

A new concept for less invasive treatment of multisegmental degenerative changesW. Lack¹, M. Nicolakis¹, A. Zeitelberger²¹Evangelisches Krankenhaus, Orthopädie, Wien, Österreich²Krankenhaus Mistelbach, Orthopädie, Mistelbach, Österreich

The operative treatment of multiple lumbar degenerations including degenerative lumbar scoliosis is discussed controversially. The conventional long-distance fusion in combination with decompressions and more-level-PLIF can be a life-threatening operation for patients at an age >70 years because of duration and invasivity. Therefore we tried to establish a new less invasive concept of lumbar fusions of 3 or more segments. This concept consists of the combination of new minimal or less invasive techniques as AxiaLIF, XLIF, TLIF and percutaneous facet-screws minimizing the morbidity and optimizing the stability in long-distance lumbar fusions. Included are AxiaLIF and XLIF or 3-level-AxiaLIF and percutaneous facet screws in degeneration L3-S1 or in cases of adjacent segment disease both cranially and caudally; late-onset-scoliosis was treated by AxiaLIF S1-L4, concavesided microscopic decompression, TLIF and pedicle-system-spondylodesis, followed by convexsided percutaneous frame-like facet-screw-instrumentation. Our experiences with this new concept from 2/08 to 4/09 demonstrate 12 patients, 11 female, 1 male, av. age 70 years (57-84). Indications were 5 late-onset-scolioses, 5 multisegmental degenerations and 2 cranial and caudal adjacent segmental diseases after fusion L3/4/5. Technique included 12 AxiaLIF (9 S1-L4, 3 S1-L3, to our knowledge the only 3-level AxiaLIF-cases reported worldwide) altogether 27 segments), 9 TLIFs in 5 patients, 2 XLIFs, 27 segments instrumented with pedicle screws (33 screws) and 9 patients with percutaneous facet screws (25 screws). 9 segments were decompressed by minimal invasive technique. Pedicle-instrumentations and XLIFs were performed under Neurovision-control of nerve roots. The average OP-time was 145 minutes (85-190), i.e. 45 minutes/segment of both intercorporeal and posterior fusion, not included the time for decompression; lordosis of lumbar spine was improved from 28° to 40°. VAS improved from 7,0 to 3,4. 4 complications were: 1 herniation L4/5 after AxiaLIF with L4-paresis, requiring discectomy, 1 case of pseudarthrosis L3/4 after XLIF, treated successfully by percutaneous facet screws, 1 superficial infection, healed by debridement and secondary suture and 1 lesion of sigmoid by AxiaLIF-approach, treated by suture and anus praeter for 3 months. Radiologic controls showed no less of correction or migration of implants. The first experiences with this new treatment demonstrate a rather short OP-time with some complications basing on the learning curve. Long-term investigations will show, if this new concept can be a successful alternative to conventional operations.