

## Review Article

# Osteitis Condensans Ilii – Rare and Enigmatous Cause of Low Backache in Pregnancy and Post Partum Period

Nair N<sup>1</sup>, Aggarwal P<sup>2</sup>, Gupta N<sup>3</sup> and Gupta S<sup>2\*</sup><sup>1</sup>Department of Radio-Diagnosis, All India Institute of Medical Sciences, India<sup>2</sup>Department of MS Obstetrics & Gynecology, Safdurjung Hospital, India<sup>3</sup>Department of Medicine, University College of Medical Sciences and GTB Hospital, India**\*Corresponding author:** Gupta S, Department MS Obstetrics & Gynecology, Safdurjung Hospital, Rohtak, India**Received:** April 05, 2016; **Accepted:** May 05, 2016;**Published:** May 09, 2016**Abstract**

Low back ache is a common feature among postpartum females. There may be various causes of the same. Some of the causes include - post epidural anesthesia, degenerative spine disease or muscular pain. Osteitis condensans ilii is also a rare cause of post pregnancy low back pain. It is under recognized entity and thus the idea to review the topic.

**Keywords:** Osteitis; Post partum; Condensans; Ilii; Back pain**Introduction**

Osteitis Condensans Ilii (OCI) is an uncommon cause of backache predominantly affecting females during pregnancy or in the post partum period. Mechanical stress and ligamentous laxity during pregnancy is attributed to be the cause behind OCI by many authors [1,2]; however it fails to explain its occurrence in males and nulliparous females [3-5].

Inflammatory sacroiliitis is the major differential consideration for this entity due to common radiological finding of sclerosis involving the sacro iliac joints. However knowledge of key radiological features of OCI permits easy diagnosis and differentiation from sacroiliitis. It is important for clinicians especially rheumatologists to make this distinction to avoid over investigation and choose the correct therapeutic options.

This review highlights the salient features of OCI and discusses the differential diagnosis with emphasis on sacroiliitis with a brief assessment of current therapeutic options.

**Discussion**

Low backache during pregnancy and post partum period is a common debilitating problem affecting almost half of the concerned population at some point of time. The magnitude of this problem can be gauged by the fact that one third of affected women claim that the back pain is severe enough to affect their day-to-day activities; in some cases, even rendering them unable to work [1].

OCI is usually considered as a benign self-limiting condition with its major clinical presentation being low backache of mechanical character i.e., aggravated by mechanical activity and relieved with rest. The back pain is often described by patients to radiate down to the posterior thighs in a non-radicular form.

The pathophysiology of OCI has still not been fully established with the most commonly accepted reasoning being that the mechanical stress of pregnancy itself or uterus causes compression of abdominal aorta resulting in bony remodeling due to ischemia and sclerosis [6]. However this hypothesis fails to explain the occasional

occurrence of this entity in males and nulliparous females along with unilateral occurrence of OCI in some cases. It has been postulated however that mechanical stress due to other causes may be the cause in this group of patients [7].

Physical examination findings include lumbar spasm with/without associated lumbar lordosis. They have occasionally positive FABER test and/or negative straight leg raise tests. Tenderness over sacroiliac joints on compression is usually absent although it may be seen occasionally [3,8,9].

The diagnosis of OCI is essentially radiological with plain radiographs of pelvis classically revealing triangular shaped sclerosis (with base pointing inferiorly) involving the iliac aspect of the sacroiliac joints in a bilaterally symmetrical fashion with preserved sacro iliac joint spaces and articular margins [10-12]. Oblique views of the sacroiliac joint are considered to be superior in establishing the typical radiological appearances more reliably. These radiological features are not constant and can vary or even resolve with time [13]. In addition, supportive laboratory findings include normal inflammatory parameters, negative HLA-B27 antigen, normal bone scan, and no bone destruction or erosion [3,14].

A host of differential considerations which can present with similar complaints need to be considered. These include sacroiliitis, seronegative spondyloarthropathies, lumbar or piriformis strain, renal osteodystrophy, lymphoma, ischio-gluteal bursitis, Paget's disease, and primary hyperparathyroidism [3].

Ankylosing Spondylitis (AS) and other inflammatory sacroiliitis constitute the major differential consideration. AS is common in men and when occasionally seen in women, it does not show any significant association with pregnancy. The mechanical character of backache in OCI starkly contrasts with the inflammatory character of back pain in AS i.e., aggravated by rest and relieved with activity with frequent night pains. Radiological findings in AS permitting easy differentiation include narrowing and erosion of sacroiliac joints along with vertebral column involvement [10,15,16]. Sacroiliac joint sclerosis, usually bilaterally symmetrical in nature, is the common radiological finding in the two entities. The sclerosis in OCI is well

defined and triangular in shape and purely involves the iliac side of the SI joint. In AS, however, the articular sclerosis is ill defined and is seen in both iliac and sacral aspects of the SI joint [7,17].

Laboratory investigations reveal high levels of inflammatory markers in the acute phase of sacroiliitis whereas they are usually normal in OCI [18]. Additionally concurrent occurrence of lower extremity synovitis, enthesopathy, inflammatory bowel disease, psoriasis, migratory gluteal pain and positive family history merit consideration of seronegative spondyloarthropathies [19]. Normal levels of renal function tests, parathormone, calcium, phosphate, and alkaline phosphatase help rule out other differentials like renal osteodystrophy, primary hyperparathyroidism or Paget's disease.

