

CASE REPORT

Posterior Decompression and Stabilization at L5-S1 Degenerative Spondylolisthesis Grade -1 with Pedicle Screw.ASM Qamrul Hasan¹, Md. Nazrul Islam²**Abstract:**

Degenerative spondylolisthesis with spinal stenosis is common in elderly patients. When symptomatic, the resultant neurogenic claudication often leads to a diminished quality of life. A nonsurgical approach is an appropriate first step. After failure of nonsurgical step, posterior decompression and instrumentation may be indicated in the treatment of select cases of L5-S1 spondylolisthesis. The technique involves proper decompression with the placement of cortical screws from the base of the articular process of S1 to the pedicle of L5. This study evaluates the anatomical applications and clinical results of this technique. In this case, the patient was relieved of claudication pain with radiculopathy after surgical intervention. No complications due to screw placement occurred. It is concluded that this procedure can be used safely and reliably for the spondylolisthesis of L5- S1 with the help of fluroscope. The procedure is technically demanding and should be limited to those surgeons who are comfortable with the method.

Introduction:

Degenerative spondylolisthesis causes degenerative changes in surrounding facet joints or discs due to segmental instability which results in back pain and /or neurological symptoms caused by dural sac or nerve root compression. When such symptoms are present, non-surgical or surgical treatment is conducted according to the degree of displacement and symptom severity. The authors treated an adult female patient with grade -1 degenerative spondylolisthesis with neurogenic claudication pain with right sided radiculopathy.

Case report:

An 45 years old female patient admitted in Holy Family Red Crescent Medical College Hospital with the complain of low back pain for three years with radiation of pain to right lower limb. She felt pain during walking and was relieved by rest. But gradually her condition deteriorated by decrease of the claudication distance. At last she felt pain even in standing position. All types of non-surgical treatment failed. On examination, sensory functions diminished along right S1 distribution with right sided 45⁰ limitation in straight leg raising test. Hematology, Tuberculin testing and chest X-ray did not produce any specific finding.

X- ray lumbosacral spine showed grade-1 spondylolisthesis at L5-S1. Magnetic resonance showed spinal stenosis with disc degeneration at L5-S1 with foraminal stenosis.

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Figure-1: X-ray L-S spine lateral view showing spondylolisthesis at L5-S1 (Grade-1).



Figure-2: Sagittal T-2 weighted MR images showing degeneration of L5-S1 disc with compression over the dural sac.

Operation :

The patient underwent decompression by laminectomy with foraminotomy at L5-S1 on the right side by posterior midline exposure from L4 to S1. At the beginning of decompression dural colour was bluish but became white at the end of decompression. Stabilization by securing of posterior S1 pedicle to L5 VB with transpedicular screws was done and those were then connected with rods. This fixation per operatively was confirmed by fluoroscope. There were no surgical complications.

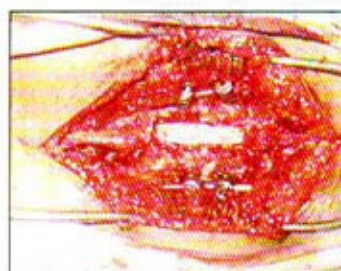


Figure-3: Per-operative picture showing decompression and stabilization by pedicle screws.

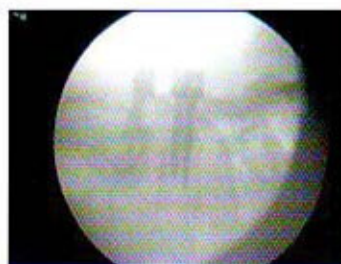


Figure- 4: Per-operative fixation confirmed by fluoroscope.

Post-operative course:

The patient did well throughout her hospitalization and had no complications. She started walking without feeling pain on post-operative day-4 and was discharged on post-operative day -10 after removal of stitches.



Figure- 5: Post -operative X-ray of L-S spine A/P and lateral views showing fixation by pedicle screws and rods.



Figure- 6: Patient is walking on the fourth post-operative day without feeling pain.

Discussion:

The natural history of degenerative spondylolisthesis involves degenerative changes in surrounding facet joints or discs due to segmental instability with resulting back pain or neurological symptoms due to compression of the dural sac or nerve root. With the passage of time, disc degenerative changes progress and patient condition deteriorates. This patient was a 45 years old woman and suffered from low back pain with history of claudication pain and radiculopathy in right lower limb. X-ray L-S spine showed spondylolisthesis grade -I at L5-S1. MRI of L-S spine showed disc degeneration at L5-S1 with canal stenosis. According to Sha et al¹ after treating a case of L5-S1 spondylolisthesis conservatively, a 14 year follow up through adolescence to adulthood, showed progressive ossification of the cartilage at the posterior aspect of the body of L5 and at the anterior aspect of that of S1.

In this case, after failure of nonsurgical treatment, surgical treatment was planned. In case of degenerative spondylolisthesis, surgical treatment is generally considered because of segmental instability, although the type of surgery implemented depends on degree of displacement and neurological status. Our observation suggest that timely decompression and stabilization by pedicle screws can relieve the symptoms of patient and help to maintain the quality of life.

References:

1. Sha N, Doita M, Uno K, Yoshiya S, Kurosaka M. Spontaneously stabilized severe spondylolisthesis without operation: long-term follow-up of a preteenage patient. *J Spinal Disord Tech* 2004; 17: 451-455.