

Autologous bone graft versus PEKK cage for vertebral replacement after 1- or 2-level anterior median corpectomy.

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Abstract

OBJECT Anterior cervical corpectomy with fusion has become the most widely used procedure for the treatment of multilevel cervical stenosis. Although an autologous bone graft is the gold standard for vertebral replacement after corpectomy, industrial implants have become popular because they result in no donor-site morbidity. In this study, the authors compared clinical and radiological results of autologous iliac grafts versus those of bone-filled polyetherketoneketone (PEKK) cage implants. **METHODS** The clinical and radiological data of 46 patients with degenerative multilevel cervical stenosis and who underwent 1- or 2-level anterior median corpectomy between 2004 and 2012 were analyzed. The patients in Group 1 were treated with vertebral replacement with an autologous iliac graft, and those in Group 2 were treated with a PEKK cage implant. Each patient also underwent osteosynthesis with an anterior plate-screw system. Visual analog scale (VAS) and European Myelopathy Scale scores, loss of height and regional cervical lordosis angle, and complication rates of the 2 groups were compared. **RESULTS** The mean follow-up time was 20 months. In both groups, the VAS and European Myelopathy Scale scores improved significantly. The loss of height was 3.7% in patients with iliac grafts and 5.3% in patients with PEKK implants. The rates of osseous fusion were similar in Groups 1 and 2 (94.7% and 91.3%, respectively). At the end of the follow-up period, none of the patients complained about donor-site pain. One patient in Group 1 suffered a fracture of the iliac bone that required osteosynthesis. Four patients in Group 2 had to receive revision surgery for cage and/or plate-screw dislocation and new neurological deficit or intractable pain. **CONCLUSIONS** Preoperative pain and radicular and myelopathic symptoms improve after decompression irrespective of the material used for vertebral replacement. The use of PEKK cages for vertebral replacement seems to result in a higher risk of implant-related complications. A prospective randomized study is necessary to supply evidence for the use of autografts and artificial implants after anterior cervical corpectomy with fusion.

KEYWORDS:

ACCF; ACCF = anterior cervical corpectomy with fusion; EMS = European Myelopathy Scale; PEEK; PEKK; PEKK = polyetherketoneketone; VAS = visual analog scale; autologous bone graft; cage; cervical; corpectomy