CASE REPORT

OSTEITIS CONDENSANS ILII: AN UNUSUAL CASE OF SEVERE BACK PAIN DURING PREGNANCY

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Background: Lower back pain is a common complaint in pregnancy which often impacts quality of life. An uncommon aetiology of lower back pain is Osteitis Condensans Ilii (OCI), a condition characterized by a triangular area of sclerosis of ilium adjacent to the sacroiliac joint. It is thought to be associated with pregnancy, but also affects non-pregnant women and men. We discuss a case of a 23-year-old woman, who presented during the 8th month of her first pregnancy with debilitating pain in her lower back. Several differential diagnoses were explored, including autoimmune aetiologies and pregnancy associated osteoporosis, before OCI was diagnosed via an MRI. The patient was managed conservatively with intravenous analgesics and physiotherapy, after which her pain abated gradually. On her 3rd day of admission, the patient went into premature labour and gave birth to a healthy child via vaginal delivery. Her pain resolved completely within days of delivering her baby.

Keywords: Pregnancy; Low Back Pain; Osteitis; Sacroiliac Joint

Citation: Saleh R, Arshad A, Ayaz A. Osteitis condensans ilii: An unusual case of severe back pain during pregnancy. J Ayub Med Coll Abbottabad 2021;33(1):169–71.

INTRODUCTION

Lumbopelvic pain is a common affliction during and after pregnancy, affecting around half of women during their pregnancies, and continuing to affect 25% of women post-partum.[1] The presentation of this pain varies greatly, with onset occurring from the end of the first trimester up until one month post-partum.[2] Symptoms generally peak between the 24th and 36th week of pregnancy.[3] In 93% of cases, pain resolves within 3 months of delivery.[1] The impact of lower back pain on quality of life is significant: one study showed that due to lower back pain, more than half of women suffered sleep disturbances and impaired daily living during pregnancy, with 30% of women unable to perform at least one daily activity.[3] The occurrence of pain has been linked to physiologic changes that occur during pregnancy: ligament laxity due to hormonal changes, as well as an increase in body mass and a shift in the center of gravity all contribute to additional stress on the axial skeleton.[4] Certain rare conditions associated with pregnancy, such as Osteitis Condensans Ilii (OCI), may also be the cause of the pain. As treatments for different causes of lumbopelvic pain, the cause must be correctly identified to allow for appropriate management.

First described in 1926, OCI is known to be a rare, self-limiting condition of the hip, with an estimated incidence of 0.9–2.5% of the general population.[5,6] Its presentation varies from completely asymptomatic, in cases where it is discovered as an incidental finding on radiography, to cases of severe pain. The pain experienced is usually diffusely spread over the lumbosacral back and may radiate towards the legs. In cases of unilateral lesions, the pain is experience on the side of the lesion.[7] The pain is aggravated by activity and eases with rest.[8] In some cases, pain may be refractory and cannot be managed solely through the administration of analgesics. In these cases, surgery may be required.[9]

CASE PRESENTATION

A 23-year-old G1P0+0 female presented to the ER with severe lower back pain. She had been in her usual state of health 2 weeks prior, when she gradually developed sharp pain in the lumbo-sacral region of her back that radiated bilaterally to the lower limbs and was aggravated on movement. The pain was continuous, and the debilitating nature of the pain made it impossible for her to move without assistance, affecting her activities of daily life. The pain was worse on the left side and was not relieved by over-the-counter pain medications. There was stiffness and swelling of both lower limbs, with more swelling noted on the left. The patient had no history of strenuous physical activity prior to the onset of pain. She reported some undocumented weight loss and a subjective fever; however, she was found to be afebrile on examination. She also reported a history of small joint pain, mouth sores and hair loss. For the 7 days leading up to presentation, the patient had experienced burning micturition.

The patient was otherwise healthy. Her past medical and surgical history was unremarkable, as was her family history. At the time of presentation, she was 28 weeks pregnant. As she lived in a rural setting with poor access to healthcare, she was not receiving any prenatal care, and was not taking any nutrient

supplements. She was taking Paracetamol and NSAIDs for pain relief.

