

PLIF'S AND PLATES IN INSTABILITY OF THE LUMBAR SPINE

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Between may 1986 and may 1989 33 patients with several types of spondylolisthesis were operated on by reduction of the slip and restoring normal disc space height with homologeous interbody plugs and fixation with pedicular screws and VSP (steeffe's) spine plates. Only one pseudo-arthrosis occurred in a patient with a 3 level slip. Results are good with short morbidity and easy postoperative management regimens.

Key Words : Posterior lumbar interbody fusion, spondylolisthesis, internal fixation of the lumbar spine.

Spine fusion has been a controversial topic since the first procedures were performed by Hibbs and Albee in the early 1900's.

Fusion is performed in the unstable spinal segment that one wants immobile. Internal fixation increases rigidity and gives a higher rate of fusion. Use of pedicular screws and VSP spine plates allows correction of deformity, restoration of disc space height, and rigid fixation of that correction during consolidation by fusion. The increased fusion rate and decreased pseudoarthrosis rate give better results and can ease postoperative management regimens.

MATERIALS AND METHODS

Between may 1986 and may 1989 11 patients with symptomatic isthmic spondylolisthesis, 8 patients with degenerative spondylolisthesis and spinal stenosis, and 14 multi operated patients with post-laminectomy spondylolisthesis the procedure was performed, mostly on one level.

After decompression and excision of the disc arc completed, the transpedicular screws are inserted through the pedicles and into the bodies of the adjacent vertebrae. Spine plates are then placed over the screws, the vertebrae are distracted to gain alignment and normal disc space height thus enlarging the neural foramina (fig. 1).

With a set of broaches the interspace is cleaned. With the use of quadrangular chisels the end plates are prepared and the interbody plugs, made to measure, are inserted. The interbody plugs are homologeous cancellous grafts, which are placed in a cancellous bed under compression with good blood supply.

After the insertion of the plugs, the spine plates are removed and shorter spine plates are placed over the screws, homologeous bone is placed over the remain-

der of the facetjoints pedicles and transverse processes, a compression force is applied over the screws and the nuts are fixed (Fig.2).

So the screws and plates are firstly a tool for alignment and restoring disc space height and secondly a fixation device.

RESULTS

31 in 33 cases were treated on just one level. All interbody and postcrotalcral bilateral fusions consolidated. There were no dislocations of the interbody plug. Decompression was difficult in the multi-operated patients because of adhesions and scar tissue on the dural sac. Some dural sac damages and repairs were necessary, but this did not influence the final results. There were no infections, no thrombosis and no neurological problems.

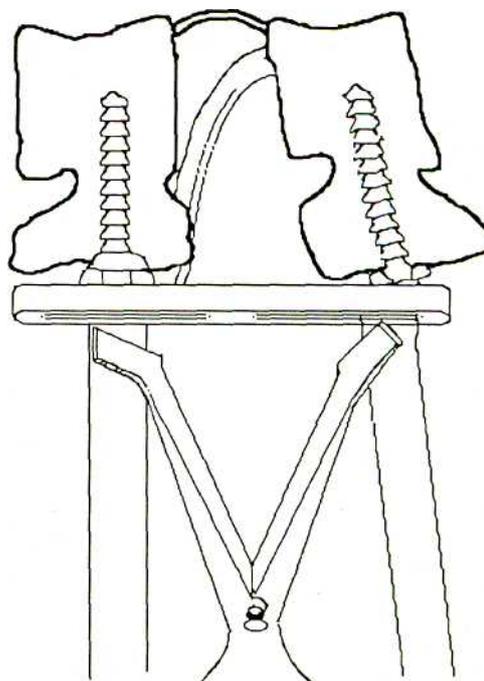


Fig 1.

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One patient with a 3 level isthmic spondylolisthesis had a pseudoarthrosis on one level and she needed a second operation. The internal fixation device was removed because of broken screws and the correction of deformity was lost. The spine was fused in situ.

DISCUSSION

The procedure is demanding and takes time.

Average operating time is 3 to 4 hours, especially in the multiprocted patients or the multi level procedures.

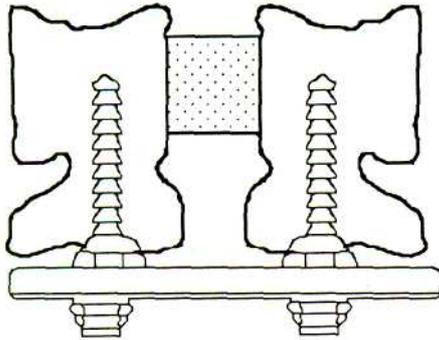


Fig. 2.

Any degree of destabilizing laminectomy can be performed because rigid restabilisation is immediately assured. Decompression can be performed extensively to free the nerve roots completely. Visualisation of unsuspected pathologic findings is possible, even an undetected lateral disc protrusion can be seen.

Postoperative regimen is easy, because the patients are mobilised on the fifth postoperative day and are usually ambulatory without any aid after ten days. The only restrictions are heavy lifting or extreme twisting.

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