

Multilevel Anterior Cervical Decompression and Fusion: Cervical Range of Motion and Clinical Outcomes.

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Abstract

Background: Multiple level anterior cervical discectomy and fusion (ACDF) is indicated for those who suffer from multilevel stenosis or compression of the spinal canal. It was reported that this intervention would unfortunately lead to a loss of normal cervical range of motion (CROM). Although, fewer studies have demonstrated the exact impact of the procedure on CROM. In our study, short and midterm postoperative CROM was described. Methods: Ninety patients who underwent ACDF were followed up postoperatively for at least 3 months. Active CROM was measured in all patients preoperatively and in postoperative follow-ups by cervical spine X-rays in lateral dynamic view using Cobb's angle method. Results: Unfortunately, postoperative CROM was significantly diminished. At the short-term (3 months) follow-up there was a great limitation in CROM. While an obvious increase in CROM at the midterm (6 months) follow-up was observed in flexion especially. The reduction in global ROM (calculated as preoperative global ROM – 6 months postoperative ROM) was 4.1 and the reduction rate (calculated as reduction ROM divided by preoperative ROM) was 9.5%. The recovery ROM (calculated as 6 months postoperative ROM – 1 month postoperative ROM) was 8.2. The recovery rate (calculated as recovery ROM divided by 1 month postoperative ROM) was 26.5%. Conclusion: Active CROM following multiple level ACDF was obviously diminished. The most affected motion after surgery was flexion. It was noticed that at the short-term follow-up CROM would be more limited while after further follow up CROM was obviously improved even in neck flexion motion.