Background: Lumbar spinal stenosis with caudicatio becomes more and more a problem in our aging society. Meanwhile a lot of these older patient had been left without optimal treatment caused by comorbidity and refusal of open surgeries, the field of minimal invasive procedures opens a new window to improve their situations. The use of the effects of ligamentoplasty by slight distraction sometimes combined with endoscopic decompression fills the gap between a failed conservative treatment and the more aggressive laminectomy or fusion. The used and presented interspineous implant Superion allows a less destructive placement by interspineous ligament splitting and midline insertion.

Purpose: There will be presented the preliminary effectiveness and safety of a novel interspineous implant for patients with moderate lumbar spinal stenosis referring to the current studies. The different options of surgery, stand alone, combination with posterolateral or midline endoscopic decompression will be discussed.

Methods: There will be a consideration on our retrospective experience with interspinous implants. The patients now were treated with a novel interspineous implant, which is a minimally invasive spinal device that limits back extension at the symptomatic level.

For the study there was a prospective evaluation of 121 patients treated at the Emma Klinik (Seligenstadt, Germany) in the years 2008/2009. The follow up points were at 1, 3, 6, and 12 months. The outcome measurement was done by ODI, VAS, health related quality of life with Physical Component Summary (PCS) and Mental Component Summary (MCS) scores from the SF-36. Adverse events have been collected.

Results: Interspineous implants improve the situation of patients with lumbar stenosis and radicular pain as well as claudication significantly. Additional minimal invasive procedures can assist this without severe approach damage.

In the study back function improved as more than 30% from pretreatment in 76% for axial pain and 86% for extremity pain. The statistical analysis of the other scores demonstrated a comparable improvement. Four (3.3%) explants were performed, although 3 were not related to the device. Eight procedure related adverse events, observed in 6 patients, included superficial seroma, minor wound pain and infection.

Discussion: The minimally invasive implant with an expandable interspineous device is an effective and safe treatment option for patients with moderate LSS who are unresponsive to conservative care. The addition of additional minimal invasive procedures can give an assistance for improvement.