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Case Report

Case Report on the Outcome of the Scheduled Exercise and Manual Physiotherapy on A Male Patient with Failed Neck Surgery Syndrome

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ABSTRACT

Pain and discomfort after spinal surgery are known as "Failed Back Surgery Syndrome (FBSS)" and "Failed Neck Surgery Syndrome (FNSS)," respectively. Understanding what triggers FBSS/FNSS is essential for treating it. Outcomes can be affected by preoperative symptoms, patient expectations, and previous surgeries. Imaging techniques including X-rays, CT scans, and MRIs help doctors diagnose physical problems. After surgical attempts have failed, conservative treatment is often suggested. A 34-year-old Indian man after cervical surgery had neuropathic neck discomfort. Scheduled exercise and manual physiotherapy completed the treatment. Manual therapy addressed scar tissue adhesions and nerve mobility, while exercise improved neck strength, flexibility, and stability. Twelve weeks of three-times-a-week treatment. Manual physiotherapy uses soft tissue mobilisation, myofascial release, joint mobilisation, and nerve gliding to alleviate neck pain and restore function. The patient's neck pain, mobility, and neuropathic symptoms improved over twelve weeks after the intervention. The intervention also improved the group's flexibility, mobility, and pain management, as seen by a greater range of motion, decreased discomfort, and higher pressure pain threshold. Balance increased as well. NDI scores showed little improvement after the intervention. Moreover, the intervention improved physical performance, pain management, and balance, however further research could address neck impairment elements not addressed by the intervention (Table 1). A 34-year-old Indian guy with a history of cervical surgery was cured of chronic neuropathic neck pain after 12 weeks of exercise and manual physiotherapy. Manual treatment targeted scar tissue and nerve movement, while exercise relieved neck pain and mobility.

Keywords: Failed Back Surgery Syndrome (FBSS); Cervical Surgery; Neuropathic Symptoms; Neck Pain

INTRODUCTION

Pain following surgery is a well-known side effect that can result from either an unanticipated or unwelcome surgical side effect or when a planned surgical correction fails to work as intended. One of the preferred surgical approaches for treating cervical disc radiculopathy is anterior cervical decompression¹. There are several recognized postsurgical pain syndromes, such as chronic pain after total joint replacement, post-herniorrhaphy neuralgia, post-thoracotomy condition, and post-mastectomy syndrome, where the intended outcome of surgery is achieved but a new, unrelated discomfort arises. The latter describes situations in which, despite best efforts to treat anatomical abnormalities suspected of causing pain (such as stenosis,

discogenic pain, and disc herniation), symptoms continue or worsen. The most notable example of this is "failed back surgery syndrome (FBSS)"^{2,3}.

However, after neck surgery, some patients do not get the desired outcomes. "Failure of Back surgery (FBSS)" was a word used to indicate that the procedure's results didn't meet the patient's and the surgeon's expectations prior to surgery^{3,4}. Determining the reason for FBSS is important since each patient's specific cause of their discomfort should guide the course of treatment. The occurrence of FBSS may be decreased when the surgeon has knowledge of its most common causes. The number and nature of prior operations, the type of building condition, and the patient's mental condition must all be taken into account when determining expectations for the outcome⁵. In order for the surgeon to

agree on realistic expectations for the patient in order for their expectations to be compatible. An acceptable outcome for chronic pain is a VAS score rose by 1.8 units, indicating a roughly 30% change in pain. A VAS improvement of at least three, which translates to a pain reduction of at least 50%, is a highly satisfying result⁶.

Patients who exhibit chronic and medically untreatable discomfort in the neck and/or upper extremities despite having undergone at least one cervical spine surgery for a degenerative condition before are said to have “failed neck surgery syndrome (FNSS)”. Some prospective investigations found unfavorable long-term effects following surgery, including impaired neck function as well as muscular endurance, ongoing neck discomfort, higher upper-limb neural irritability as well as finger weakness, mental illness, as well as poor health-related quality of life⁷. The history is important to the assessment of FBSS, in particular the preoperative signs, a review of the procedure type, and an analysis of the pain trajectory to return. A thorough evaluation and upper quadrant therapy that considers all clinical and functional factors criteria is required due to the vast variety of possible anatomical anomalies connected to a surgically treated cervical disc hernia⁸. Currently, conservative therapy is more frequently documented at the lumbar level in patients who had unsuccessful surgery⁷.

A standard radiological evaluation involves X-rays as well as a CT or MRI scan. To evaluate alignment, the degree of degeneration, and instability, conventional Standing extension and flexion lateral views on radiographs are employed. Unless there MRI is preferred to CT and “multi-planar reforming (CT/multi-planar reconstructions [MPR])” if the condition is pseudoarthrosis is the best exam for the majority of individuals with FBSS⁹.

