



A comparison of changes over time in cervical foraminal height after tricortical iliac graft or polyetheretherketone cage placement following anterior discectomy

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OBJECT: The authors prospectively evaluated cervical foraminal height changes after anterior cervical discectomy and fusion. To their knowledge, this prospective study is the first in which foraminal height changes over time are compared following the placement of a tricortical graft or a polyetheretherketone (PEEK) cage. **METHODS:** The patients were randomly divided in two groups. In one group, 30 patients underwent anterior cervical microdiscectomy and free bone graft (FBG) insertion at 46 levels via the Smith-Robinson technique. The FBG was harvested from the right iliac crest. Another 35 patients underwent the same operation, but fusion was provided by the insertion of PEEK intervertebral cages at 41 levels. Fusion status and the C2-7 Cobb angle, interspace height, and foraminal height changes were observed on anterior, lateral, and oblique radiographs obtained at the 18-month follow-up examination. There were no differences between the groups with regard to clinical recovery, fusion status, and Cobb angle. A significant interspace height reduction was observed in the FBG group during the 1st postoperative month. In the FBG group, the mean heights (+/- standard deviation) of the foramina were 8.2 +/- 2.7 mm preoperatively, 10.8 +/- 2.6 mm on postoperative Day 2, and 8.1 +/- 1.5 mm after 18 months of follow up. In the PEEK cage group, the mean heights were 8.4 +/- 2.8 mm preoperatively, 10.3 +/- 1.1 mm on postoperative Day 2, and 9.6 +/- 1.2 mm after 18 months of follow up. The increase in foraminal height was significantly preserved at the 6th, 12th, and 18th months in the cage group.

CONCLUSIONS: In both groups the foraminal height increased sufficiently and the nerve root was decompressed postoperatively. The PEEK cages may provide sufficient preservation of foraminal height even 1.5 years after the operation.

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