On examination, the patient was a young female of narrow build and gravid abdomen, who appeared distressed. She was somewhat pale and had a normal cardiovascular, respiratory and abdominal examination. Complete examination of lower limbs was not possible due to the severity of her pain; however, her range of movement of the lower limbs was limited.

Several investigations were carried out to explore possible differential diagnoses. Anti-nuclear antibodies (ANA) and Anti-DNA tests were ordered because of the suspicion of an autoimmune condition such as Systemic Lupus Erythematosus, suggested by the symptoms of joint pain, hair loss and mouth sores. These tests were negative. To check for chronic inflammation, ESR and C-reactive protein (CRP) were tested. Both were found to be raised: ESR was 110 mm/1st hour (normal range: 0–20) and CRP was 7.42 mg/dL (normal range: 0–0.5). Vitamin D levels were tested, as low levels have been linked to joint pain. The patient was found to have Vitamin D insufficiency, with levels of 23 ng/ml (normal range: >30). To rule out iliofemoral deep vein thrombosis (DVT), D-dimer was tested, and was found to be raised at 2.7mg/L (normal range: <0.5 mg/L).

Imaging was also carried out to ensure that the pregnancy was healthy, and to further clarify the diagnosis. An ultrasound showed a single alive intrauterine foetus, corresponding to 28 weeks and 5 days of gestation, noting oligohydramnios. A doppler ultrasound was done, in which both common femoral veins, superficial femoral and popliteal veins appeared non-distended and compressible. No evidence of iliofemoral DVT was found. An MRI of the pelvis was carried out to look for structural abnormalities, and revealed abnormal hyperintense signals in the iliac part of left and right sacroiliac joints on Short-TI Inversion Recovery (STIR) sequences, with more prominence of the hyperintense signals on the left side (red arrows on Figure 1). These findings suggested Osteitis Condensans Ilii. The STIR images also showed focal muscle oedema at origin of left obturator externus muscle, and otherwise unremarkable bilateral sacroiliac and hip joints.

Based on these investigations, a diagnosis of Osteitis Condensans Ilii was made.

The patient was admitted for observation and symptomatic management. The pain management team was taken on board, and after careful consideration, an infusion of Nalbuphine was administered intravenously to address the patient's complaint of pain. Physiotherapy was also carried out daily. Vitamin D was replaced in the patient to treat her Vitamin D insufficiency. A course of antibiotics was also administered to address the patient's secondary complaint of dysuria, which was the result of a UTI.

The patient showed gradual improvement on intravenous analgesics, although she was bedridden for the first 3 days of admission due to the severity of the pain. On her 3rd day of admission, patient went into labour. She gave birth to a baby girl at 29 weeks and 3 days of gestation through spontaneous vaginal delivery, with no complications. The baby was healthy, though underweight, and was kept in the NICU due to prematurity of delivery. The patient's pain continued to improve post-partum, at a quicker rate than previously, and the range of movement of her lower limbs increased. On her 2nd day postpartum, the patient was able to stand independently, and was ambulating to and from the washroom with support. She reported weakness in her lower limbs, likely due to disuse atrophy. Her pain had completely resolved by postpartum day 2. The patient was recovering from her delivery well and so was weaned off the intravenous analgesic and was discharged the next day, after being advised to continue physiotherapy and to take nutrient supplements.

