CHALLENGING MANAGEMENT OF FAIL BACK SURGERY SYNDROME IN A 66-YEAR-OLD FEMALE : A CASE REPORT OF PERSISTENT PAIN AFTER MULTIPLE LUMBAR SURGERIES

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ABSTRAK
Laporan kasus ini menggambarkan seorang pasien wanita berusia 66 tahun yang didiagnosis menderita *Fail Back Surgery Syndrome* (FBSS) setelah dua kali operasi tulang belakang lumbal. Pasien awalnya mengalami nyeri punggung bawah kronis yang menjalar ke kedua kaki, yang menetap meskipun telah dilakukan intervensi bedah. Pencitraan resonansi magnetik (MRI) pra-bedah menunjukkan stenosis kanal pada L3-4 dan L5-S1, dengan spondylolisthesis pada L4-5. Operasi pertama melibatkan dekompresi saluran akar dan penempatan sangkar lumbal pada L4-5 dan L5-S1, diikuti dengan operasi kedua yang terdiri dari laminektomi dan fiksasi internal lumbal posterior dengan batang dan sekrup. Meskipun telah dilakukan prosedur ini, pasien terus mengalami rasa sakit yang parah dan berkurangnya mobilitas. Gejala pasca operasi yang sedang berlangsung menghadirkan tantangan dalam menangani kasus ini, terutama mengingat usia pasien dan penyebab utama FBSS. Penilaian neurologis menunjukkan berkurangnya refleks dan defisit sensorik, yang mengindikasikan kompresi akar saraf. Evaluasi diagnostik mengesampingkan kegagalan perangkat keras dan kompresi sisa, sehingga mengkonfirmasikan diagnosis FBSS. Pengelolaan FBSS masih merupakan tantangan dan memerlukan pendekatan yang disesuaikan. Kasus ini menekankan pentingnya perencanaan pra-bedah individual, pemantauan ketat pasca operasi, dan menggabungkan berbagai pilihan pengobatan. Intervensi di masa depan, seperti stimulasi sumsum tulang belakang, dapat memberikan bantuan, menyoroti perlunya penelitian berkelanjutan untuk meningkatkan hasil pada pasien FBSS.

Kata kunci : *fail back surgery syndrome*, operasi tulang belakang lumbal, stenosis kanal, spondylolisthesis, stimulasi sumsum tulang belakang

ABSTRACT
This case report describes a 66-year-old female patient diagnosed with Fail Back Surgery Syndrome (FBSS) following two lumbar spine surgeries. The patient initially presented with chronic lower back pain radiating into both legs, which persisted despite the surgical interventions. Pre-surgical magnetic resonance imaging (MRI) revealed canal stenosis at L3-4 and L5-S1, with spondylolisthesis at L4-5. The first surgery involved canal decompression and lumbar cage placement at L4-5 and L5-S1, followed by a second surgery consisting of a laminectomy and posterior lumbar internal fixation with rods and screws. Despite these procedures, the patient continued to experience significant pain and reduced mobility. The ongoing postoperative symptoms presented challenges in managing this case, particularly considering the patient's age and the underlying causes of FBSS. Neurological assessments showed diminished reflexes and sensory deficits, indicating nerve root compression. Diagnostic evaluations ruled out hardware failure and residual compression, confirming the diagnosis of FBSS. Management of FBSS remains challenging, requiring a tailored approach. This case emphasizes the importance of individualized pre-surgical planning, close postoperative monitoring, and incorporating a range of treatment options. Future interventions, such as spinal cord stimulation, may provide relief, highlighting the need for ongoing research to improve outcomes in FBSS patients.

