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360 degrees VS Anterior fusion in cervical subluxation – our institutional experience.

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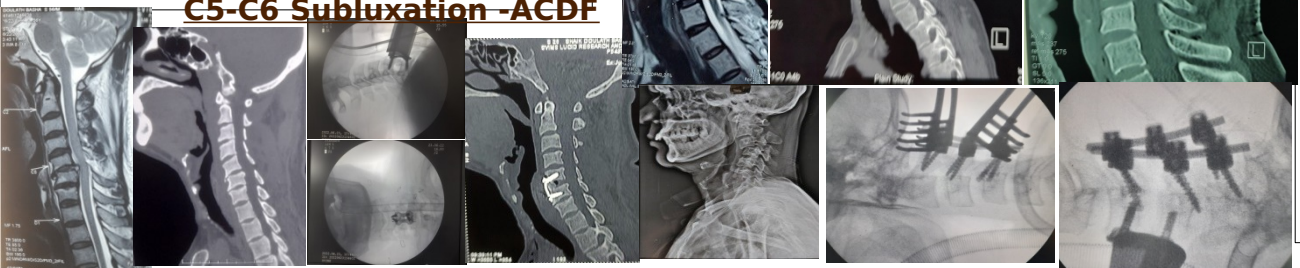
INTRODUCTION

With any traumatic spine injury, it is critical to assess the spinal stability. In this study we divided the cases using AO spine. The options of surgical approach for unilateral or bilateral facet injuries include a stand-alone anterior or posterior approach, a combination of both and a staged anterior/posterior/anterior approach. However, there is substantial controversy regarding the most appropriate surgical management, and literature suggests that it depends on approach preferred by the surgeon.

AIMS / OBJECTIVES

To evaluate the efficacy of 360 degrees fusion VS anterior-only approach, for treatment of traumatic sub axial cervical spine injuries

C5-C6 Subluxation -ACDF



MATERIALS / METHODS

This retrospective study was conducted at the Department of Neurosurgery,SVIMS, Tirupati, from 2014 to December 2023. The study included 86 adult patients with acute traumatic subaxial cervical spine injuries, specifically Type C injuries according to the AO spine classification, who presented to the Trauma Unit of this tertiary center. Only patients with a single breath count greater than 15 were included.

C3-C4 subluxation – C2-C4 lateral mass fusion and C3-C4 ACDF

RESULTS & DISCUSSION

Out of the 86 cases performed, 70 were male patients and 16 were female patients. The most common injury level was at C4-5 (70 patients). C3-C4 subluxation in 5 patients, C5-C6 in 8 patients and C6-C7 in 3 patients. Postoperative complications included neurological deterioration in 5 patients (5.8%), with two patients initially worsening but later improving. At late follow-up, 2 patients developed radiculopathy, and 1 patient required revision surgery due to loss of reduction. Persistent dysphagia was reported by 3 patients (3.4%). Additionally, 6 patients expired due to ventilator-associated pneumonia

Discussion

Decision making regarding reduction and surgical approach for cervical spine injuries remains controversial. The AO classification, specifically Type C injuries, represents a complex pattern requiring reduction, decompression, fusion, and stabilization. This study compares treatment outcomes for Type C injuries using an anterior-only approach versus a combined anterior and posterior approach. Previous research by Gok et al. (2008) found similar complication rates for both methods, but a lower incidence of adjacent segment degeneration with the combined approach. Indications for 360-degree fusion include acute spinal trauma, post-laminectomy kyphosis, kyphotic deformity, multilevel spondylosis, and OPLL.

CONCLUSION

Surgical treatment of sub axial cervical traumatic injuries by means of anterior reduction decompression and fusion is efficient regarding fusion state and the patients' satisfaction. Consequently, the anterior approach alone is recommended in cases with neurological impairment and in patients with medical comorbidities or when a short operative time is preferred.Compared with the combined anterior and posterior approach, the anterior-only procedure takes shorter time and appears to be less traumatic to patients.However, in neurologically stable patients posterior instrumentation is the appropriate procedure, followed again by the anterior approach to bony graft placement along with plate and screw fixation (360-degrees approach) is warranted.