



Case report

Septic sacroiliitis in the post-partum period with haematogenous spread



Ryan Walsh*, Aoife Thornton, Loay H. Abdelnour

General Internal Medicine, Ulster Hospital, Belfast, Northern Ireland, United Kingdom

ARTICLE INFO

Article history:
Received 6 March 2021
Accepted 5 April 2021

Keywords:
Sacroiliitis
Pregnancy
Postpartum
Septic arthritis
Episiotomy

ABSTRACT

Pelvic pain is a very common gynaecological complaint especially during the puerperium. It is rarely associated with development of septic sacroiliitis or haematogenous spread to other sites within the body. The case below demonstrates a 30 year old female 10 days post-partum presenting with left hand cellulitis secondary to development of septic sacroiliitis. Her case supplements a small cohort of reports among literature identifying septic arthritis in the postpartum period, recognises the delay to diagnosis and increased morbidity of this condition.

© 2021 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

The sacroiliac joint is a relatively rare site for septic arthritis and accounts for approximately 1–2% of all cases [1]. The prevalence of septic sacroiliitis is limited by a small number of case reports; literature reviews suggest 3.4–15.6% of cases occur in pregnancy and the postpartum period [2–5]. Diagnosis of sacroiliac joint infection is often missed due to symptoms mimicking more benign disease such as sciatica or lumbar disc disease and pelvic pain is not uncommon in the postpartum period. This leads to treatment delay and risk of destruction to the joint.

During the antenatal period hormonal changes allow relaxation of sacral ligaments and increased joint laxity. This along with enlargement of the uterus and delivery of the neonate has been hypothesised to evoke microscopic damage to the joint surfaces producing sacroiliitis [6–8]. The case below presents a case of postpartum sacroiliitis associated with potential haematogenous spread of infection.

Case report

A 30 year old Caucasian female gravida 1 parity 0 presented 10 days postpartum with a tender, swollen left hand and mild sacral pain post-delivery. She had a vaginal delivery with induction of labour at term + 12 days; an episiotomy was required. Labour lasted eight hours with the last two hours in stirrups; right leg elevated.

Throughout pregnancy she attended her regular antenatal follow-up and her pregnancy progressed well without any complications.

Two weeks prior to induction of labour she developed sacral pain and pain to the lateral aspect of both hips bilaterally. Post-delivery she developed acute onset of right sided sacroiliac (SI) joint and buttock pain – 10/10 severity and unable to mobilise without assistance for two days. She was given analgesia and discharged home. There was no history of trauma, infection, surgery or intravenous drug use.

Day 5 post-delivery she developed gradual onset of pain, swelling and erythema to the dorsum of her left hand. Given her sacral pain she described off-loading pressure onto her left hand; no trauma, insect bites or recent cannulation.

Her family history was significant for rheumatoid arthritis – father, paternal uncle and paternal grandmother.

On examination the dorsal aspect of her left hand appeared grossly swollen with erythema spreading proximally from her metacarpal phalangeal joints (MCPJs) limiting the range of movement.

Hip examination revealed tenderness to her right sacroiliac joint; power 4+/5 limited by pain; sensation intact and full range of movement. No spinal tenderness or abnormal findings to left hip.

The laboratory blood results were significant for leukocytes 18.5×10^9 cells/L and CRP 347.3 mg/L. She was treated initially for left hand cellulitis with 2 g intravenous (IV) flucloxacillin. Other blood investigations showed negative antinuclear antibodies (ANA), antinuclear cytoplasmic antibodies (ANCA), immunoglobulins, complement (C3 + C4), rheumatoid factor and HLA-B27. Microbiological investigations did not yield any positive results including two blood cultures, urine culture and viral screen.

* Corresponding author.
E-mail address: rwalsh592@live.com (R. Walsh).

