

Therapeutic feasibility of full endoscopic decompression in one- to three-level lumbar canal stenosis via a single skin port using a new system, Percutaneous stenoscopic lumbar decompression (PSLD).

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Introduction

Patients suffering from symptomatic lumbar stenosis has relied on several ways, medication, pain management or open surgery depending on its severity. Percutaneous stenoscopic lumbar decompression (PSLD) is a new technique for the decompression of the spinal canal, lateral recess, and foramen via a translaminar, unilateral approach. The Stenoscopy, optimized endoscopic system for lumbar stenosis is fitted surgeon to perform laminectomy, flavectomy, foraminotomy, discectomy and is designed to offer easy handling the unilateral approach, bilateral decompression with 8.4mm outer diameter, 5.7mm working channel, and 12degree field of view.

Methods

The study was conducted from April 2016 to January 2017. We reviewed 450 patients(483level, 1level 408, 2level 33, 3level 9cases), treated surgically with PSLD after epidural anesthesia including 254 males and 196 females. Radiological change between pre and postoperatively were assessed using magnetic resonance imaging to compare pre and postoperative change of canal volume in decompressed segment. Clinical outcomes(250patients, male;118, female;132) were assessed using Visual Analogue Scale score and Oswestry Disability Index, operation time, duration of hospital stay.

Results

Postoperative MRI shows less soft tissue damage compared to a conventional open decompression in all cases, and a significant increase of canal volume(mean 53.7%) by removal of pathologic thick ligamentum flavum with minimum bone work. The mean improvements of pain score and functional improvement were 4.0 and 40%. Mean operating time was 52 minutes for bilateral decompression of 1level and mean hospital stay was 1.2 days.

Conclusions

Decompression of spinal canal with PSLD shows significant increase the canal volume in decompressed segment. The local anesthesia, less damage of normal anatomical structures, short hospitalization are the main advantages of this new method. PSLD could be a feasible replacement for open decompressive surgery in symptomatic lumbar stenosis.

Learning Objectives

to solve the problem of lumbar stenosis by decompression with endoscopic surgery.

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