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COMPARASION OF EARLY AND LATE REHABILITATION FOR CERVICAL CORD INJURED PATIENTS FOLLOWED BY ANTERIOR CERVICAL DECOMPRESSION FUSION – A CASE SERIES REPORT.

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Background: Anterior cervical decompression and fusion (ACDF) is a commonly performed spinal surgical procedure used to stabilize cervical spinal cord injuries. It is considered minimally invasive and is associated with fewer post-operative complications compared to other surgical approaches. ACDF is typically indicated when conservative management fails or when symptoms worsen due to conditions such as epidural abscess, spinal instability, cervical spondylodiscitis, herniated disc, spondylolisthesis, compression myelopathy, spondyloptosis, and spinal curvature misalignment. Despite surgical success, postoperative recovery largely depends on timely and appropriate rehabilitation.

Purpose: To identify and compare the effectiveness of early versus late rehabilitation in patients with cervical spinal cord injury following ACDF surgery.

Methods and Materials: This case series included four patients diagnosed with cervical spinal cord injury due to traumatic causes and infective spondylodiscitis who underwent ACDF surgery. Among them, two patients received early rehabilitation immediately after surgery, while the other two experienced delayed rehabilitation due to lack of awareness and presence of complications. Recovery outcomes were assessed pre- and post-rehabilitation using standardized tools, including the American Spinal Cord Injury Association (ASIA) Impairment Scale and the Functional Independence Measure (FIM).

Results: Patients who received early rehabilitation demonstrated faster and more significant improvements in functional outcomes compared to those who underwent delayed rehabilitation. Early intervention contributed to better recovery in terms of muscle strength, sensory function, mobility, and independence. In contrast, delayed rehabilitation was associated with slower recovery and increased risk of secondary complications.

Conclusion: Rehabilitation plays a critical role in enhancing recovery following ACDF surgery. Early initiation of rehabilitation significantly improves functional outcomes, quality of life, and independence by enhancing muscle power, sensory integration, bladder and bowel control, balance, and coordination. Additionally, prevent complications associated with prolonged immobilization. Therefore, early rehabilitative intervention should be considered an essential component in the management of cervical spinal cord injury patients.

Key words: Anterior cervical decompression fusion, Rehabilitation, Spondylodiscitis, Spondyloptosis, Spinal instability.