The management of OCI is mainly conservative comprising of analgesics, non-steroidal anti-inflammatory drugs, steroid injections and physiotherapy. Some refractory cases have even required surgery including osteitic iliac bone resection and sacroiliac arthrodesis [8,20,21].

## Conclusion

OCI is a benign self limiting cause of backache mostly seen in young women during or after pregnancy. Correct diagnosis if this entity primarily based on characteristic radiographic findings and supported by laboratory parameters helps in differentiation from other inflammatory sacroiliitis and seronegative spondylarthropathy. Primary care physicians, gynecologists, orthopedicians and other specialists need to be aware of the radiological features of this entity to avoid misdiagnosis and risk of over-investigation with MRI etc. which may unnecessarily compound patient anxiety and escalate healthcare costs.

## References

- Ostgaard HC, Andersson GB, Schultz AB, Miller JA. Influence of some biomechanical factors on low-back pain in pregnancy. *Spine (Phila Pa 1976)*. 1993; 18: 61-65.
- MacLennan AH, Nicolson R, Green RC, Bath M. Serum relaxin and pelvic pain of pregnancy. *Lancet*. 1986; 2: 243-245.
- Mitra R. Osteitis Condensans Ilii. *Rheumatol Int*. 2010; 30: 293-296.
- Resnick D. Disorders of other endocrine glands and of pregnancy. Resnick D. In: editor *Diagnosis of bone and joint disorders*. Philadelphia: WB Saunders. 1995: 2089-2092.
- Nykoliation JW, Cassidy JD, Dupuis P. Osteitis condensans ilii- a sacroiliac stress phenomenon: A report of a case. *J Can Chiropr Assoc*. 1984; 28: 209-211.
- Demirdal UC, Haktanir A, Yaman F. Low Back Pain Due to the Osteitis Condensans Ilii. *Türk Osteoporoz Dergisi*. 2013; 19: 48-51.
- Vadivelu R, Green TP, Bhatt R. An uncommon cause of back pain in pregnancy. *Postgrad Med J*. 2005; 81: 65-67.
- Shipp FL, Haggart GE. Further experience in the management of osteitis condensans ilii. *J Bone Joint Surg Am*. 1950; 32: 841-847.
- Jenks K, Meikle G, Gray A, Stebbings S. Osteitis condensans ilii: a significant association with sacroiliac joint tenderness in women. *Int J Rheum Dis*. 2009; 12: 39-43.
- De Bosset P, Gordon DA, Smythe HA, Urowitz MB, Koehler BE, Singal DP. Comparison of osteitis condensans ilii and ankylosing spondylitis in female patients: clinical, radiological and HLA typing characteristics. *J Chronic Dis*. 1978; 31: 171-181.
- Singal DP, De Bosset P, Gordon DA, Smythe HA, Urowitz MB, Koehler BE. HLA antigens in osteitis condensans ilii and ankylosing spondylitis. *J Rheumatol Suppl*. 1977; 3: 105-108.
- Hamill CL. Spinal and pelvic manifestation of rheumatoid arthritis and the spondyloarthropathies. Dee R, Hurst LC, Gruber MA, et al, editors. In: *Principles of orthopedic practice*. New York: McGraw Hill. 1997: 1373-1379.
- Numaguchi Y. Osteitis condensans ilii, including its resolution. *Radiology*. 1971; 98: 1-8.
- Rodríguez-Pla A, Moreno Muelas JV, Urgell JR, Benach JO, Roldós EA. Osteitis condensans Ilii: a cause of low back pain? A case-controlled, retrospective study. *J Musculoskelet Pain*. 2004; 12: 65-70.
- Olivieri I, Ferri S, Barozzi L. Osteitis condensans ilii. *Br J Rheumatol*. 1996; 35: 295-297.
- Olivieri I, Gemignani G, Camerini E, Semeria R, Christou C, Giustarini S, et al. Differential diagnosis between osteitis condensans ilii and sacroiliitis. *J Rheumatol*. 1990; 17: 1504-1512.
- Thompson M. Osteitis condensans ilii and its differentiation from ankylosing spondylitis. *Ann Rheum Dis*. 1954; 13: 147-156.
- Cidem M, Capkin E, Karkucak M, Karaca A. Osteitis condensans ilii in differential diagnosis of patients with chronic low back pain: a review of the literature. *Mod Rheumatol*. 2012; 22: 467-469.
- Dougados M, van der Linden S, Juhlin R, Huitfeldt B, Amor B, Calin A, et al. The European Spondyloarthropathy Study Group preliminary criteria for the classification of spondyloarthropathy. *Arthritis Rheum*. 1991; 34: 1218-27.
- Servodio Iammarrone C, Grillo G, Lalla E, Fazioli F. Osteitis condensans ilii: therapy and diagnostic problems. Presentation of a case study]. *Chir Organi Mov*. 1989; 74: 101-107.
- Rendich RA, Shapiro AV. Osteitis condensans ilii. *J Bone Joint Surg*. 1936; 18: 899-908.