

A prospective, concurrently controlled, randomized, multicenter trial of an anterior Bagby and Kuslich cervical fusion cage (BAK/C; Sulzer Spine-Tech, Minneapolis, MN) for treatment of degenerative disc disease of the cervical spine.

OBJECTIVES: To report clinical results with maximum 24-month follow-up of fusions performed with the BAK/C fusion cage.

SUMMARY OF BACKGROUND DATA: Threaded lumbar cages have been used during the past decade as a safe and effective surgical solution for chronic disabling low back pain. Threaded cages have now been developed for use in anterior cervical interbody fusions to obviate the need for allografts or autogenous bone grafting procedures while providing initial stability during the fusion process.

METHODS: Patients with symptomatic cervical discogenic radiculopathy were treated with either anterior cervical discectomy with uninstrumented bone-only fusion (ACDF) or BAK/C fusion cage(s). Independent radiographic assessment of fusion was made and patient-based outcome was assessed by visual analog pain scale and a Short Form (SF)-36 Health Status Questionnaire.

RESULTS: Data analysis included 344 patients at 1 year and 180 at 2 years. When the two cage groups (hydroxyapatite-coated or noncoated) were compared with the ACDF group, similar outcomes were noted for duration of surgery, hospital stay, improvements in neck pain and radicular pain in the affected limb, improvements in the SF-36 Physical Component subscale and Mental Component subscale, and the patients' perception of overall surgical outcome. Symptom improvements were maintained at 2 years. A greater percentage of patients with ACDF needed an iliac crest bone harvest than did BAK/C patients (67% vs. 3%). Successful fusion for one-level procedures at 12 months was 97.9% for the BAK/C groups and 89.7% for the ACDF group ($P < 0.05$). The complication rate for the ACDF group was 20.4% compared with an overall complication rate of 11.8% with BAK/C. There was no difference in complications that necessitated a second operative procedure.

CONCLUSIONS: These results demonstrate that outcomes after a cervical fusion procedure with a threaded cage are the same as those of a conventional uninstrumented bone-only anterior discectomy and fusion with a low risk of complications and rare need for autogenous bone graft harvest¹⁾.

¹⁾

Hacker RJ, Cauthen JC, Gilbert TJ, Griffith SL. A prospective randomized multicenter clinical evaluation of an anterior cervical fusion cage. *Spine (Phila Pa 1976)*. 2000 Oct 15;25(20):2646-54; discussion 2655. PubMed PMID: 11034651.

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