WORLD SPINE 11

Unilateral Biportal Endoscopic Decompression for Lumbar Spinal Stenosis

Clinical outcomes in 860 patients
Retrospective cohort, 2020–2025 · 15-month follow-up

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Retrospective data analysis with ChatGPT

Study design

Retrospective analysis of a clinical database

Dataset

The complete de-identified database was uploaded to ChatGPT

Statistical analysis

Complete statistical analysis based on the primary study data

Verification of results

The investigators verified all statistical calculations and results

Eligibility criteria for degenerative lumbar spinal stenosis

Inclusion criteria

Degenerative lumbar spinal stenosis due to ligamentum flavum and facet joint hypertrophy

Exclusion: deformity

Degenerative scoliosis or spondylolisthesis

Exclusion: primary pathology

Isolated foraminal stenosis or disc herniation as the primary pathology

Exclusion: instability

Segmental instability on flexion–extension radiographs

860 patients: mean age 67 years

Cohort characteristics

Patients underwent BESS decompression in 2020–2025. Mean clinical follow-up was 15 months.

860

patients

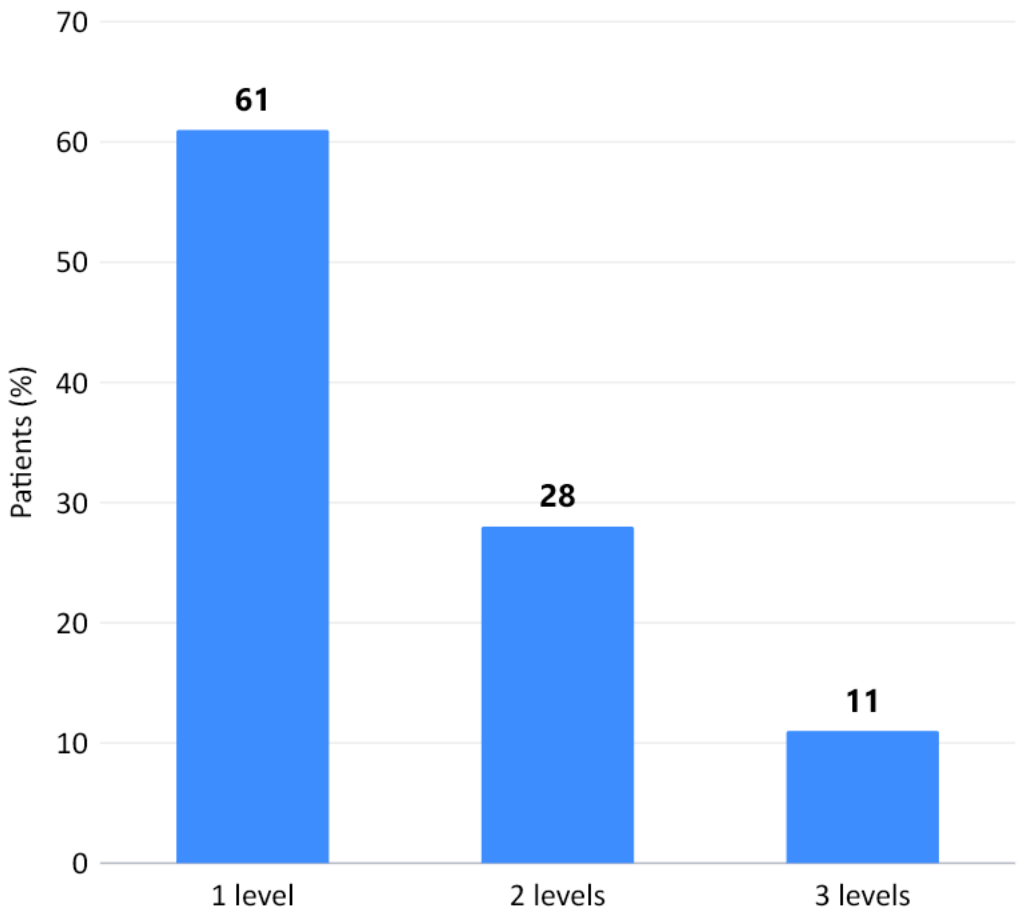
67

mean age, years

57–89

age range, years

Most decompressions involved a single level



Extent of surgery

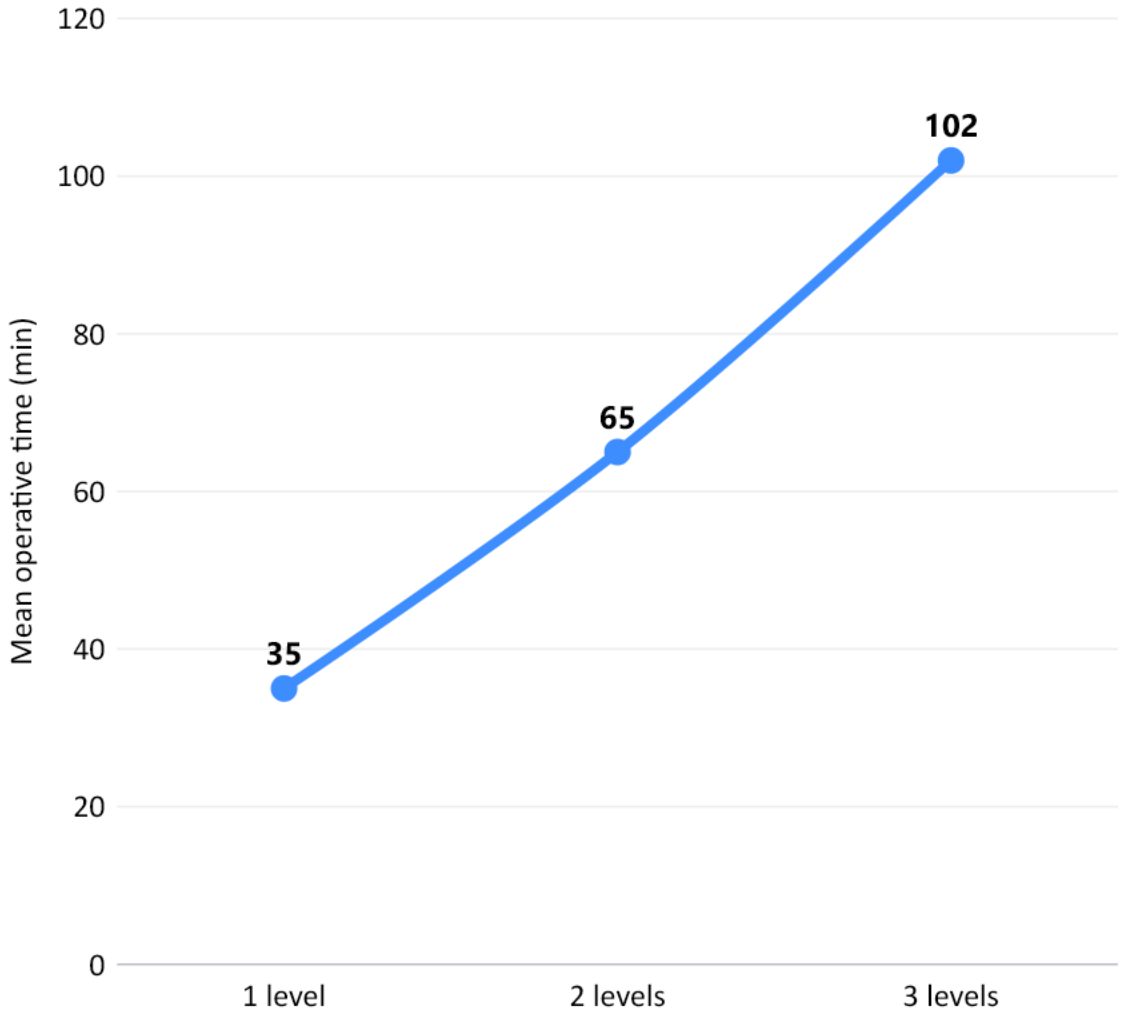
Single-level procedures predominated. Multilevel decompressions accounted for 39%.

61% one level

28% two levels

11% three levels

Operative time increased with the number of decompressed levels



Mean operative time
35 → 65 → 102 min

35

minutes · 1 level

102

minutes · 3 levels

Reduced pain and disability, improved walking