CASE PRESENTATION

A 34-year-old Indian male presented with a history of cervical surgery, which was performed one year ago. Despite the surgical intervention, the patient continued to experience persistent post-surgical pain in the neck region, primarily of neuropathic origin. Physical examination revealed restricted neck mobility, tenderness over the surgical scar, and positive signs of neuropathic pain, including allodynia and hyperalgesia.

Treatment Intervention

The patient received a comprehensive treatment approach involving scheduled exercise and manual physiotherapy to manage his persistent neuropathic neck pain.

Scheduled Exercise

A personalized exercise program was designed to address the patient’s specific needs and limitations. The exercise regimen aimed to improve neck strength, flexibility, and stability

while minimizing stress on the affected nerves. The program consisted of the following components:

- **Stretching Exercises:** Gentle neck stretches were prescribed to improve flexibility and reduce muscle tightness. The patient performed movements such as cervical flexion, extension, lateral bending, and rotation in a controlled manner to avoid aggravating the symptoms.
- **Isometric Exercises:** Isometric exercises were utilized to strengthen the neck muscles without causing excessive movement. The patient applied resistance using their hands while holding static positions such as cervical flexion or extension.
- **Gentle Resistance Training:** Low-intensity resistance exercises were incorporated to build neck muscle strength gradually. Resistance bands or light weights were used to add resistance during controlled neck movements.
- **Postural Training:** The patient was educated about maintaining proper neck posture during daily activities to reduce strain on the cervical spine. Ergonomic modifications were suggested for work and home environments to support a neutral neck position.

The scheduled exercise sessions were conducted three times a week for twelve weeks, with progressions based on the patient’s response and tolerance to the exercises.

Manual Physiotherapy

The patient received manual physiotherapy sessions twice a week for twelve weeks. The manual therapy techniques aimed to address scar tissue adhesions, improve tissue mobility, and enhance nerve glide around the surgical site. The manual physiotherapy interventions included:

- **Soft Tissue Mobilization:** Gentle massage and manipulation techniques were applied to the muscles and soft tissues around the surgical scar to reduce adhesions and promote tissue healing.
- **Myofascial Release:** Myofascial release techniques were employed to release tension and tightness in the fascial structures, thereby alleviating pressure on surrounding nerves.
- **Joint Mobilization:** Specific joint mobilization techniques were used to improve joint mobility in the cervical spine, reducing stiffness and promoting better movement.
- **Nerve Gliding Exercises:** Nerve gliding exercises were prescribed to improve the mobility and flexibility of the nerves affected by the surgery. These exercises aimed to reduce nerve compression and irritation, which contribute to neuropathic pain.

The manual physiotherapy sessions were tailored to the patient’s individual response and progress, with a focus on

gradually restoring normal neck function and minimising pain.



Fig. 1: A and B the patients has been given therapy sessions

Outcome

Over the course of the twelve-week intervention, the patient reported a gradual reduction in neck pain intensity and an improvement in neck mobility. Neuropathic pain symptoms, such as allodynia and hyperalgesia, decreased significantly. The patient’s reliance on pain medications decreased, and he expressed an enhanced ability to perform daily activities with reduced discomfort.

The research covers the evaluation of the impact of an intervention on physical mobility, neck damage, pain levels, pressure pain threshold, and overall balance of the group of persons. Following the implementation of the intervention, those involved demonstrated improvement in their range of motion across many movements, therefore implying an augmentation in both flexibility and mobility. However, the intervention did not appear to produce an important impact on neck impairment, as shown by an elevated NDI score. From a favourable perspective, there was a reduction in pain levels, an increase in the pressure pain threshold, and an overall improvement in balance. These findings suggest effective pain management and enhanced stability. In summary, the intervention produced encouraging outcomes in enhancing physical performance, pain management, and balance. However, additional research may be necessary to target certain aspects of neck disability that were not effectively targeted by the intervention.

DISCUSSION

The international multicenter prospective randomised controlled study found that spinal cord stimulation (SCS) decreased pain, improved health-related quality of life, and increased functional capacity in individuals with neuropathic pain owing to FBSS. Contrarily, conventional medical management (CMM) alone offered little to no pain relief or further advantages. The results of prior trials, which were recently reported, are consistent with the positive impact of SCS on neuropathic pain. North et al. discovered

Table 1: Findings of the parameters before and after the scheduled exercise and manual physiotherapy