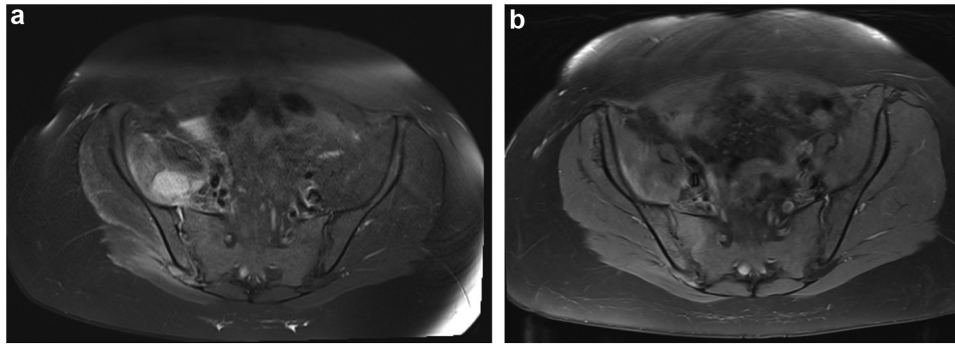


Fig. 1. (a) Post-treatment MRI coronal section imaging showing septic sacroiliitis and associated collection. (b) Post-treatment MRI coronal section imaging showing almost complete resolution of collections.

During admission her sacral pain acutely worsened and a magnetic resonance imaging (MRI) was arranged showing a large joint effusion of the right SI joint with extension into the right iliacus muscle where there was a focal 3.5×2.9 cm intramuscular collection. There was also extension through the posterior aspect of the joint with a shallow collection in the medial aspect of the right gluteus maximus measuring approximately $3.5\text{cm} \times 0.8\text{cm}$. Further intramuscular oedema was present within the right piriformis muscle with a small collection tracking over the superior aspect of the muscle. The findings were in keeping with septic arthritis of the right sacroiliac joint with intramuscular abscesses. The abscesses were continuous with the joint (Fig. 1a)

After input from the orthopaedic and interventional radiology teams her septic sacroiliitis was managed medically without aspiration or washout. She was treated with 2 g IV Ceftriaxone once daily for a total of six weeks of IV antibiotic therapy and a further 2 weeks course of oral flucloxacillin with good effect. Her episiotomy wound appeared clean and was not deemed the origin of the infection.

Follow-up MRI pelvis at one month showed interval reduction the size of the collection within the iliacus muscle and resolution of the collection within the gluteus maximus muscle (Fig. 1b). She was reviewed clinically thereafter and denied any ongoing complications of her infection.

Discussion

Septic sacroiliitis remains an unusual presentation of pelvic pain but certainly one with significant morbidity. In this case the presenting complaint was objective cellulitis of her left hand as opposed to severe pelvic pain; which had been disregarded because of a recent delivery. This highlights the importance of septic sacroiliitis as a differential needing considered in the peripartum patient. A systematic review by Carvajal-Flechas et al. showed that 59.2 % of pregnancy-associated septic sacroiliitis occurs in the postpartum period with an average onset of 9 days [3,5].

Although blood cultures did not isolate a causative bacteria which is the case for 31–77 % of reported cases, studies have suggested *Streptococcus* species as the most common causative organism in pregnancy associated septic sacroiliitis in comparison to *Staphylococcus* among the general population [5]. It is difficult to ascertain exactly whether the cellulitic appearances of her hand were a result of haematogenous spread from her hip collection or vice versa. However, given the clear timescale of events described previously, it is most likely that the cellulitic infection was a result of spread from the SI joint. In contrast, previous case reports have suggested the pathogenesis of SI joint infection to be

haematogenous dissemination with two case reports describing septic sacroiliitis from epidural catheter insertion and others suggesting skin, genitourinary tract and trauma [9–11]. Another potential source may have been the episiotomy wound, however this is less likely given clean wound appearance clinically, sudden onset of pain <24 h after delivery and lack of radiological evidence to support tracking of infection from the wound.

