

Lumbar total disc arthroplasty in patients older than 60 years of age: a prospective study of the ProDisc prosthesis with 2-year minimum follow-up period

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OBJECT: The authors conducted a prospective longitudinal study to obtain outcome (minimum follow-up period 2 years) regarding the safety and efficacy of single-level lumbar disc (ProDisc prosthesis) replacement in patients 60 years of age or older.

METHODS: This prospective analysis involved 22 patients treated in whom the lumbar ProDisc prosthesis was used for total disc arthroplasty. All patients presented with disabling discogenic low-back pain (LBP) with or without radicular pain. The involved segments ranged from L-2 to S-1. Patients in whom there was no evidence of radiographic circumferential spinal stenosis and with minimal or no facet joint degeneration were included. Patients were assessed preoperatively and outcome was evaluated postoperatively at 3, 6, 12, and 24 months by administration of standardized tests (the visual analog scale [VAS], Oswestry Disability Index [ODI], and patient satisfaction). Secondary parameters included analysis of pre- and postoperative radiographic results of disc height at the affected level, adjacent-level disc height and motion, and complications. Twenty-two (100%) fulfilled all follow-up criteria. The median age of all patients was 63 years (range 61-71 years). There were 17 single-level cases, four two-level cases, and one three-level case. Statistical improvements in VAS, ODI, and patient satisfaction scores were observed at 3 months postoperatively. These improvements were maintained at 24-month follow-up examination. Patient satisfaction rates were 94% at 24 months (compared with 95% reported in a previously reported ProDisc study). Radicular pain also decreased significantly. Patients in whom bone mineral density was decreased underwent same-session vertebroplasty following implantation of the ProDisc device(s). There were two cases involving neurological deterioration: unilateral foot drop and loss of proprioception and vibration in one patient and unilateral foot drop in another patient. Both deficits occurred in patients in whom there was evidence preoperatively of circumferential spinal stenosis. There were two cases of implant subsidence and no thromboembolic phenomena.

CONCLUSIONS: Significant improvements in patient satisfaction and ODI scores were observed by 3 months postoperatively and these improvements were maintained at the 2-year follow-up examination. Although the authors' early results indicate that the use of ProDisc lumbar total disc arthroplasty in patients older than 60 years of age reduces chronic LBP and improves clinical functional outcomes, they recommend the judicious use of artificial disc replacement in this age group. Until further findings are reported, the authors cautiously recommend the use of artificial disc replacement in the treatment of



chronic discogenic LBP in patients older than age 60 years in whom bone quality is adequate in the absence of circumferential spinal stenosis.
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