Case Report / Olgu Sunumu
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Low Back Pain Due to the Osteitis Condensans Ilii

Osteitis Kondensans İlii'e Bağlı Bel Ağrısı

Ümit Seçil Demirdal, Alpay Haktanır*, Fatima Yaman**
Izmir Katip Celebi University Faculty of Medicine, Physical Medicine And Rehabilitation Department, İzmir, Turkey
**Afyon Kocatepe University Faculty of Medicine, Radiology Department, Afyonkarahisar, Turkey*
***Afyon Kocatepe University Faculty of Medicine, Physical Medicine and Rehabilitation Department, Afyonkarahisar, Turkey*

Summary

Osteitis Condensans Ilii (OCI) is a rare condition causing low back pain. It is generally seen in women related to pregnancy. Well defined triangular sclerotic area on the iliac part of the sacroiliac articulation can be seen on x-rays. The most accepted hypothesis is the extra mechanical loading of the sacroiliac joints leading to sclerosis during the pregnancy. The differential diagnosis between mechanical and inflammatory disease in patients with low back pain is usually difficult and the presence of sclerosis may be confusing. OCI is a benign form of sclerosis, not a form of inflammatory lesions. A case of woman with low back pain due to the OCI is presented. Physical and neurological examinations are unremarkable. The radiograph of the pelvis shows bilateral-symmetrical sclerosis localized to the lower part of the sacroiliac joints. This case report reviews the literature and mentions the main features and differentional diagnosis of OCI. (Turkish Journal of Osteoporosis 2013;19: 48-51)
Key words: Back pain, osteitis condensans ilii, pregnancy

Özet

Osteitis Kondensans Ilii (OKI), bel ağrısına yol açan nadir nedenlerinden biridir. Genellikle gebelikle ilişkili olarak kadınlarda görülür. Direkt grafilerde sakroiliak eklemin iliak parçasında iyi tanımlanabilen üçgen şekilli skleroz görülür. En çok kabul edilen görüş gebelik boyunca sakroiliak eklemlerde oluşan ekstra yüklenmenin skleroza yol açmasıdır. Bel ağrısı olan hastalarda mekanik ve inflamatuvar hastalıkların ayrıcı tanısının yapılması genellikle zordur ve skleroz varlığı kafa karıştırıcı olabilir. OKI sklerozun benign bir formudur, inflamatuvar bir formu değildir. Burada OKI 'e bağlı bel ağrısı olan bir kadın hasta sunulmuştur. Fiziksel ve nörolojik muayene dikkate değer değildir. Pelvis grafisinde sakroiliak eklemlerin alt kısmında bilateral simetrik skleroz görülmektedir. Bu olgu sunumu literatürü gözden geçirmekte ve OKI'nin temel özelliklerini ve ayrıcı tanısını vurgulamaktadır. (Türk Osteoporoz Dergisi 2013;19: 48-51)
Anahtar kelimeler: Bel ağrısı, osteitis kondensans ilii, gebelik

Introduction

Osteitis Condensans Ilii (OCI) is a rare condition causing axial back pain. Because the roentgenographic appearance is typical, the diagnosis is mainly radiological. The auricular part of ilium is involved and well defined triangular sclerotic area on the iliac part of the sacroiliac articulation can be seen on x-rays (1).

OCI affects predominantly females, especially during or following pregnancy. On the other hand, this benign condition can also be seen in males or nullipars. The pathophysiology of OCI is unclear. The most common accepted theory, although not proven, is the mechanical stress of pregnancy. But it is still unknown that how males and nulliparous females are affected (2-4).

This condition is not an inflammatory form of back pain but sclerosis causes to revise the diagnosis for inflammatory lesions (2). The differentiation of mechanical and inflammatory conditions in patients with low back pain is usually confusing so the familiarity of OCI will simplify the diagnosis.

In the present report, we described a thirty-two year old female with low back pain due to the OCI and we aimed to review the literature and remind the OCI as a cause of back pain.

Case Report

A thirty-two year old female presented with a two and a half year history of low back pain. The symptoms started during the

Address for Correspondence/Yazışma Adresi: Ümit Seçil Demirdal MD, İzmir Katip Celebi University, Faculty of Medicine, Physical Medicine and Rehabilitation Department, İzmir, Turkey
Phone: +90 232 243 43 43 **E-mail:** secilbabaoglu@yahoo.com **Received/ Geliş Tarihi:** 11.05.2013 **Accepted/Kabul Tarihi:** 20.06.2013

postpartum period of her second pregnancy. She had never back pain during pregnancy. The onset of the pain was periodic and then became constant. She described the pain was aggravated by walking, standing or sitting for a long time. On the other hand, the pain was relieved during resting periods or lying in the supine position. She had never complained of any paresthesia or weakness in her legs but she described that the pain was intermittently radiated down the posterior side of her left thigh. She had no family history about joint disorders.