Keywords *: fail back surgery syndrome, lumbar spine surgery, canal stenosis, spondylolisthesis, spinal cord stimulation*

INTRODUCTION

Fail Back Surgery Syndrome (FBSS) refers to a condition in which patients experience persistent or recurrent pain following spinal surgery. This condition significantly impacts quality of life, as patients undergoing spinal procedures typically expect pain relief and improved functional capacity. Reporting cases of FBSS is crucial because it highlights potential complications and the challenges of achieving optimal outcomes after surgery. Additionally, these reports provide valuable insights into clinical management and offer lessons that can improve future decision-making. Documenting such cases raises awareness among clinicians and contributes to the growing body of literature aimed at enhancing patient outcomes and reducing postoperative complications.(Edinoff et al., 2022; Hasoon et al., 2020; Wyngaert, 2023)

FBSS is a prevalent but often underreported complication, occurring in 20-40% of patients undergoing lumbar surgery. Its causes include incomplete spinal canal decompression, nerve root damage, spinal instability, and scar tissue formation (epidural fibrosis). Psychological factors, such as depression and anxiety, may also exacerbate pain, complicating the clinical picture. Despite advances in surgical techniques, postoperative outcomes remain unpredictable. The persistence of symptoms post-surgery can lead to repeated interventions, which may not always result in complete symptom resolution, as seen in this case, where two surgical procedures did not fully alleviate the patient's pain.(Berger et al., 2021; Goudman et al., 2022; Moisa et al., 2021)

The present case of a 66-year-old female with a history of multiple spinal surgeries highlights the complexities of managing FBSS, particularly in elderly patients. Older adults face additional challenges, such as reduced physiological reserve, comorbidities, and a higher risk of surgical complications.(Funao et al., 2022; Giordan et al., 2021; Higashiyama et al., 2023) This report provides a detailed account of the patient's clinical course, diagnostic assessments, and surgical interventions, contributing to ongoing discussions regarding the optimal management of FBSS. By documenting this case, we aim to improve understanding of FBSS, encourage critical reflection on current strategies, and foster research into more effective treatments for this challenging condition.

CASE REPORT

Patient Information

The patient is a 66-year-old female who presented with a chronic history of low back pain, radiating into both legs. Her primary concern was persistent and debilitating pain that remained unresolved despite undergoing two previous lumbar surgeries. The initial presentation of radiculopathy, coupled with unsuccessful surgical relief, aligned with the clinical diagnosis of Fail Back Surgery Syndrome (FBSS). The patient had no significant past medical history of conditions such as diabetes or cardiovascular disease that could have affected her recovery. She also had no prior major surgeries before these lumbar operations. Family and social history were unremarkable, with no noted history of neurological or orthopedic conditions, nor lifestyle factors such as smoking or heavy manual labor that could have contributed to her condition. Pre-surgical MRI revealed lumbar canal stenosis at L3-4 and L5-S1, along with spondylolisthesis at L4-5, which necessitated surgical intervention to decompress and stabilize the spine.

Upon examination, the patient exhibited ongoing severe lower back pain radiating to both legs, suggestive of nerve root compression consistent with her MRI findings. Lumbar range of motion was significantly restricted, particularly in flexion and extension, due to pain. Neurological assessment revealed sensory deficits, with decreased responsiveness to light

touch and pinprick in the L4, L5, and S1 dermatomes. Reflex testing indicated diminished patellar and Achilles reflexes bilaterally, further supporting nerve root involvement. Consequently, the patient's functional status had markedly declined, limiting her mobility and daily activities such as walking and stair climbing, resulting in a substantial decrease in her quality of life.

