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Selective Decompression and Inter-laminar Dynamic Stabilization for the Treatment of Degenerative Lumbar Stenosis: Clinical Application and ComplicationsY. Hai¹, S. Lu¹, L. Zang¹¹Chaoyang Hospital, Capital Medical University, Orthopedic Surgery, Beijing, China

Background: The decompressive laminectomy with fusion with or without instrumentation was mainstay of surgical management for lumbar stenosis. However, fusion poses various problems especially adjacent segment disease. To overcome shortcomings associated with fusion, concept of dynamic stabilization was introduced and a number of devices have been developed.

Objectives: To evaluate the efficacy of the treatment of degenerative lumbar stenosis utilizing Coflex inter-laminar dynamic stabilization, a retrospective study was conducted and the indication and complications of this technique were discussed.

Methods: In a period of two years which was between September 2007 and August 2009, 78 consecutive patients with degenerative lumbar stenosis were treated with posterior selective decompression and inter-laminar dynamic stabilization utilizing Coflex. There were 31 male and 47 female with an average age of 54.8 years old (38-81). All patients were with radicularpathy or neurological claudication with or without low back pain pre-operatively and were confirmed diagnosis of degenerative lumbar stenosis by imaging study (CT and MRI). VAS and Oswestry score, ROM, complications and patients' satisfaction were evaluated pre and post operatively.

Results: All patients underwent the procedures safely. There were 76 patients with one level Coflex implantation and 2 patients with two levels. The average surgery time was 78 mins (60-110). The average blood loss was 210ml (180-350). There were no major complications (nerve injury, etc.) occurred intra-operatively. The patients were evaluated for follow up of clinical and radiographic outcome at 1, 3, 6, 12 and 24 months post-operatively. All patients were followed up for at least 24 months. The average VAS score and Oswestry Disability Index were improved 90.1% and 87.4 %. The disc space height and ROM of the index level was well maintained. The complications were occurred in 11 patients (12.8%). The device related complications (7.8%) included two cases of fractures of spinous process, three cases of migration of the implant and one case of instability of index segment. No revision procedure was performed due to mild symptom with those six patients. Other complications included one dural tear, one delayed discitis, one delayed deep infection and two superficial infections. Two patients underwent revision surgery for the infection and discitis. At the latest follow up, 88% of patients were satisfied with their results.

Conclusion: Satisfactory clinical and radiographic outcome could be achieved in patients with degenerative lumbar stenosis treated by decompression and Coflex implantation. To avoid complications, attentions must be paid of careful selection of the patient, implantation of the device at proper size, and adequate decompression. From our experience, inter-laminar dynamic stabilization with Coflex is an effective therapy for the treatment of single or double levels degenerative lumbar stenosis.