

A Case report on Spondylolisthesis associated with Inter Vertebral Disc Prolapse

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ABSTRACT

Spondylolisthesis is the most common type of spinal disease which in advance cases requires surgical intervention. It is also known as 'slipped disc'. It occurs when there is 'slippage' of vertebral body above on the vertebral body below. It causes instability and neural compression due to repetitive micro traumas which leads to absent pars interarticularis due to which an additional stress is applied to the facet joints causing advanced degeneration of the disc space. The associated symptoms are muscle spasms in hamstring, numbness and weakness in the foot, difficulty in standing or walking for longer period and back stiffness. Also L4-L5 spondylolisthesis is associated with caudal segment (L5-S1) degeneration which is mostly seen in elderly patients. Early diagnosis and treatment may benefit the patients' quality of life. The selection of spinal stabilization exercise will be very helpful and safe after the surgery for better recovery in older patients. In this case study, we discussed the case report of patient who has under gone surgical treatment.

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Introduction

Spondylolisthesis is the most common type of spinal disease which in advance cases requires surgical intervention [1]. It is also known as 'slipped disc'. It occurs when there is 'slippage' of vertebral body above on the vertebral body below. It causes instability and neural compression due to repetitive micro traumas which leads to absent pars interarticularis due to which an additional stress is applied to the facet joints causing advanced degeneration of the disc space [2]. The associated symptoms are muscle spasms in hamstring, numbness and weakness in the foot, difficulty in standing or walking for longer period and back stiffness. Also L4-L5 spondylolisthesis is associated with caudal segment (L5-S1) degeneration which is mostly seen in elderly patients [3]. The common risk factors found for destabilization are anteroposterior hypermobility, long disc height and angular hypermobility. Complication rate increases with increase in age, increased intraoperative blood loss and longer operative time [4].

TLIF L4-L5 with Posterior Decompression L5-S1-DePuy

Transforaminal interbody lumbar fusion is a posterior surgical approach for fusion which is used for treatment of degenerative lumbar disease and

stabilization. A midline or bilateral paramedian mini open incision is made allowing a direct access to the disc space for levels L4-L5. For bone graft placement a unilateral laminectomy and inferior facetectomy is done for entering spinal canal. Advantages of TLIF include relatively easier access to the posterior structures and postoperative recovery is faster [5]. A procedure for L5-S1 transdiscal screw fixation done for the treatment of spondylolisthesis in which a screw is channeled from the sacrum through the intervertebral disc towards the vertebral of L5. This method has shown increased biochemical stiffness which translate an increase in rate of fusion and also shows significant functional and radiological improvements for the patients [6].

Case Report

A 52 years old man, presented with lower back pain for 10years and had a complaint of left lower limb radiculopathy and claudication pain 3weeks before admission. No history of trauma, bowel and bladder incontinence. Patient has a past history of tonsillectomy past 10years and had history of hypertension for which he was under the medication tab. Losartan 150mg OD, tab. Rosuvastatin 10mg OD and tab. Indapamide OD (sustained release). Laboratory findings of the patient were normal except

RDW was increased (18%) and microscopic findings of RBC showed erythrocytosis. MRI of lumbar spine showed modic type 2 end plate changes in L4-L5 levels with Schmorl's node at L5 vertebral body and disc dessication changes was seen in L4-L5 and L5-S1 level. In L4-L5 levels, diffuse disc bulge with left posterolateral disc extrusion and inferior migration is seen narrowing both neural foramina along with facet joint hypertrophy impinging on left nerve route in the lateral recess. In L5-S1, diffuse disc bulge and bilateral facet joint hypertrophy is seen narrowing both neural foramina abutting right root in the neural foramen.

Based on above subjective and objective evidences and clinic-radiological examination patient was diagnosed with L4-L5 Spondylolisthesis + IVDP L5-S1. After receiving cardiology and anesthetic fitness patient was taken for surgery and operated. The procedure performed was TLIF L4-L5 + Posterior decompression L5-S1-DEPUY. Injection Cefuroxime 1.5g was given during the procedure. During postoperative period patient was treated with Tab. Paracetamol 650mg TID for 10days, Tab. Pantoprazole 40mg BD before meals for 10days and Tab. Cefuroxime 500mg TID after meals for 5days and was also continued with his antihypertensive drugs. The patient was discharged after two days of surgery and was advised to avoid long journeys for 2-3months and inculcate mild exercises for better recovery.

Discussion

Spondylolisthesis is a spine instability condition in which the vertebra moves more than it should and this condition is mostly seen in elderly patients. It has a prevalence rate of 4-5% in children at 6years of age and the rate increases with age by 6% and is mostly noticed in athletes that is up to 50%. There are various treatment options like NSAIDS, steroid injections, physical therapy, bracing and surgery. Based on the medical condition and age of the patient the treatment plan is decided. This patient was treated surgically. The compression caused to the neural tissue was treated surgically by TLIF L4-L5 + Posterior decompression L5-S1 DEPUY procedure. The reoccurrence of chronic pain was not reported after surgery. The main cornerstone of the treatment was to treat patient's clinical symptoms, broad spectrum antibiotic therapy and reconstructive surgery improved patient's quality of life. The risk can be reduced by maintaining the healthy weight as the

excess weight increases the stress in the lower back. Regular exercises should be done to strengthen the back and abdominal muscle. Non surgical option will not reverse the slippage of vertebral body yet can provide long term relief from pain whereas surgery can restore the spine's strength by relieving the pressure on the nerves and secures the vertebrae.

Conclusion

Spondylolisthesis is not life threatening life but can cause chronic pain and permanent damage if not treated in time. Early diagnosis and treatment may benefit the patients' quality of life. The selection of spinal stabilization exercise will be very helpful and safe after the surgery for better recovery in older patients.

Abbreviations

RDW: Red cell Distribution Width, **RBC:** Red Blood Cell, **TLIF:** Transforaminal Lumbar Interbody Fusion, **IVDP:** Inter Vertebral Disc Prolapse, **BD:** Twice a Day, **TID:** Thrice a Day, **OD:** Once a Day, **NSAID:** Non Steroidal Anti Inflammatory Drug.

References

1. Rezvani M, Sabouri M, Mahmoodkhani M, Mokhtari A, Tehrani DS. A comparative study of L4-L5-S1 and L5-S1 vertebral fusion in high-grade L5-S1 spondylolisthesis. *J Craniovertebr Junction Spine*. 2021 Apr-Jun; 12(2):202-8.
2. Shamrock AG, Donnally III CJ, Varacallo M. Lumbar Spondylolysis And Spondylolisthesis. 2022 Sep 4. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. PMID: 28846329.
3. Choi KC, Shim HK, Kim JS, Lee SH. Does pre-existing L5-S1 degeneration affect outcomes after isolated L4-5 fusion for spondylolisthesis? *J Orthop Surg Res*. 2015 Mar 26;10:39.
4. Devine JG, Schenk-Kisser JM, Skelly AC. Risk factors for degenerative spondylolisthesis: a systematic review. *Evid Based Spine Care J*. 2012 May ;3(2):25-34.
5. Ehsan Saadat. Transforaminal Lumbar Interbody Fusion (TLIF) back surgery. *Spine-health*, Oct 2022.
6. Guigui P, Ferrero E. Surgical treatment of degenerative spondylolisthesis. *Orthop Traumatol Surg Res*. 2017 Feb; 103(1S):S11-S20.