

## The Role of Early Surgical Intervention After Acute Traumatic Central Cord Syndrome

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### Introduction

ATCCS is the most common type of spinal cord injury. The benefits of early surgical decompression remain controversial. Compare and evaluate the preoperative management, clinical outcomes, and complications of early ( $\leq 24$  hours) and delayed ( $> 24$  hours) surgical decompression in patients diagnosed with acute traumatic central cord syndrome (ATCCS).

### Methods

Between January 2011 and April 2015, 68 patients were diagnosed with central cord compression at a single institution; records for patients with relevant data who were treated surgically for ATCCS, either with early decompression (ED;  $\leq 24$  hours between admission and surgical intervention) or delayed decompression (DD;  $> 24$  hours), were analyzed and the two groups were compared.

### Results

Twenty-three patients were studied (21/23 males, 91.3%). Fifteen patients underwent ED and 8 underwent DD. The mean age was 61.2 years and mean number of comorbidities per patient was 1.7 (range 0-4); no significant between-group differences were found. Ground-level fall was the most common cause of ATCCS (15/23, 62.5%). At admission, the mean upper-extremity American Spinal Injury Association score was  $25.4 \pm 13.4$  (range 5-50), and lower-extremity score was  $40.2 \pm 11.1$  (range 17-50); the mean modified Japanese Orthopaedic Association score was  $10.0 \pm 3.9$  (range 5-16). Mean time to surgical intervention for the ED group was  $21.6 \pm 4.9$  hours and for the DD group it was  $69.6 \pm 26.4$  hours. Both patient groups experienced an overall improvement in neurological status ( $P < .01$ ), with the ED group experiencing the largest improvement. For all 23 patients, the mean length of stay was  $7.3 \pm 2.6$  days, follow-up was  $27.4 \pm 15.7$  months, mortality rate was 0%, severe complication rate was 0%, and complication rate was 26.1%; no significant between-group differences were found.

### Conclusions

Early surgical decompression is a reasonable practice, with proven safety in medically stable patients, which allows for improved neurological outcomes at long-term follow-up.

### Learning Objectives

ATCCS is the most common type of spinal cord injury. The role of early surgical decompression is has proven safe and beneficial in medically stable patients.