The choice to manage medically with IV ceftriaxone was based on previous literature and how amenable the collections were to drainage based on radiological reporting. Most cases are managed with varying antibiotic regimes/routes with an average of 6–8 weeks. In a review of 15 patients in the pregnant/postpartum period by Imagama et al. only 3 cases were managed with open drainage with a further single patient requiring a hysterectomy and oophorectomy [8]. Septic sacroiliitis remains an important differential given immunosuppression of pregnancy and hypothesised hormonal effects on joint laxity; albeit limited, literature certainly suggests pregnancy may be an independent risk factor for its development [6–8,12]. The case presented here represents another rare presentation of septic sacroiliitis with disseminated infection and haematogenous spread adding to a small but significant number of patients making septic sacroiliitis a differential to always consider in the post-partum patient presenting with non-resolving, severe pelvic pain.

Sources of funding

There were no source of funding.

Ethical approval

Not applicable, written consent obtained from patient.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Corresponding author Dr Ryan Walsh was involved in patient care, data collection, analysis, literature review and writing case.

Dr Aoife Thornton was involved in patient care and data collection.

Dr Loay Abdelnour was involved in patient care, data collection and writing of case report.

Declaration of Competing Interest

There are no conflicts of interest.

References

- [1] Mancarella L, De Santis M, Magarelli N, Ierardi AM, Bonomo L, Ferraccioli G. Septic sacroiliitis: an uncommon septic arthritis. *Clin Exp Rheumatol* 2009;27:1004–8.
- [2] Bart G, Plat M, Derouet N, Dernis E. Post-partum infectious sacroiliitis. *Med Mal Infect* 2013;43:431–3.
- [3] Hermet M, Minichiello E, Flipo RM, Dubost JJ, Allanore Y, Ziza JM, et al. Infectious sacroiliitis: a retrospective, multicentre study of 39 adults. *BMC Infect Dis* 2012;12:305.
- [4] Vyskocil JJ, McIlroy MA, Brennan TA, Wilson FM. Pyogenic infection of the sacroiliac joint. Case reports and review of the literature. *Medicine (Baltimore)* 1991;70:188–97.
- [5] Carvajal-Flechas F, Sarmiento-Monroy JC, Rojas-Villarraga A, et al. Septic sacroiliitis in the late postpartum due to *Escherichia coli*. *Rev Colomb Reumatol* 2016;23:131–6.
- [6] Liu XQ, Li FC, Wang JW, et al. Postpartum septic sacroiliitis misdiagnosed as sciatic neuropathy. *Am J Med Sci* 2010;339(3):292–5.
- [7] Engelsbel S, Swartjes JM, Schutte MF. Pyogenic sacro-iliitis, a rare cause of peripartum pelvic pain. *Eur J Obstet Gynecol Reprod Biol* 1995;62:125e6.
- [8] Imagama T, Tokushige A, Sakka A, Seki K, Taguchi T. Postpartum pyogenic sacroiliitis with methicillin-resistant *Staphylococcus aureus* in a healthy adult: a case report and review of the literature. *Taiwan J Obstet Gynecol* 2015;54:303–5.
- [9] Moros ML, Rodrigo C, Villacampa A, Ruiz J, Lapresta C. Septic shock in pregnancy due to pyogenic sacroiliitis: a case report. *J Med Case Rep* 2009;3:6505, doi:<http://dx.doi.org/10.1186/1752-1947-3-6505>.
- [10] Edelstein S, Edoute Y. Bacterial sacroiliitis probably induced by lumbar epidural analgesia. *Infect Dis Obstet Gynecol* 2003;11:105–8.
- [11] Mulvey JM. Postpartum septic sacroiliitis coincident with labour epidural analgesia. *Anaesth Intensive Care* 2008;36:875–8.
- [12] Bindal M, Krabak B. Acute bacterial sacroiliitis in an adult: a case report and review of the literature. *Arch Phys Med Rehabil* 2007;88:1357–9.