WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 11, 1467-1473. Case Study ISSN 2277–7105

FAILED BACK SURGERY SYNDROME; A CASE REPORT

Neethu R.[*1], Ansu Reji[2], Catherine Toms[3] and Beevi Fathima[4]

[1,2,3,4]Pharm D Intern, the Dale View College of Pharmacy and Research Centre Punalal Po, Trivandrum, Kerala, India.

Article Received on
09 April 2024,

Revised on 30 April 2024,
Accepted on 21 May 2024

DOI: 10.20959/wjpr202411-32606

***Corresponding Author**
Neethu R.
Pharm D Intern, the Dale View College of Pharmacy and Research Centre Punalal Po, Trivandrum, Kerala, India.

ABSTRACT

Failed back surgery syndrome (FBSS) a chronic neuropathic disorder that manifests as persistent lower back pain after one or many lumbar spine surgeries. FBSS occurs when the patient's and the surgeon's pre-operative expectations fails to be met with lumbar spinal surgery. Patients with failed back surgery syndrome are at greater risk for persistent pain because of a variety of factors linked with the condition's complex etiology. More drastic treatments have been used because this syndrome may result in considerable pain and disability. Here we report a case of FBSS in a 66-year-old female patient with chronic back pain, walking difficulty, weakness and severe muscle cramps in legs.

KEYWORDS: Failed Back Surgery Syndrome(FBSS), Back Pain, Steroids.

INTRODUCTION

Failed back surgery syndrome (FBSS) is defined as lumbar spinal pain of unknown origin that either appears after surgery for spinal pain that developed in the same topographical place or persists despite surgical intervention.[1] The pain may develop following surgery, or the procedure may worsen pre-existing discomfort or fail to effectively relieve pain.[2] FBSS occurs when the lumbar spinal surgery fails to perform up to the pre-operative expectations of both the patient and the surgeon.[3] Patients diagnosed with FBSS have had recurrent episodes of persistent back pain, either with or without transmitted or radicular symptoms, and have undergone one or more unsuccessful surgical procedures to manage the pain.[1]

According to reports, the point prevalence of low back pain in adults in general is 37%, and the lifetime prevalence ranges from 60% to 85%.[4,5] It has been estimated that approximately 30% of patients who have low back surgery may experience FBSS. That means that not all individuals who have persistent symptoms following low back surgery have FBSS. Persistent symptoms were closely correlated with the patient's quality of life and psychological state in addition to their level of satisfaction after surgery.[6] There are numerous additional causes of FBSS than surgery, therefore not all FBSS occur on by surgery.[7] The non-surgical causes include Herniated Nucleus Propulsus (HNP) in an area which is not surgical site, Myofascial pain, Spine stenosis, Spondylolysis.[3,8,9] Surgically related causes can be classified according to preoperative, intraoperative and postoperative variables. Preoperative factors include patient, psychological factors like depression or anxiety, inappropriate candidate selection, inappropriate surgery selection. Intraoperative factors include inability for achieving surgical goal, ineffective technique, incorrect surgical level. Postoperative factors include disease progression, epidural fibrosis, which accounts for 20–36% of patients with FBSS, modified spinal instability bringing on by changes in biomechanics, complications from surgery such as hematoma, infection, and nerve damage, beginning of myofascial pain due to postural alterations come from denervation and atrophy caused by dissection and prolonged retraction of the paraspinal musculature during surgery.[3] Both the patient and the medical field are adversely affected by FBSS. It feels good to learn that as the number of spine surgeries rises, increase the prevalence of this disorder.[3,10]

Confusion accompanies the pathogenesis of failed back surgery syndrome, which has multiple underlying factors. The most prevalent structural abnormalities found in patients with failed back surgery syndrome is lateral stenosis of the foramina; however, patients also frequently have severe disc deterioration, disc hernia, neuropathic pain.[2,11] Pathophysiological abnormalities linked to FBSS that can be directly attributed to surgery are epidural fibrosis, higher spinal instability as a consequence of laminectomy or discectomy and "transition syndrome" or the shift of load to surrounding disc tissue.[3]

A complete history as well as physical examination are always the first steps in assessing and making a diagnosis of FBSS. Assessing the location and intensity of pain is the first step.[1] When evaluating suspected failed back surgery syndrome, X-rays are an easy and affordable first imaging modality to consider. Still X-rays can't evaluate soft tissue, including intervertebral discs, epidural scarring, as well as fibrosis, nor can they identify spinal

stenosis, the most frequent pathological finding in FBSS.[1,3] Since MRI is so good at identifying soft tissue abnormalities such disc herniation and epidural fibrosis, it remains the gold standard method of imaging for failed back surgery syndrome. This is true both with or without gadolinium contrast.[12]

