

Clinical Outcome of PLIF Using the Minimally Invasive B-Twin Expandable Spinal Spacer

Kleffmann J.¹, Kuhn T.J.², Busch C.², Schuckart C.², Mewes H.², Wilke A.³

¹Philipps-Universität Marburg; ²Wirbelsäulenzentrum Marburg;

³Elisabeth Klinik Olsberg; Abt. Orthopädie/Unfallchirurgie

Objective: To evaluate the outcome of the posterior lumbar interbody fusion (PLIF) using the B-Twin Expandable Spinal Spacer (ESS) for patients with chronic lower back pain due to Degenerative Disc Disease and spondylolisthesis °1.

Methods: A total of 94 patients (women 53, men 41) with chronic lower back pain underwent surgery from 2003 to 2006. Inclusion criteria comprised disabling lower back pain due to degenerative disc disease and/or spondylolisthesis °1, pain for > 6 month and no response or inadequate response to conservative treatment. The B-Twin is an expandable spacer made of titanium that, once in place, can be expanded up to three fold of its initial diameter (5mm cylinder when collapsed). In all cases the B-Twin was implanted "stand-alone".

Results: The mean age of the patients was 59.5 years (standard deviation 10.5 y). A visual analogue scale (VAS), the Oswestry Disability Index (ODI) and a medical examination were used to measure lower back pain, leg pain and disability. The mean ODI improved from 36.61 preoperative to 22.80 at follow up (p<0.01). The mean VAS improved from 8.70 preoperative to 3.57 directly postoperative and 3.74 at follow-up examination (p<0.01). Altogether 85 patients (90.43%) were satisfied at follow-up examination.

Conclusions: The treatment of choice for lower back pain related to degenerative disc disease is PLIF using spacers. Clinical trials confirm fusion rates exceeding 90%. The size and the fixed dimensions of conventional spacers results in sacrificing posterior stabilizing structures and secondary neurological damage. Owing to its expandable design the B-Twin reduces these risks.

Our results demonstrate that PLIF using B-Twin is s a save technique and provides good results in treatment of patients with chronic lower back pain.