Parameters	Baseline	Final
Range of Motion		
Flexion	30°	45°
Extension	20°	35°
Lateral Flexion	15°	25°
Rotation	40°	50°
Neck Disability Index (NDI)		
NDI Score	20	40
Visual Analog Scale (VAS) for Pain		
VAS Score	50	20
Pressure Pain Threshold (PPT)		
PPT Score	2.5	4
Overall Balance Index (OBI)		
OBI Score	70	90

that SCS was superior to re-operation as a therapy for ongoing discomfort following lumbosacral spinal surgery in a randomised controlled experiment⁹ This pain was mostly radicular in nature. In comparison, Patients with complex regional pain syndrome should not be limited to physical treatment alone. who were randomly assigned to SCS with physical therapy experienced much less pain, according to Kemler and others (2006). Patients with diabetic neuropathic pain who received SCS experienced much less pain than those who received sham stimulation, according to Tesfaye et al.¹⁰

Adhesions have been linked to either between 8% and 36% of FBSS. In comparison to an adherent nerve root, a nerve root constricted by Radicular pain was 3.2 times more probable to result from epidural fibrosis discomfort. Numerous research has confirmed that adhesiolysis reduces FBSS pain effectively¹¹. Although the cervical spine has less substantial there is more evidence for using adhesiolysis than the lumbar region, the existing data show cervical hydrolysis of adhesion is reliable, secure, and regarded as "standard-of-care." Both the cervical and lumbar regions may benefit from Radiofrequency ablation (RFA) and epidural injections of steroids (ESIs) are two interventions that are staples in the field of interventional pain management. Epidural fibrosis, L-FBSS (47,48), as well as most importantly C-FBSS (49), all results after spinal surgery have all been linked to ESI effectiveness. RFA is used to treat pain in a variety of ways, but its primary effectiveness with regard to the spine depends on its capacity to function at the level of the facet. RFA can be used in both sections of the spine when a patient has pseudo arthrosis (50) as a result of an incomplete fusion or destabilization of a neighboring level¹².

The effects of an exercise regimen combined with A patient with RWE, manual treatment of the rotator cuff, and scapular muscles FNSS-diagnosed upper quadrant pain and

dysfunction were minimal¹².

The care study protocol was improved by the EVIDENCE study protocol participants get while also ensuring patient safety. Technology advancements have made the insertion of SCS, a minimally invasive, reversible therapy, simpler. As a result, SCS is being performed by more and more doctors. SCS must be offered to the correct patient while using the proper tools and procedures. This involves careful consideration and sufficient implanter experience. Insofar as SCS practitioners use suitable patient selection criteria, tools, screening trials, and implantation methodologies, the findings of this study may be generalized. We sufficiently describe these techniques here so that others can reproduce our findings in the "real world delivery of health care."¹³

In the study, the upper quadrant of a patient having FNSS was painful and dysfunctional. underwent manual therapy as well as an exercise programme for six weeks. This helped to reduce the severity of the patient's neck discomfort impairment and improve the patient's neck functionality in the upper extremities. Future prospective clinical trials including functional assessment and more monitoring of patients with FNSS are required¹⁴.

An extensive study shows that considerable reductions in leg pain, functional ability, & health-related quality life outcomes that were shown beyond six months of SCS therapy are sustained beyond 24 months in a subset of individuals with FBSS. SCS therapy reduces pain in a subset of FBSS patients for 24 months, is linked to Patient satisfaction achieved, and functional capacity & quality of life show clinically meaningful increases¹⁵.

CONCLUSION

In conclusion, a holistic treatment strategy that includes structured physical activity and manual physiotherapy successfully treated chronic neuropathic neck pain in a 34-year-old Indian male who had cervical surgery. The 12-week workout programme consisted of three weekly sessions. The patient's needs were met by focusing on neck strength, flexibility, and stability while avoiding nerve strain. Thus, the individual's neck pain and mobility improved, improving their quality of life. The workout included stretching, isometric, light resistance, and posture training. These methods reduced allodynia and hyperalgesia, common in neuropathic pain. The patient's commitment to the exercise routine was crucial to achieving these positive results, as shown by the decreased dependence on analgesic medications and the significant increase in pressure pain threshold (PPT) from 2.5 to 4. Biweekly manual physiotherapy sessions over twelve weeks also improved the patient's overall condition. Manual treatments such as soft tissue mobilisation, myofascial release, joint mobilisation, and nerve gliding exercises targeted scar tissue adhesions, increased tissue mobility, and facilitated nerve glide near the operation site. From 70 to 90, the "Overall

Balance Index (OBI)" score showed this. The intervention improved physical performance, pain management, and balance, although the "Neck Disability Index (NDI)" score increased from 20 to 40. This shows that specialised therapies may be needed to better treat neck impairment. Exercise and manual physiotherapy helped post-surgical neuropathic neck pain. This case study supports complete treatment strategies for similar diseases, offering useful insights for further research and improvement to optimise the management of persistent neuropathic neck pain and patient well-being.

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