On the physical examination, her gait was normal. No significantly abnormal posture was observed. Range of motions of lumbar spine were normal, flexion were slightly painful. No spinal tenderness of spinal processes was found on palpation. She could demonstrate a straight leg raise up to 90 degrees on both sides. Laseque, FABER (flexion, abduction, external rotation of ipsilateral hip) and Mennel tests were bilaterally negative. The results of the modified lumbar Schober test and chest expansion measurement were in normal limits. The neurological examination consisting muscle power, sensation, and reflexes was totally normal. In the laboratory examination, blood investigations were all in normal limits. Laboratory findings were summarized in Table 1. Urinary investigation was also normal.

The anteroposterior plain radiograph of the pelvis shows symmetrical dense radiopaque condensation localized to the lower part of the sacroiliac joints (Figure 1). There is no evidence of narrowing or irregularity in the joint space on both sides. Magnetic resonance imaging (MRI) of sacroiliac joints confirms the symmetrical triangular area of sclerosis in the iliac part of the sacroiliac joints (Figure 2).

To identify the differential diagnoses of sclerosis, serological tests including brucella, salmonella, and chlamydia were performed. The results of all tests were negative. To exclude sclerosis due to the hyperparathyroidism, level of serum parathormone was also tested and found in normal reference range. Magnetic resonance imaging (MRI) of the lumbar spine was performed to exclude lumbar herniation.

Based on the clinical, laboratory and radiological examination, the low back pain was considered as secondary to the OCI. Conservative therapy with non-steroidal anti-inflammatory drugs and performing exercises (strengthen of lumbar, pelvic girdle and abdominal muscles, stretching and posture exercises) was administered. The severity of pain was decreased gradually. The patient gave informed consent to share the history, examination and laboratory findings, and also management procedures.

Table 1. Laboratory Parameters with normal reference range

	Result	Reference range
Haemoglobin (g/dl)	13.7	12-17.0
White cell count (x10^3/u)	8.33	4.0-10.0
Red blood count (x10^6/u)	4.46	3.80-6.00
Platelet count (x10^3/u)	246	160-450
Glucose (fasting) (mg/dl)	91.7	70-110
Urea (mg/dl)	34.7	10-50
Creatinine (mg/dl)	0.64	0.6-1.3
Uric asid (mg/dl)	4.3	3.4-7.0
Alkaline Phosphatase (U/L)	56	45-129
Aspartate transaminase (AST) (U/L)	26.4	0-34
Alanine transaminase (ALT) (U/L)	18.5	0-49
Calcium (mg/dl)	9.59	8.3-10.6
Phosphate (mg/dl)	3.78	2.7-4.5
C-Reactive protein (mg/dl)	0.553	0-0.8
Sedimentation (mm/hour)	15	1-15
Free tri-iodothyronine (f T3) (pg/mL)	3.47	1.8-4.6
Free thyroxine (fT4) (ng/dL)	1.43	0.89-1.80
Thyroid stimulating hormone TSH (uIU/mL)	2.97	0.27-4.20

Discussion

Pregnancy related low back pain is a common problem. Half of the pregnant women complain about low back pain at a point during their pregnancies or during the postpartum period. OCI has been considered as one of the causes of low back pain related with pregnancy (5). Today, it is known that OCI is mainly

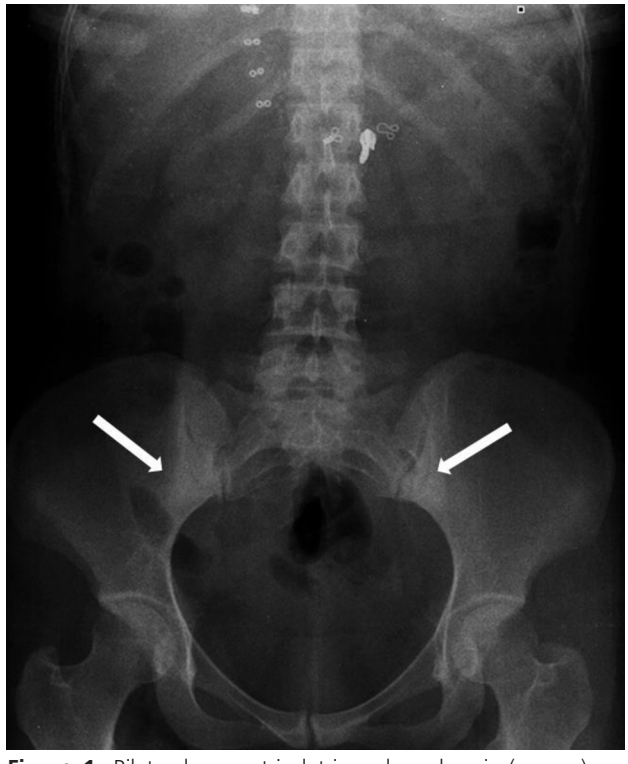

Figure 1. Bilateral-symmetrical triangular sclerosis (arrows) on the iliac aspect of the sacroiliac joints on the anteroposterior view of lumbosacral spine

seen in women who have given birth but it also affects men and women without pregnancy (2). The presented case was about a female patient with low back pain began after postpartum period of her second pregnancy.

