Surgical Treatment of Lower Cervical Fracture-Dislocations with Spinal Cord Injuries by Anterior Approach
Five-to 15-Years Follow-up

Hua Guo, Biao Wang
Spine Surgery, Hong Hui Hospital, Xi’an, Shanxi, China
ABSTRACT

PURPOSE

Lower cervical fracture-dislocations are often caused by flexion-stretch injuries, and frequently combined with spinal cord injuries, which can cause seriously damage. Up to present, there is no consensus on treatment denominator for lower cervical fracture-dislocations. In recent years, anterior approach surgery with directly decompression and reduction has been widely accepted. However, large sample size, long-term follow-up study to assess the clinical efficacy of anterior approach is rarely seen in the literature. Through this retrospective cohort study we assessed the clinical outcomes of anterior approach surgery.
METHODS

From January 2000 to January 2010, 312 patients with lower cervical spine fracture-dislocations with spinal cord injuries treated by anterior approach were retrospectively analyzed. 218 cases (70%) were data integrity and obtained follow-up. The average age of 218 patients was 41.5 years (ranged 21-72), including 121 males and 97 females. Classified by the degree of dislocation, we had grade I: 92 cases, grade II: 65 cases, grade III:50 cases and grade IV: 11 cases. All cases underwent skull traction (3-6kg) for cervical immobilization and avoiding the secondary spinal cord injury before surgery, then anterior discectomy and reduction were performed. If the reduction failed, corpectomy was performed for further reduction.
RESULTS

The follow-up time was 8.3 years in average, range from 5 to 15 years. Complete reduction was got in 178 cases (81.7%), and 40 cases (18.3%) obtained more than 90% reduction. The postoperative radiologic indexes of all patients were higher than the preoperative ones (P<0.05), but there was no statistical difference between post-operation and the final follow-up (P>0.05). The cervical spine normal intervertebral height and physiological curvature were maintained, and there were no plates or screws associated complications observed during the follow-up. 163 cases (74.8%) presented with neurological functional recovery, and the remaining 55 patients (25.2%) had no significant changes of neurological function.

Xi’an Hong Hui Hospital, Xi’an, Shanxi, China
CONCLUSION

For lower cervical fracture-dislocations with spinal cord injuries, satisfied clinical outcomes can be obtained by choosing anterior surgery approach. By restoring the normal structure of cervical spine and promoting neurological functional recovery, anterior approach achieved good long-term curative effect.

Keywords cervical spine; spinal fracture-dislocations; anterior approach.
Disclosure of Conflicts of Interest

We certify that all our affiliations with or financial involvement in, within the past 5 years and foreseeable future, any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript are completely disclosed.
Thank you ...