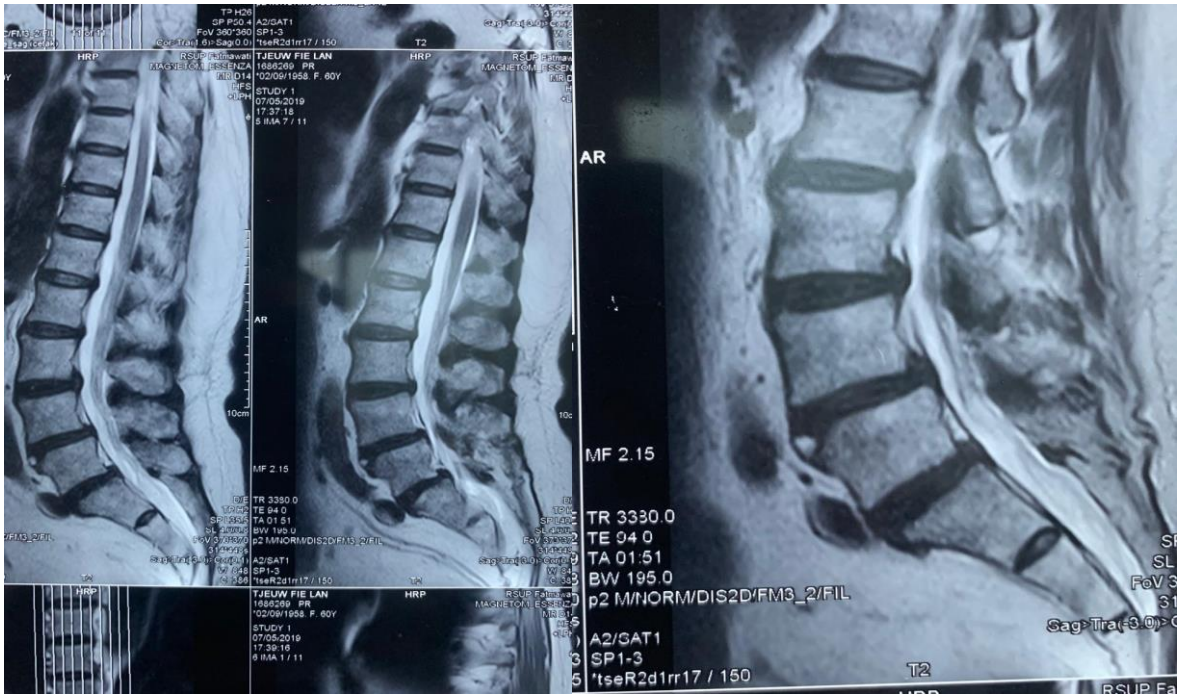

Figure 1. Preoperative MRI Demonstrating Lumbar Disc Herniation At Levels L3-4 and L5-S1, Accompanied By Spondylolisthesis At The L4-5 Level

Preoperative MRI indicated significant lumbar canal stenosis at L3-4 and L5-S1, along with spondylolisthesis at L4-5. Despite undergoing two surgeries to address these spinal abnormalities, the patient continued to report persistent pain, prompting further diagnostic evaluation. The differential diagnosis included potential hardware complications, residual nerve compression, or epidural fibrosis, all possible explanations for the sustained symptoms. Additionally, nerve root damage from previous surgeries or degenerative changes in adjacent spinal segments were considered. The persistence of symptoms following both surgical interventions led to the diagnosis of Fail Back Surgery Syndrome (FBSS). Factors including the patient's age, preoperative spinal pathology, and postoperative outcomes may have contributed to the continued symptomatology.

The patient’s first surgical intervention aimed to address the significant canal stenosis and spondylolisthesis by decompressing the affected neural structures and stabilizing the spine. However, her pain persisted postoperatively, leading to a second surgery involving a laminectomy and posterior lumbar fixation. Despite these interventions, her symptoms remained largely unchanged. Postoperative management included pain control with NSAIDs and opioids, along with physical therapy, but these measures provided limited relief. Non-surgical therapies such as epidural steroid injections and nerve blocks were considered, though they offered little long-term benefit. The patient’s prognosis remains poor, with ongoing low back pain and radicular symptoms continuing to limit her mobility and daily functioning. Future treatments, such as spinal cord stimulation or more aggressive pain management approaches, are being considered due to the complexity of her condition.

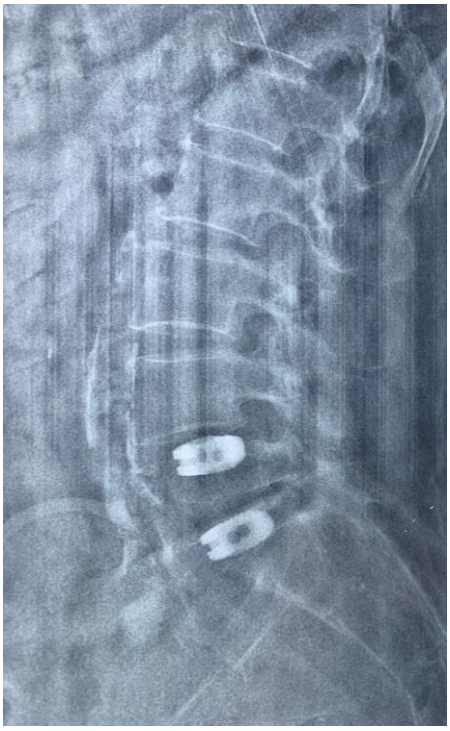

Figure 2. Initial Postoperative MRI Showing The Placement Of Cages At Levels L4-5 And L5-S1. The Patient Reported An Increase In Pain Following The Procedure