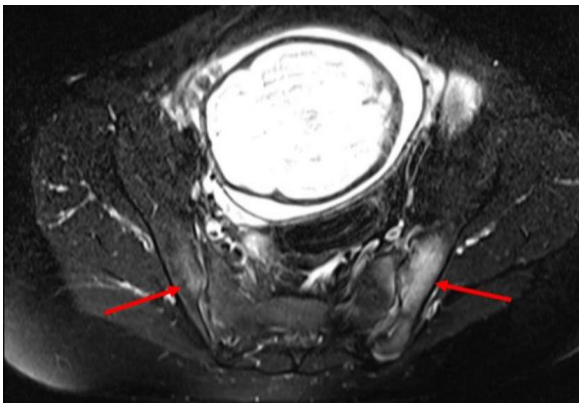

Figure-1: MRI STIR image showing hyperintensity in ilium, representing sclerosis

DISCUSSION

Osteitis Condensans Ilii (OCI) is a condition characterized by a triangular area of sclerosis of the ilium, directly adjacent to the sacroiliac joint. A diagnosis is established based on radiographic findings. The majority of findings tend to be on both sides of the sacroiliac joint, with studies reporting 76.5–87.5% of cases to be bilateral.[8,10] The sacroiliac joint itself is not affected in OCI, with no joint erosions or joint space narrowing found. HLA antigens are usually found to be negative, and presence of inflammatory markers in the blood are variable. Diagnosis is confirmed through the exclusion of other similarly presenting pathologies, such as sacroiliitis secondary to ankylosing spondylitis, as there are no unique features in the presentation of OCI.

Osteitis condensans ilii is known to occur most commonly in women of a childbearing age, particularly those who are multiparous.[11] However, is has been

known to affect men as well.[6,7] The exact aetiology of OCI is unknown, although several hypotheses have been explored. It has been suggested that OCI might be caused by mechanical stress across sacroiliac joint, which is common in pregnancy. An alternative hypothesis was that the sclerosis of the ilium was due to ischemia, due to pressure out on the abdominal aorta by the gravid uterus.[6] However, these possible aetiologies do not explain the occurrence of OCI in nulliparous women and men. Osteitis condensans ilii has also been identified in patients with a history of chronic UTIs, and so it was suggested that OCI could be caused by a spread of infection from the kidneys or ureters to the ilium via nutrient foramina.[7] None of these hypotheses have yet been conclusively proven.

A small number of symptomatic OCI cases have been described in the literature. We found 4 such case studies were found to be described in English.[12–15] All four cases described the symptom of chronic back pain in young women (aged 24–30). One of the patients described had experienced similar pain in the past during an earlier pregnancy, which had spontaneously resolved. The time between onset of symptoms and presentation varied between 2 months to 2 years. In two cases, a radiograph of the pelvis was obtained and in the other two cases, an MRI was carried out. Imaging in all these cases revealed bilateral sclerosis of the ilium. Treatment in all cases was conservative, with three patients undergoing physiotherapy, one of whom was also prescribed analgesics on an as-needed basis. All three of these patients made an adequate recovery. The fourth patient was prescribed analgesics and rest, and her outcome was not described.

The presentation of the patient described in our case study was somewhat unique. Our patient presented to us within 10 days of the onset of symptoms, complaining of severe lower back pain. The relatively shorter time to presentation could be attributed to higher intensity of pain in the case of our patient, as her daily activities were significantly affected, and she was bedridden due to the pain. Considering the potential aetiologies of OCI, the increased severity of her pain may be linked to the fact that she was pregnant and had a UTI, both of which are potentially independent causes of OCI.

As per the American Radiology Association's guidelines on imaging in pregnancy, an MRI was performed to identify the cause of the pain. The MRI showed OCI of the left and right ilium, with abnormal signals visualized more on the left side. These findings were reflected in the patient's presentation, as she had pain bilaterally, with more pain on the left side. The absence of any other pathology on imaging, which would suggest another cause of the pain, confirmed OCI as our diagnosis.

Our patient's pain resolved spontaneously shortly after delivery of her child and upon conclusion of her treatment for her UTI. Pain caused by OCI has been known to remit upon conclusion of pregnancy. However, it has also been known to recur later, often upon subsequent pregnancies. As a result, it is important to convey this information to patients of OCI.

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Submitted: August 14, 2020	*Revised: August 31, 2020*	*Accepted: December 13, 2020*

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