There are two main categories of therapies for failed back surgery syndrome: conservative (such as physical therapy or medication) and aggressive (such as surgery or interventional therapy). When patients do not exhibit urgent surgical indications, conservative therapy should always take precedence over invasive methods.[2,12] Physical therapy can enhance a patient's posture, walking, and physical function by strengthening their muscles. Additional conservative approaches to managing postoperative back pain include cognitive behavioural therapy and stress reduction in psychotherapy.[1] The use of oral medications to treat FBSS is becoming more and more contentious. Antiepileptic medications, non-steroidal anti-inflammatory medications, oral steroids, antidepressants, and opioids belong to the treatments.[1] In addition to treating neuropathic pain with FBSS, antiepileptic medications like gabapentin and pregabalin are also used to relieve post-operative pain.[13] In cases of persistent lumbar radicular pain or radicular pain related to FBSS, there is good evidence for the use of caudal epidural steroid injections for short-term treatment and moderate evidence in favour of long-term comfort.[14] The sub-etiology of the individual's pain and the identification of particular abnormalities on imaging are critical aspects in the interventional treatment of failed back surgery syndrome.[15] A stimulatory device is inserted as part of neuromodulatory therapy for failed back surgery syndrome (SCS) in order to reduce the patient's discomfort.[2]

This complex case study describes an adult patient suffering from what was eventually diagnosed to be Failed Back Surgery Syndrome.

CASE REPORT

A 66-year-old female patient came with complaints of back pain for 4 years. She had muscle cramps which lasted for half hours. The muscle cramp was initially in the left leg, later it shifted to the right leg. For this, she was taken to a tertiary hospital, an X-ray was taken and spine surgery was suggested. She underwent a spine fixation surgery. According to the patient, after the surgery pain persisted and got more severe. The patient did not have any relief of symptoms but had the aggravation of pain and weakness. Later, she was unable to walk due to weakness.

She has hypertension and type 2 diabetes for 8 years and she was on regular medication (Carvedilol 3.125mg twice daily, Vildagliptin 50mg twice daily, Metformin 500mg twice daily, Calcium and Vitamin D3).

On examination, ankle jerk was absent on both legs, and knee jerk was depressed. On the right side, she has 75% sensory impairment in the L5-S1 area, and on the left side 25% loss. Dorsiflexion-grade II on both legs, Extensor Hallucis Longus (EHL) grade I on the right, and grade II on the left. The X-ray of LS (lumbosacral) Spine shows screws in place with significant listhesis. MRI Spine shows a listhesis of L5 over S1 with a small disc.

The patient was admitted and started IV Steroids and other supportive management. Problems were discussed with the patient and a second surgery was suggested. However as she had severe weakness, a trial with small doses of methylprednisolone was given. The patient was treated with a combination of Gabapentin and Nortriptyline for chronic pain. Thus, she was able to stop taking her regular painkillers. The patient was able to walk without any support and symptoms were improved.

The patient's blood sugar levels were monitored and it is controlled with the help of Vildagliptin and Metformin. After discharge, the patient was advised to take a Gabapentin-Nortriptyline combination. Also suggested to consult a spine surgeon to discuss the role of re-exploration.

DISCUSSION

The case report highlights the complexities involved in managing patients with Failed Back Surgery Syndrome (FBSS). Despite surgical intervention aimed at alleviating her back pain, the patient experienced persistent and worsening symptoms postoperatively. This underscores the multifactorial nature of FBSS, where various preoperative, intraoperative, and postoperative factors can contribute to treatment failure.

The patient's comorbidities, including hypertension and type 2 diabetes, further complicate her clinical picture, potentially influencing her response to treatment and overall prognosis. Additionally, the neurological deficits observed on examination, such as sensory impairment and muscle weakness, signify the severity of her condition and emphasize the need for a comprehensive management approach.

The therapeutic strategy employed in this case reflects the importance of a multimodal approach to FBSS management. Conservative measures, including medication and physical therapy, were initially prioritized to address the patient's chronic pain and functional limitations. The use of IV steroids and neuropathic pain medications helped alleviate her symptoms and improve her mobility. However, the decision to defer a second surgery due to the patient's severe weakness highlights the cautious approach required in managing complex cases of FBSS.

