attributed to mechanical causes which settle with conservative measures and simple analgesics. However urological, orthopaedic and musculoskeletal causes should not be ignored when the symptoms are severe and alarming¹.

Pyogenic sacroiliitis in postpartum women is an extremely rare occurrence with only few cases reported and they require prompt detection and action to avoid serious and permanent destruction of the joints leading to disability. If it occurs in the immediate postpartum period diagnosis can be missed or delayed due to differential diagnoses such as visceral pain, muscle spasms, lumbar disc prolapse and the non-specific nature of the pain².

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Group B streptococcus (GBS) is a well-known cause of neonatal sepsis, maternal chorioamnionitis and postpartum endometritis. However, invasive infections like septic arthritis or infective endocarditis due to Group B streptococcus is rare without a history of pelvic instrumentation and therefore could contribute to the diagnostic dilemma³.

We report a case of pyogenic sacroiliitis due to GBS infection which presented in the immediate postpartum period.

Case

A 25-year old mother of two presented on her 4th day postpartum with acute onset severe lower back pain, right buttock pain and with inability to move her right lower limb. This was her second pregnancy and had an uncomplicated term vaginal delivery. The baby weighed 2.9 kg and did not have any complications both antenatally and postnatally.

Up until presentation her antenatal and postnatal periods had been uncomplicated specially with no symptoms or signs suggestive of an infection.

On presentation she looked ill, was afebrile, her pulse rate was 110 bpm and her blood pressure was 110/80 mmHg. Her abdominal examination did not reveal any lower abdominal tenderness, she had normal lochia and did not have a purulent vaginal discharge.

Initial neurological assessment excluded any neuro-

surgical emergencies or any abnormal neurological findings, thus suggestive of pseudo paralysis of the right lower limb due to the pain in the buttock area. Therefore, subcutaneous morphine was administered to control the pain.

At presentation, a urine full report was done which showed 50-100 pus cells/hpf with heavy bacteria/hpf which prompted the team to do urine and blood cultures and to obtain a high vaginal swab. This was complemented with a full septic screen including a full blood count and inflammatory markers.

Her full blood count showed a total WBC count of $11.48 \times 10^3/\mu\text{L}$ with neutrophil predominance while her initial c reactive protein level was 171.6 and ESR was 61.4 mm/h in the first hour.

An x-ray of the pelvis showed non-specific changes suggestive of effusion while an MRI of the lumbosacral spine ruled out acute disc herniations and inflammatory changes of the lumbosacral spine. But an MRI scan done of the bilateral hip joints showed mild widening of bilateral sacroiliac joints with joint effusion causing disruption of the joints and high-grade tears of the right iliacus and piriformis muscles (Figure).

A diagnosis of septic arthritis was made and empirically IV cefotaxime and IV metronidazole were commenced. She was managed by a multi-disciplinary team including an Obstetrician, Microbiologist, Orthopedic Surgeon, Physiotherapist and Nursing Sister. Pelvic joints were

