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CASE REPORT

Low Back Pain in a Young Adult: A Case of Bertolotti Syndrome

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ABSTRACT

Aim: The aim of this report is to stress upon Bertolotti syndrome being a common cause of back pain in young adults and possible futility of interventional pain management in such cases.

Background: Bertolotti's syndrome is characterized by unilateral or bilateral enlargement of the transverse process of the most caudal lumbar vertebra which may articulate or fuse with the sacrum or ilium. The syndrome affects 4 to 21% some reports stating incidence to be as high as 30% of the population. Diagnosis is not difficult if clinical suspicion is high, but mimics other common causes of low back pain. Treatment by interventional pain management may not be very effective as the problem is structural.

Case report: A 32-year-old soldier with low back pain, not relieved with medication was diagnosed with right-sided sacroiliitis. X-ray showed fusion of the transverse process of the 5th lumbar vertebra with the iliac crest. A fluoroscopy-guided sacroiliac joint injection along with the injection of the pseudoarthrosis was performed with no relief. An MRI scan was done which revealed degenerative disc at L4-L5 level. Caudal epidural steroid injection was done, however, the patient failed to obtain relief. He was then referred to a spine surgeon who has advised him surgery.

Conclusion: We conclude that Bertolotti's syndrome could be an important cause of intractable back pain in young adults. Being a structural anomaly, usually, surgical intervention is needed.

Clinical implication: Patients with Bertolloti syndrome should be taken up for interventional pain management, after explaining guarded prognosis due to it being a structural anomaly.

Keywords: Back pain in young adult, Bertolloti syndrome, Case report, Low back pain.

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INTRODUCTION

Bertolotti's syndrome is characterized by unilateral or bilateral enlargement of the transverse process of the most caudal lumbar vertebra which may articulate or fuse with the sacrum or ilium.[1] The syndrome affects 4–21%,[2] some reports stating an incidence as high as 30%[3] of the population.

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Some of the challenges that we faced, in this case, included, firstly symptoms of the patient directed us towards sacroiliitis. This was one of the few times when clinical diagnosis which is given the first importance in pain practice misguided the management. X-ray findings which were suggestive of Bertolotti's syndrome were also addressed by injection into the pseudoarthrosis. However, there was no relief again. An MRI scan suggested degeneration of L4-5 disc which was an expected finding in Bertolotti's syndrome which was also tried to be addressed with no success. Repeated failures were triggering frustration as we had reached the diagnosis, provided evidence-based treatment however the pain was still there.

CASE REPORT

A 32-year-old male patient, a soldier by profession presented to our OPD with back pain for 6 months. The pain was continuous, aching, radiating to the right lower limb with a visual analog scale (VAS) score of about 8/10. He had tried all sorts of treatment ranging from exercises, yoga, acupressure, acupuncture, alternative medicine to modern medicine including nonsteroidal anti-inflammatory agents and even a short course of steroids, to no avail. Being a soldier, restriction of physical activity due to pain was hampering his professional efficiency, and he was greatly distressed. Physical examination revealed a muscularly developed and otherwise healthy male. Examination revealed no bruising, swelling, or deformities. Tenderness was present over the right SI joint and centrally over L4-L5 interspace. All the provocative tests of sacroiliac joint (SIJ) arthropathy were positive. Straight leg raising (SLR) test was negative. Clinically, right SIJ arthropathy was diagnosed. An X-ray of the lumbosacral spine was done which revealed a fusion of the right-sided transverse process of the L5 vertebra and the iliac crest, viz right sided Bertolotti's syndrome (Fig. 1). We decided to go ahead with right SIJ local anesthetic and steroid injection, along with the injection of the pseudoarthrosis. After explaining the procedure and obtaining written, informed consent, a successful SIJ block was performed using 1 mL 0.5% bupivacaine and 40 mg triamcinolone acetate. L5-iliac crest pseudoarthrosis was injected with satisfactory dye spread along L5 nerve root (Fig. 2). Although patient got immediate pain relief, the pain returned with a vengeance on a postprocedure day 2. Once again, physical examination revealed tenderness over the right SIJ, the L4-L5 interspace and the

