ACDF with Total En Bloc Resection of Uncinate in Foraminal Stenosis of the Cervical Spine: Comparison with Conventional ACDF

**Kyung-Soo Suk, MD, PhD**, Seoul, Republic of Korea  
**Hak-Sun Kim, MD, PhD**, Seoul, Republic of Korea  
**Seong-Hwan Moon, MD, PhD**, Seoul, Republic of Korea  
**Hwan-Mo Lee, MD, PhD**, Seoul, Republic of Korea  
**Jae-Ho Yang, MD**, Seoul, Republic of Korea  
**Sung-Yub Jin, MD**, Seoul, Republic of Korea  
**Pierre M. Mella, MD**, Seoul, Republic of Korea

**Introduction:** Foraminal stenosis is a major cause of radiculopathy. Most of the foraminal stenosis is due to hypertrophied uncinate process or osteophyte from uncovertebral joints. To relieve the radiculopathy, ACDF is the most frequently performed procedure. No studies have been performed comparing ACDF with and without uncinate resection. Purpose of this study was to find out any differences in clinical outcomes of ACDF depending on uncinate resection or not.

**Methods:** 606 patients who underwent ACDF due to foraminal stenosis were included in this study. Minimum follow-up was 2 years. ACDF due to soft disc herniation, myelopathy, AP combined surgery, or follow up less than 2 years were excluded in this study. Group U was consisted of 275 patients who underwent uncinate resection and group N was consisted of 331 patients who did not undergo uncinate resection. Total en bloc resection of uncinate was performed using osteotome. After resection of uncinate, we observed the nerve root and completely released any compression (Figure 1). Clinical outcomes were measured by preoperative and follow up neck pain visual analogue scale (VAS), arm pain VAS, neck disability index (NDI), and patient reported subjective improvement rate. Follow up was performed on postoperative 6 weeks, 3, 6, 9, 12, 18, and 24 months. Statistical analysis was performed by independent sample t-test and paired sample t-test.

**Results:** Preoperative Neck pain, arm pain, and NDI were similar between the two groups. Neck pain VAS, arm pain VAS, NDI, and patient reported subjective improvement rate were all improved significantly after the surgery (at 6-week follow-up) in both groups and the improved outcomes were maintained during 24 month follow-up. There were no significant differences between the two groups in overall clinical outcomes including neck pain VAS, NDI, subjective improvement rate. There were significant differences between the two groups in arm pain at all times. Arm pain was significantly less in uncinate resection group at all times (Figure 2).
Presentation #47 (cont.)

**Conclusion:** Overall clinical outcomes were significantly improved at 6 weeks after the ACDF depending on uncinate resection or not. After 6 weeks, there was no significant improvement. There were no significant differences between the two groups in terms of neck pain, NDI, and subjective improvement rate. However, arm pain was significantly less in uncinate resection group at all times.

![Figure 1. Foramen was widened after the uncinate resection](image1.jpg)

![Figure 2. Arm pain VAS](image2.jpg)

- The FDA has not cleared the drug and/or medical device for the use described (i.e., the drug and/or medical device noted with an * is being discussed for an "off label" use). See inside back cover for information.