Abstract: 100

Single Level of Degenerative Lumbar Spine Stenosis: Comparison of Fusion and Inter-spinous Dynamic Stabilization

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Objectives: To evaluate the short term clinical outcome of single level degenerative lumbar stenosis treated with inter-spinous dynamic fixation or pedicle fixation and fusion, a prospective, non-randomized comparative study was conducted.

Methods: From August, 2007 to July, 2008, 66 patients with single level of degenerative lumbar stenosis were surgically treated in our hospital. The patients were divided into two groups according to the surgical procedure which was posterior inter-spinous dynamic stabilization utilizing Coflex(PDS) or pedicle fixation and interbody fusion(PFF). Selection of procedure was decided preoperatively after discussion with patients regarding the advantages and disadvantages of procedures and was decided by patients. There were 27 cases in PDS group. There were 12 male and 15 female with an average age of 57.1 years. Selective posterior decompression and inter-spinous stabilization was performed for this group of patients. The level of surgery was 1 in L23, 2 in L34 and 24 in L45. In PFF group, there were 39 cases and among them there were 14 male and 25 female with an average age of 58.3 years. Selective posterior decompression and pedicle fixation and interbody fusion with cage was performed for this group of patients. The surgery level was 2 in L23, 4 in L34, 16 in L45 and 17 in L5S1. The age, procedure time, intra-operative blood loss, hospital stay, complication as well as VAS score, Oswestry Disability Index, distance of walking and patient’s satisfaction were compared between two groups.

Results: There was no difference between two groups regarding the age of the patients. The average surgery time for PDS group and PFF group was 103 min and 168 min and there was significant difference between two groups. The average intra-operative blood loss was 178 ml for PDS group and 334 ml for PFF group and there was significant difference between two groups. The average hospital stay for PDS group and PFF group was 8.6 days and 13.1 days and again there was significant difference between two groups. For complications, the rate was 7.4% and 10.2 with significant difference between two groups. All patients were asked to have follow up evaluation at 1,3,6,12 months postoperatively utilizing standardized form and AP and lateral radiography. All patients had at least 12 months follow up and was 18.3(12-24) months and 18.1(12-24) months for PDS and PFF group. The VAS score and ODI index was no significant differences between two groups. The patient’s satisfaction rate was 91.4% and 91.1% for PDS and PFF groups and no significant differences was found between two groups.

Conclusion: Satisfactory clinical outcome could be achieved in patients with single level of degenerative lumbar stenosis treated by posterior fixation and fusion as well as inter-spinous dynamic stabilization. PDS has the advantages of less surgery time, less blood loss and short hospital stay with few complications, and the motion in the operated segment was preserved by PDS.