ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 02 | February - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PERIARTICULAR RFA: AN INNOVATIVE METHOD FOR TREATING PAIN IN BERTOLOTTI'S SYNDROME – A CASE REPORT

Anaesthesiology

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ABSTRACT

A 45-year-old woman had a 12-month history of low back pain and left upper buttock pain, which did not respond to conservative management. Bertolotti's syndrome, characterised by a unilateral lumbosacral transitional vertebra, was diagnosed based on radiological findings. The patient underwent a diagnostic block, resulting in immediate pain relief lasting 10 hours. Given the positive response, she proceeded to conventional radiofrequency (RF) ablation of the left pseudoarthrosis. Following the procedure, the patient experienced a significant reduction in pain that persisted for over four months. Functional ability and quality of life also improved markedly. Importantly, no significant complications occurred during or after the intervention. RF ablation offers a promising and minimally invasive therapeutic option for patients with Bertolotti's syndrome who have refractory back pain unresponsive to conservative measures. This case highlights the role of interventional techniques, such as RF ablation, in achieving long-term pain relief and improving quality of life in individuals with Bertolotti's syndrome.

KEYWORDS

Bertolotti's syndrome, radiofrequency ablation, low back pain, pseudoarthrosis

INTRODUCTION:

Bertolotti's syndrome is a congenital spinal anomaly characterised by a lumbosacral transitional vertebra (LSTV). It can lead to chronic low back pain (LBP) due to neo-articulation, abnormal stress on the lumbar spine, facet joint degeneration, and nerve compression.[1]

The lumbosacral transitional vertebra is a condition in which the enlarged transverse process of the last lumbar or first sacral vertebrae articulates with the sacrum or ilium to varying degrees.[2] The incidence is reported to be between 4 and 36%. Management of Bertolotti's syndrome typically begins with conservative treatments, including activity modification, nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, and core-strengthening exercises. When conservative measures fail, interventional approaches, such as local anaesthetic or corticosteroid injections into the neo-articulation, have been employed to identify and manage the pain generator. More aggressive options include surgical resection or spinal fusion, though outcomes remain controversial. In recent years, radiofrequency (RF) ablation has emerged as a minimally invasive interventional alternative for refractory cases.[3,4]

This case highlights the role of radiofrequency ablation (RFA) in providing long-term relief for refractory LBP in a patient with bertolotti's syndrome.

Case Report:

A 45-year-old female presented with chronic lower back and left upper buttock pain persisting for 12 months, unresponsive to conservative treatments including physical therapy and medications. The diagnosis of Bertolotti's Syndrome was confirmed through imaging, revealing the presence of a lumbosacral transitional vertebra (LSTV). The patient reported a pain level of 5-8/10 on the Visual Analog Scale, with exacerbation during activities such as twisting, bending, and prolonged sitting. Despite undergoing physical therapy, NSAID treatment, and L5-S1 facet joint injections, her symptoms did not improve. Imaging studies, including X-ray and MRI, highlighted the LSTV and a diagnostic nerve block directed into the pseudoarthrosis provided temporary pain relief lasting approximately 10 hours, confirming the pain generator.

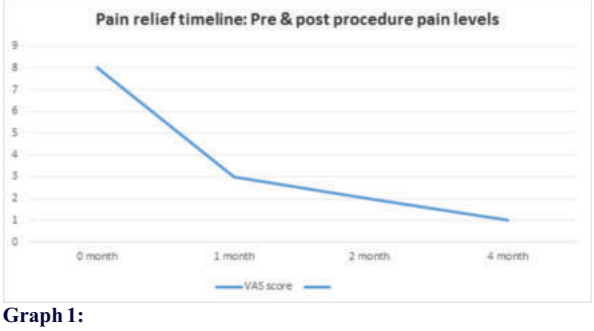
Subsequently, conventional radiofrequency ablation (RFA) was performed targeting the pseudoarthrosis margins. Under fluoroscopic guidance, a needle was advanced to the targeted pseudoarthrosis left side, and lesioning was conducted at a temperature of approximately 80°C for 90 seconds at three sites: the upper, middle, and lower pseudoarticular margins. Following the procedure, the patient reported significant pain reduction, with her pain level decreasing to 1/10. This relief was sustained for over four months, accompanied by increased mobility and an improved ability to perform daily activities without discomfort. Follow-up evaluations at one week, one month, and three months post-procedure revealed no significant complications, and the patient expressed satisfaction with the outcome.

DISCUSSION:

Bertolotti's Syndrome is typically managed with conservative treatments such as physical therapy and medications, but for patients with refractory pain, interventional procedures like nerve blocks and RFA can provide significant benefits.

RFA targets the sensory nerves innervating the pseudoarthrosis, disrupting pain transmission by denaturing nerve fibres and offering prolonged pain relief.[2,5]

Studies indicate that RFA can deliver relief lasting 6-12 months in appropriately selected patients. This case highlights the effectiveness of RFA as a minimally invasive option for managing chronic pain in bertolotti's syndrome, particularly for patients unresponsive to conservative treatments. It underscores the role of RFA in enhancing the quality of life by targeting the primary pain generator, demonstrating its safety and efficacy in this patient population.



Graph 1:

Figure 1: C-Arm image showing the pseudo articulation of the transverse process with the sacrum

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