CASE REPORT

Chronic Low Back Pain Associated with Bertolotti's Syndrome: A Case Report

Niharika Prasad[1], Manchikanti Venkatesh[2], Kopuri Ajay Abishek[3]

[1]Assistant Professor, Department of Radiology, Dr. D.Y. Patil Medical College, Hospital & Research Center, Pune, Maharashtra, [2]Assistant Professor, Department of Radiology, Narayana Medical College, Nellore, Andhra Pradesh, [3]Junior Resident, Department of Radiology, Katuri Medical College, Guntur, Andhra Pradesh, India

Corresponding author: Dr. Manchikanti Venkatesh, Department of Radiology, Narayana Medical College, Nellore, Andhra Pradesh, India

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A B S T R A C T

Introduction: Bertolotti's syndrome is a congenital variant with an enlarged transverse process of the L5 lumbosacral transition vertebra, which articulates or fuses with the sacrum or Ilium.

Case report: We report a case of bertolotti syndrome who presented with low back pain since two months not relieved by rest or medications. A plain computed tomography (CT) of the lumbosacral spine showed lumbo-sacral transitional vertebra and enlarged transverse process articulating with the right sacral ala. MRI showed STIR hyperintensities- representing focal edema in the region of the pseudoarthrosis.

Conclusion: It is important to recognise this entity early by imaging which confirms the diagnosis and severity of inflammation and further providing a clue for management.

Keywords: Chronic Low Back Pain, Bertolotti's Syndrome

INTRODUCTION

Lumbosacral transition vertebrae are congenital spinal anomalies which include sacralization of the lowest lumbar segment or lumbarization of the superior most sacral segment of the spine. This may be a commonly missed causative factor for low back ache. Patient's symptoms may arise from abnormal bony articulation, contralateral facetal instability or neurological compression due to hypertrophy of the transverse process. This abnormality has been classically identified with the aid of lateral and Ferguson radiographs of the lumbar spine.[1]

CASE REPORT

A thirty-two year old male presented with low back pain since two months not relieved by rest or medications. There was no history of trauma or surgery. On examination there was mild restriction of movements but no focal tenderness or swelling. A routine antero-posterior and lateral radiograph of the lumbar spine was performed which showed a lumbosacral transition vertebra with enlarged right transverse process. Bilateral sacroiliac joint appeared normal. Curvature of the spine was normal. There was no abnormal disc space reduction. A plain computed tomography (CT) of the lumbosacral spine showed lumbo-sacral transitional vertebra and enlarged transverse process articulating with the right sacral ala (Figure 2). There was no evidence of fracture. Plain MRI showed STIR hyperintensities- representing focal

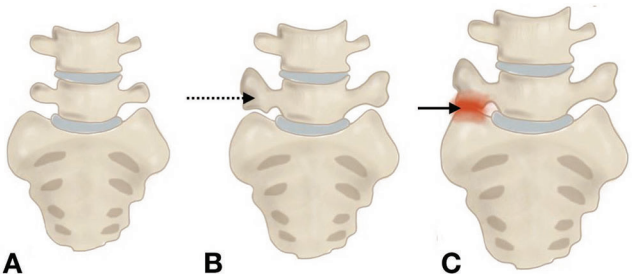

Figure-1: Illustrated image (A)showing normal transverse process of L5 vertebra, the enlarged transverse process articulating with the right sacral ala (B) and image (C) showing edema around the pseudoarthrosis, suggestive of Bertolloti syndrome.

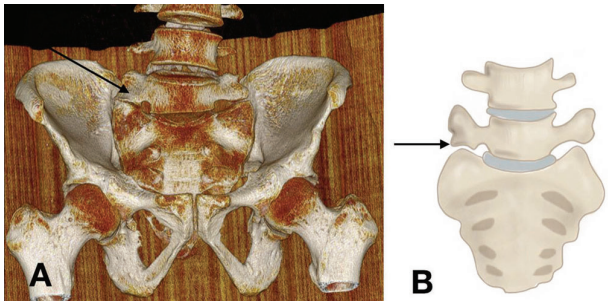

Figure-2: 3D reformatted CT image (A) showing the classic appearance of LSTV type 2a of right transverse process of L5 vertebra. Illustrated image (B) showing the enlarged transverse process articulating with right sacral ala.

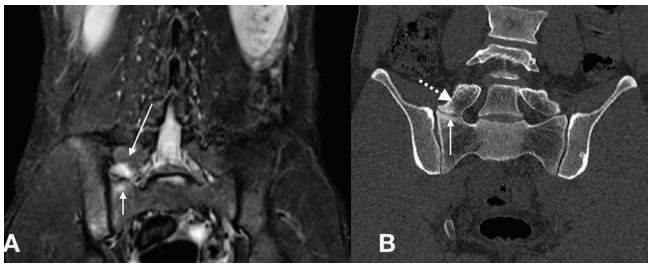

Figure-3: Coronal STIR image (A) showing hyperintensities in the right transverse process and right sacral ala (short arrow) around the pseudoarthrosis formed between enlarged right transverse process of L5 vertebra and the sacrum. Coronal CT bone window (B) showing enlarged right transverse process forming pseudoarthrosis with right sacral ala suggestive of LSTV.

edema in the region of the pseudoarthrosis. (Figure 3)

DISCUSSION

Bertolotti first described an association between lumbosacral transition vertebrae and low back pain in 1917. It is important to accurately identify and number the affected segment. It is also vital to recognize transitional vertebrae so that the wrong vertebral level is not operated upon. The use of whole-spine images as well as defining geometric relationships between sacrum and lumbar vertebra increase the reporting accuracy. Four types of transitional vertebrae have been described by Castellvi et al. Type I includes unilateral (Ia) or bilateral (Ib) dysplastic transverse processes. Type II demonstrates incomplete unilateral (IIa) or bilateral (IIb) lumbarization/sacralization with an enlarged transverse process that has a diarthrodial joint between itself and the sacrum. Type III LSTV shows unilateral (IIIa) or bilateral (IIIb) lumbarization/sacralization with complete osseous fusion of the transverse process(es) to the sacrum. Type IV involves a unilateral type II transition with a type III on the contralateral side.[2] Routine AP radiographs have shown accuracy ranging between 76–84% for detection of lumbosacral transition vertebrae and mid-sagittal T2-weighted MRI shows the abnormality with 80% sensitivity and 80% specificity. Ferguson radiographs (AP radiographs of the lumbosacral spine angled cranially at 30˚) have slightly higher sensitivity than the above in diagnosis.[3] There is still a need for definite treatment guidelines as multiple interventions may be required to achieve and maintain adequate pain relief.[4]

CONCLUSION

Bertolotti's syndrome is a congenital variant with an enlarged transverse process of the L5 lumbosacral transition vertebra, which articulates or fuses with the sacrum or Ilium. Initially it is managed conservatively. The interventional management options include epidural steroid injections, lumbar facet medical branch block and neurotomy, and sacroiliac joint injection and neurotomy.[5]

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