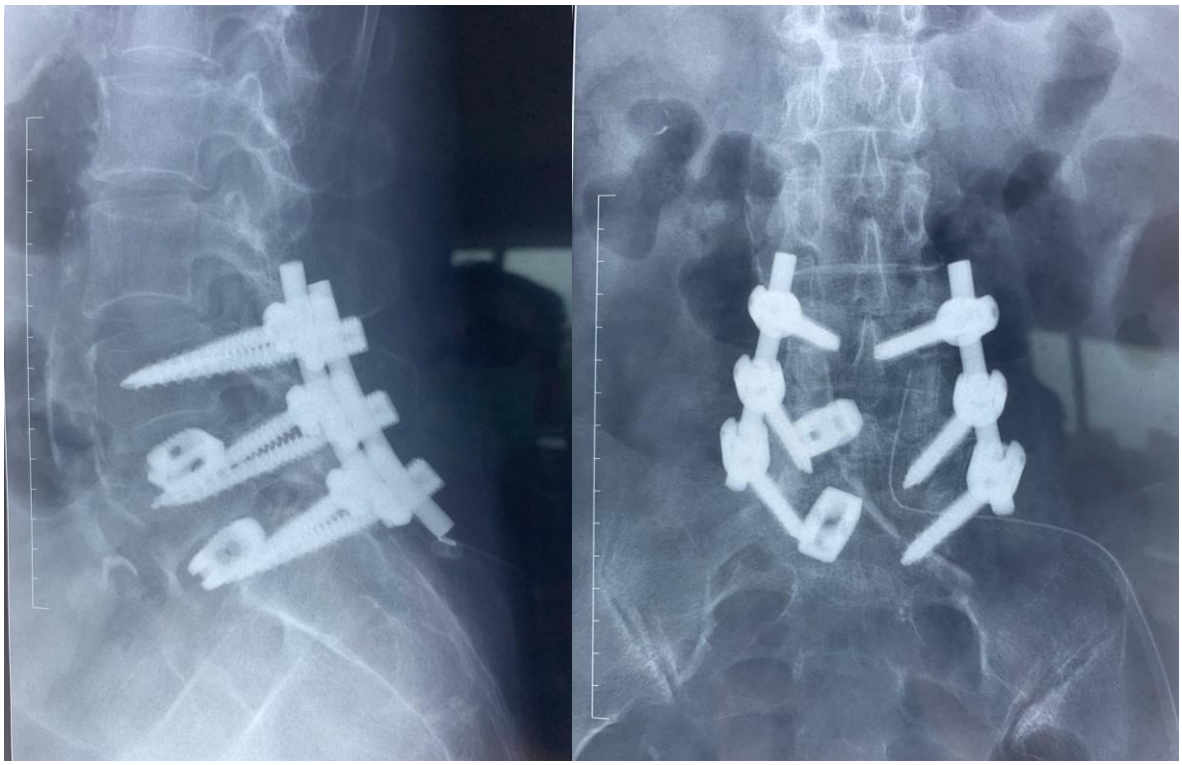

Figure 3. MRI Following The Second Surgery, Where The Patient Reported Severe Low Back Pain Radiating To Both Legs, Particularly During Body Movement

DISCUSSION

Fail Back Surgery Syndrome (FBSS) refers to the persistence or recurrence of pain following spinal surgery, often despite successful technical outcomes. Several factors may contribute to the failure of surgical interventions, and these must be considered when managing

patients with FBSS. One common cause is inadequate decompression, where incomplete removal of compressive elements, such as disc material or osteophytes, can result in continued nerve root irritation. In some cases, mechanical instability of the spine, even after fusion or fixation, may lead to continued or recurrent pain. Scar tissue formation, known as epidural fibrosis, is another well-documented cause of postoperative pain. Fibrotic tissue can form around nerve roots following surgery, leading to adhesions that perpetuate symptoms of radiculopathy. Additionally, psychological factors, including depression and anxiety, are known to exacerbate the perception of pain, complicating both the diagnosis and treatment of FBSS. These multifactorial etiologies underscore the importance of a comprehensive approach in the evaluation and treatment of patients who continue to experience pain after spinal surgery.(Lee et al., 2020; Sabourin et al., 2021; Yeo, 2024)