Close monitoring of the patient's blood sugar levels and adjustment of her diabetes medications demonstrate the importance of addressing comorbidities in FBSS management to optimize overall patient outcomes. The planned consultation with a spine surgeon to discuss the potential role of re-exploration acknowledges the ongoing challenges in treating FBSS and the importance of considering further surgical interventions in select cases.

This case underscores the intricate nature of FBSS and the need for a tailored, multidisciplinary approach to its management. By addressing both the underlying pathology and associated comorbidities, healthcare providers can strive to improve outcomes and enhance the quality of life for patients suffering from FBSS.

CONCLUSION

Failed Back Surgery Syndrome (FBSS) presents a complex challenge in both diagnosis and management. It manifests as persistent lumbar spinal pain following surgical intervention, impacting the patient's quality of life and psychological well-being. While surgical factors contribute to FBSS, non-surgical causes must also be considered in its pathogenesis. Diagnostic imaging, particularly MRI, plays a crucial role in identifying structural abnormalities associated with FBSS. Treatment approaches range from conservative measures, including physical therapy and medication, to more aggressive interventions such as surgical re-exploration or neuromodulatory therapy. However, the optimal management strategy depends on a thorough understanding of the patient's clinical presentation, imaging findings, and response to initial treatment. A multidisciplinary approach involving collaboration between spine surgeons, pain specialists, and other healthcare professionals is essential for effectively addressing the complex needs of patients with FBSS.

REFERENCE

1. Baber Z, Erdek MA. Failed back surgery syndrome: current perspectives. J Pain Res, 2016 Nov 7; 9: 979-987.
2. Orhurhu VJ, Chu R, Gill J. Failed Back Surgery Syndrome, 2023 May 1.
3. Chan CW, Peng P. Failed back surgery syndrome. Pain Med, 2011 Apr; 12(4): 577-606.
4. Patel AT, Ogle AA. Diagnosis and management of acute low back pain. Am Fam Physician, 2000 Mar 15; 61(6): 1779-86, 1789-90.
5. Schmidt CO, Raspe H, Pfingsten M, Hasenbring M, Basler HD, Eich W, Kohlmann T. Back pain in the German adult population: prevalence, severity, and sociodemographic correlates in a multiregional survey. Spine (Phila Pa 1976) 2007 Aug 15; 32(18): 2005-11.
6. Inoue S, Kamiya M, Nishihara M, Arai YP, Ikemoto T, Ushida T. Prevalence, characteristics, and burden of failed back surgery syndrome: the influence of various residual symptoms on patient satisfaction and quality of life as assessed by a nationwide Internet survey in Japan. J Pain Res, 2017 Apr 6; 10: 811-823.
7. Wu YT, Lai MH, Lu SC, Chang ST. Beneficial response to gabapentin portraying with interval change of brain SPECT imaging in a case with failed back surgery syndrome. Journal of clinical pharmacy and therapeutics, 2011 Aug; 36(4): 525-8.
8. Walker BF. Failed back surgery syndrome. COMSIG review, 1992 Nov 1; 1(1): 3.
9. Bokov A, Isrelov A, Skorodumov A, Aleynik A, Simonov A, Mlyavykh S. An analysis of reasons for failed back surgery syndrome and partial results after different types of surgical lumbar nerve root decompression. Pain physician, 2011 Nov 1; 14(6): 545-57.
10. Teixeira MJ, Yeng LT, Garcia OG, Fonoff ET, Paiva WS, Araujo JO. Failed back surgery pain syndrome: therapeutic approach descriptive study in 56 patients, 2011 Jun; 57(3): 286-91.
11. Schofferman J, Reynolds J, Herzog R, Covington E, Dreyfuss P, O'Neill C. Failed back surgery: etiology and diagnostic evaluation. Spine J., 2003 Sep-Oct; 3(5): 400-3.
12. Daniell JR, Osti OL. Failed Back Surgery Syndrome: A Review Article. Asian Spine J., 2018 Apr; 12(2): 372-379.
13. Khosravi MB, Azemati S, Sahmeddini MA. Gabapentin versus naproxen in the management of failed back surgery syndrome; a randomized controlled trial. Acta Anaesthesiol Belg, 2014; 65(1): 31-7.
14. Hoffman BM, Papas RK, Chatkoff DK, Kerns RD. Meta-analysis of psychological interventions for chronic low back pain. Health psychology, 2007 Jan; 26(1): 1.

15. Hussain A, Erdek M. Interventional pain management for failed back surgery syndrome. Pain Pract, 2014 Jan; 14(1): 64-78.