The pathophysiology of OCI has not been totally identified. The most accepted hypothesis is the mechanical loading of the sacroiliac joints leading to sclerosis. Mechanical stress of pregnancy itself may cause OCI or uterus may compress the abdominal aorta causing ischemia and sclerosis. However the condition also affects men and women without pregnancy. Mechanical changes due to the pregnancy were not sufficient to explain why OCI can be seen in men or nullipars (6).

OCI is usually considered as a self-limiting condition. The major clinical feature of the condition was reported as low back pain. The pain may radiate down to the posterior thighs in a non-radicular form. Low back pain has mechanic character, aggravated by activity and relieved with rest. There was no night pain (7). On the other hand, Jenks et al. (8) reported presence of back pain was not different from the age-matched controls. Compatible with the previous literature, our patient had low back pain sometimes radiated down to the posterior side of her left thigh. The lumbar MRI of the patient was normal therefore radicular pain was not considered. On physical examination, the patients with OCI may have lumbar spasm and/or increased lumbar lordosis. They have occasionally positive FABER test and/or negative straight leg raise tests. Sacroiliac tests have been found to be negative (2,7). On the other hand, tenderness over the sacroiliac joints or tenderness during the sacroiliac compression tests have been found to be positive in the previous studies (7,8). The case presented here had no lumbar spasm, no positive FABER, straight leg raise and /or sacroiliac tests.

Figure 2. Hypointense area related with bilateral subcortical sclerosis on iliac bones (stars) on T2 weighted and contrast enhanced coronal images of magnetic resonance

OCI is a primarily a radiological diagnosis. On x-rays, it is usually bilateral-symmetrical triangular sclerosis on the iliac aspect of the sacroiliac joints. But it may be also unilateral. The sclerosis can be seen from inferior of the bone to the auricular part of the ilium. The joint space is preserved. No erosion or joint-space narrowing can be seen (8-10). The typical bilateral-symmetrical triangular sclerosis was seen on x-ray of the patient presented here. There was no irregularity or narrowing in joint space.

The diagnosis of OCI has to be supported with the differential diagnosis (9). The differential diagnosis of OCI is sacroiliitis, seronegative spondyloarthropathies-especially ankylosing spondylitis (AS), lumbar or piriformis strain, ischio-gluteal bursitis, renal osteodystrophy, lymphoma, Paget's disease, primary hyperparathyroidism, and metastatic diseases (2). Studies showed the differences between AS and OCI (11-13). Regard to the clinical features, AS is common in men while OCI is common in women. AS can also be seen in women but there is no specific correlation with pregnancy. The pain experienced in OCI has mechanic character while in AS has inflammatory character (aggravated by rest and relieved with activity, accompanied with night pain). Spine involvement, erosion of sacroiliac joints and narrowing in sacroiliac joint space are also present in AS but not in OCI. Sclerosis is seen in both of the diseases but it is well defined in OCI whereas poorly defined in AS (6,14). In laboratory examinations, the level of acute phase reactants (APR) may be found higher in inflammatory diseases whereas these are usually within normal limits in OCI (9). Furthermore, synovitis of lower extremities with inflammatory back pain or inflammatory bowel disease and/or psoriasis, migratuar gluteal pain, enthesopathy, and positive family history were in favor of seronegative spondyloarthropathies (15).

The presented case was a woman in reproductive ages. The low back pain she described was related with the pregnancy and the characteristic of the pain was not inflammatory. She had never experienced of arthritis, enthesopathy or any dermatological disease. In laboratory examination, the levels of APR were in normal ranges. Also we found the blood levels of kidney function tests, parathormone, calcium, phosphate, and alkaline phosphatase were in normal range so we can eliminate renal osteodystrophy, primer hyperparathyroidism or Paget's disease. On X-ray of pelvis or MRI images of sacroiliac joints, there was no erosion or joint space narrowing.

The management of OCI is mainly conservative. Conservative therapy includes analgesics, non-steroidal anti-inflammatory drugs and physical therapy. Cases with severe pain and resistant to conservative therapies may undergo to the local injections to reduce pain (2,9). Surgical resection in two patients has been reported in only one literature (16). Our case showed satisfactory recovery with non-steroidal anti-inflammatory drugs and performing exercises. There was no need neither injection nor surgery.

Conclusion

In conclusion, OCI is a benign condition seen after pregnancy or in postpartum period in women with low back pain. Typical radiological appearance of OCI that is sclerosis on the iliac part of the sacroiliac articulation may cause confusion with sacroiliitis from other disorders like ankylosing spondylitis. Conservative treatment with analgesics and physiotherapy are the mainstay of management in OCI.

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