Managing FBSS in elderly patients presents unique challenges due to the increased risk of surgical complications and slower recovery processes associated with age. The patient in this case, at 66 years of age, was more vulnerable to postoperative complications, including delayed healing, higher infection risk, and diminished physiological reserve. In the elderly, degenerative changes, such as osteoporosis or disc degeneration, may exacerbate the mechanical failure of previous surgical interventions, leading to a higher likelihood of revision surgery. The decision to perform revision surgery must therefore be made cautiously, weighing the potential benefits against the inherent risks. In this patient, two surgeries—first involving canal decompression and lumbar cage placement, followed by laminectomy and posterior lumbar fixation—failed to alleviate her symptoms, highlighting the difficulty of achieving optimal outcomes in such complex cases. Postoperative management is also critical, as inadequate pain control and insufficient rehabilitation can further impede recovery. Managing complications such as epidural fibrosis and ensuring adequate neural decompression are essential components of addressing FBSS, yet they are often challenging to achieve, especially in older patients.(Ashraf, 2021; McClure et al., 2021; Sulaiman et al., 2021)

The management of FBSS remains a challenging and controversial area in spinal surgery. Literature on FBSS suggests that the success rate of revision surgeries varies widely, with some studies reporting improvement in 50-70% of patients, while others demonstrate a more limited response. In the present case, the patient's continued pain despite two surgical interventions reflects findings from studies that emphasize the limited efficacy of revision surgeries in certain populations. The literature highlights several alternative treatment strategies for managing FBSS, including conservative measures such as physical therapy, pharmacological pain management, and spinal cord stimulation (SCS). SCS has shown promise in providing long-term relief in patients with FBSS who do not respond to surgical revision. Additionally, multidisciplinary approaches that include psychological support and lifestyle modifications have demonstrated improved outcomes in some cases. In this context, the failure of two surgical interventions suggests that non-surgical or multimodal treatment approaches may be more appropriate for this patient, given the potential risks associated with further surgery.(Berger et al., 2021; Harman et al., 2020; Park et al., 2021)

This case underscores the complexity of FBSS and highlights several important lessons in the management of patients with persistent postoperative pain. First, FBSS is a multifactorial condition that requires a careful, individualized approach to treatment. Pre-surgical assessment is critical in identifying patients who may be at higher risk for FBSS, including those with significant preoperative pathology, psychological factors, or advanced age. The failure of two surgical interventions in this patient emphasizes the need for comprehensive preoperative planning, with consideration of both the mechanical and neurological aspects of the condition. Moreover, the role of multimodal treatment cannot be overstated. While surgical interventions remain a cornerstone of FBSS management, non-surgical therapies, including pharmacological treatments, rehabilitation, and spinal cord stimulation, may offer meaningful alternatives for

patients with poor surgical outcomes. Finally, this case illustrates the importance of ongoing research into the long-term outcomes of FBSS treatments, as well as the need for innovative strategies to address this complex syndrome.(Cipollina, 2024; Miao et al., 2022; Witkam et al., 2022)

CONCLUSION

The management of Fail Back Surgery Syndrome (FBSS) requires an individualized approach tailored to the specific pathology and circumstances of each patient. This case illustrates the complexities of treating FBSS, particularly in elderly patients, where persistent symptoms may be driven by multifactorial causes, including inadequate decompression, epidural fibrosis, and mechanical instability. Surgical interventions, while critical, often present challenges, particularly when multiple procedures fail to provide lasting relief. This highlights the importance of careful preoperative assessment and patient selection. Additionally, the role of follow-up care is crucial, not only to monitor for complications but also to adapt treatment strategies based on patient outcomes. Multimodal approaches, combining surgical, pharmacological, and rehabilitative therapies, may provide the best chance for improving quality of life. This case underscores the need for continued research and individualized management plans to address the ongoing challenges associated with FBSS.

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