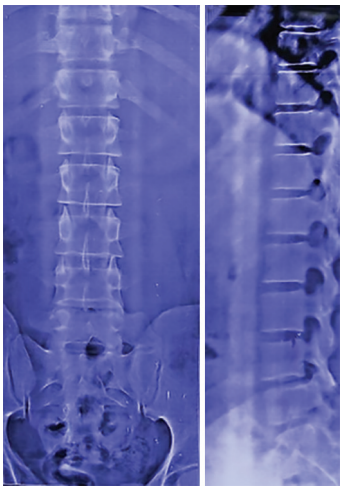

Fig. 1 : X-ray showing fusion of L5 lateral process with iliac crest on right side–Bertolotti syndrome

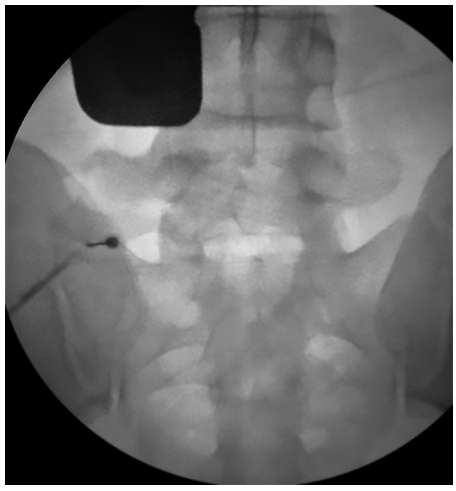

Fig. 2: C-arm image showing injection into the pseudoarthrosis and tracking of dye along L5 nerve root

right paraspinal area. An MRI scan of the lumbosacral spine was advised. MRI showed disc degeneration and extrusion compressing the L5 nerve root, which was an expected finding. Fluoroscopy-guided caudal epidural steroid injection was performed, however satisfactory pain relief was not obtained. The patient was referred to the spine surgeon who advised him resection of the abnormal transverse process along with endoscopic discectomy.

DISCUSSION

In 1917, Bertolotti described a unilateral and bilateral enlargement of the transverse process of the most caudal lumbar vertebra, which may articulate or fuse with the sacrum or ilium. Manmohan et al. in their paper have mentioned that examining a patient with Bertolotti's syndrome would reveal little information apart from mild to moderate tenderness around the pseudo-articulation, limited range of motion and an otherwise normal clinical examination, with occasional radicular symptoms.[4] In our case, tests of SIJ inflammation were positive which could be an incidental finding or sacroiliitis may have been present due to hypermobility. Diagnosis of Bertolotti's syndrome is based on radiological findings and their correlation with the clinical presentation. The exact etiology of Bertolotti's syndrome remains elusive. Luoma et al.[3] and Brown et al.[5] have described degenerative changes of the intervertebral disc in relation to lumbosacral transitional vertebrae. To support our case, they make reference to the fact that the disc above a transitional vertebra appears at risk of increased degenerative change while the disc below appears protected. This phenomenon could be due to hypermobility and abnormal torque of the intervertebral space above the transitional vertebra. Less degenerative change at the level below may be because anomalous articulation allows less movement between the L5 and S1 vertebrae.[6] We have tried out evidence-based management to address all the possible pain generators. However, the problem being mechanical, pain relief was never achieved satisfactorily. Studies also mention that surgical correction of an anomaly with or without posterolateral fusion has the best chances of long term pain relief.[7,8] We would like to stress on the fact that some mechanical causes of pain may not be amenable to nonsurgical pain management.

CONCLUSION

Bertolotti's syndrome is an important cause of low back pain in young adults. The standard evidence-based treatment guidelines for interventional pain management may not provide optimal pain relief leaving surgery as the only option available.

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