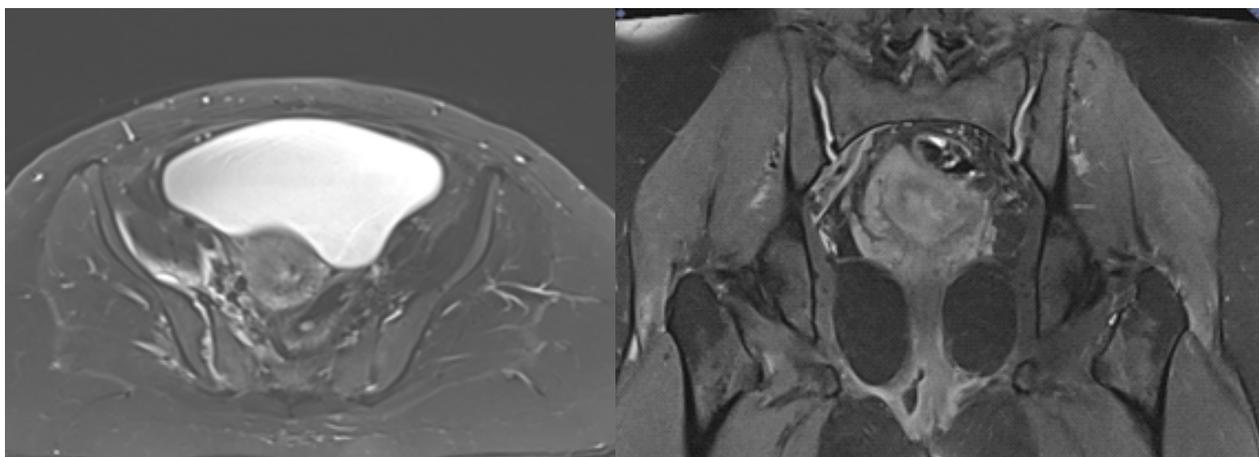


Figure. MRI scan of bilateral hip joints showing mild widening of bilateral sacroiliac joints with joint effusion causing disruption of the joints and high-grade tears of the right iliacus and piriformis muscles.

supported with a corset around the hip and traction applied to the right leg. She remained in bed for nearly one week and therefore she was treated with low molecular weight heparin on graduated compression stockings to prevent deep vein thrombosis.

Her urine culture, blood culture and vaginal swabs isolated group B β haemolytic streptococci and the antibiotic sensitivity tests showed sensitivity for the empirical antibiotics that had been commenced.

Her baby was observed by the neonatologist for possible infection, but the baby didn't develop any symptoms or signs of infection and did not require antibiotics.

With the supportive therapy and antibiotics, her condition showed remarkable clinical improvement and her markers of infection and inflammation returned to normal ranges. She was started on mobilizing physiotherapy and discharged home with oral antibiotics for one month until full recovery.

Discussion

Asymptomatic bacteriuria occurs in 2% to 10% of pregnancies and is associated with low birthweight and preterm delivery⁴. All bacteriuria in pregnancy should be treated⁵. However the current RCOG guideline does not recommend screening of pregnant women for asymptomatic bacteriuria unless the pregnant woman was found to be positive for Group B streptococcus (GBS) during her previous pregnancy and the baby did not develop any GBS disease⁶.

During pregnancy, the pelvic joints and ligaments relax and pelvic movements increase. It has been hypothesized that microscopic areas of injury on the joint surfaces produced by the changes during pregnancy such as enlargement of the uterus and childbearing are related to puerperal sacroiliitis^{1,7}.

The most common causative organisms of septic sacroiliitis are gram positive cocci; this was believed to be predominantly *Staphylococci* but a retrospective cohort study of 12 years done in 2019 has shown Group B Streptococci as the most common pathogen. *Salmonella* spp., *Pseudomonas aeruginosa* and *Brucella* spp. are other known causative organisms^{2,8-9}. Fungus or parasites can also cause this infection but it occurs very sporadically¹⁰.

The mean time to diagnose septic sacroiliitis has been reported as 43.3 ± 69.1 days in a review done¹¹. Since the symptoms at presentation are mostly non-specific, the diagnosis is dependent on confirmatory imaging¹². MRI is the more sensitive choice of imaging and may detect subtle changes such as periarticular bone marrow edema and swelling or abscesses of the adjacent soft tissues before they are seen on a CT and is therefore considered the most relevant tool for the detection of sacroiliitis¹³⁻¹⁵.

For diagnosis of septic arthritis all suspected septic joints should be aspirated and the synovial fluid examined by microscopy for the presence of crystals and microorganisms and for antibiotic sensitivity¹⁶. However, sacroiliac joint synovial fluid aspiration for diagnosis and as part of treatment is technically difficult⁸. Blood cultures may identify the causative organism even where synovial fluid culture is unrewarding¹⁷.

Mainstay of treatment for septic arthritis is prompt treatment with antibiotics together with removal of any purulent material. No consensus exists as to the duration of antibiotic therapy in infectious sacroiliitis, however a study suggested that in the case of infectious sacroiliitis caused by pyogenic bacteria it seems reasonable to propose parenteral treatment for 2 weeks followed by oral treatment for 6 weeks¹⁸.

Short-term evolution of infectious sacroiliitis is usually favourable, with a single death being observed in one study and none in the recent literature. However, a retrospective, multicenter study of 39 adults reported that long-term lumbo-gluteal pain intensifying during daytime activities as reported to persist in more than one-third of cases in the literature and in a greater proportion of cases in that particular study (33% vs. 43.5%)^{2,7,19-21}. Injection drug users however, have a higher risk of abscesses, osteomyelitis, and relapse after stopping antibiotic therapy²¹.

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