Clinical outcomes at follow-up

All reported clinical measures improved at a mean follow-up of 15 months.

Outcome	Before surgery	Follow-up	Absolute change	Relative change
Leg pain VAS	7.5	**1.8**	−5.7	**76% reduction**
Back pain VAS	6.2	**2.1**	−4.1	**66% reduction**
Oswestry Disability Index (ODI)	68%	**16%**	−52 points	**76% reduction**
Walking distance	180 m	**>1000 m**	>+820 m	**>5.5-fold**

Mobilization within 2–3 hours

Surgery

BESS

Endoscopic decompression

2–3 hours

Mobilization

Early ambulation

1 day

Discharge

Mean hospital stay

Revisions were rare, but neurological risk remained

Safety profile

Most complications were managed without reoperation. No infections were observed.

Complication / outcome	Management or course	Number	Rate
Dural tear	Conservative management	27	3.1%
Transient dysesthesia	Resolved within 2–4 weeks	14	1.6%
Epidural hematoma	Detected on imaging, no revision	58	6.7%
Motor deficit	3: partial recovery, 4: no recovery	7	0.8%
Infection	None observed	0	0%
Revision surgery	Required in 2 patients	2	0.2%

Motor deficits: frequency and clinical consequences

Neurological outcomes

Postoperative motor deficits occurred in 7 patients: 3 had partial recovery and 4 had no recovery by final follow-up.

7

cases of motor deficit

3

partial recovery

4

no recovery

Clinical improvement and neurological risk

Interpretation

In this large cohort, BESS provided substantial symptom relief, functional improvement and early mobilization. Mean hospital stay was 1 day.

The retrospective design and lack of a comparison group limit causal conclusions.

What the study showed

Leg pain VAS: 7.5 → 1.8

ODI: 68% → 16%

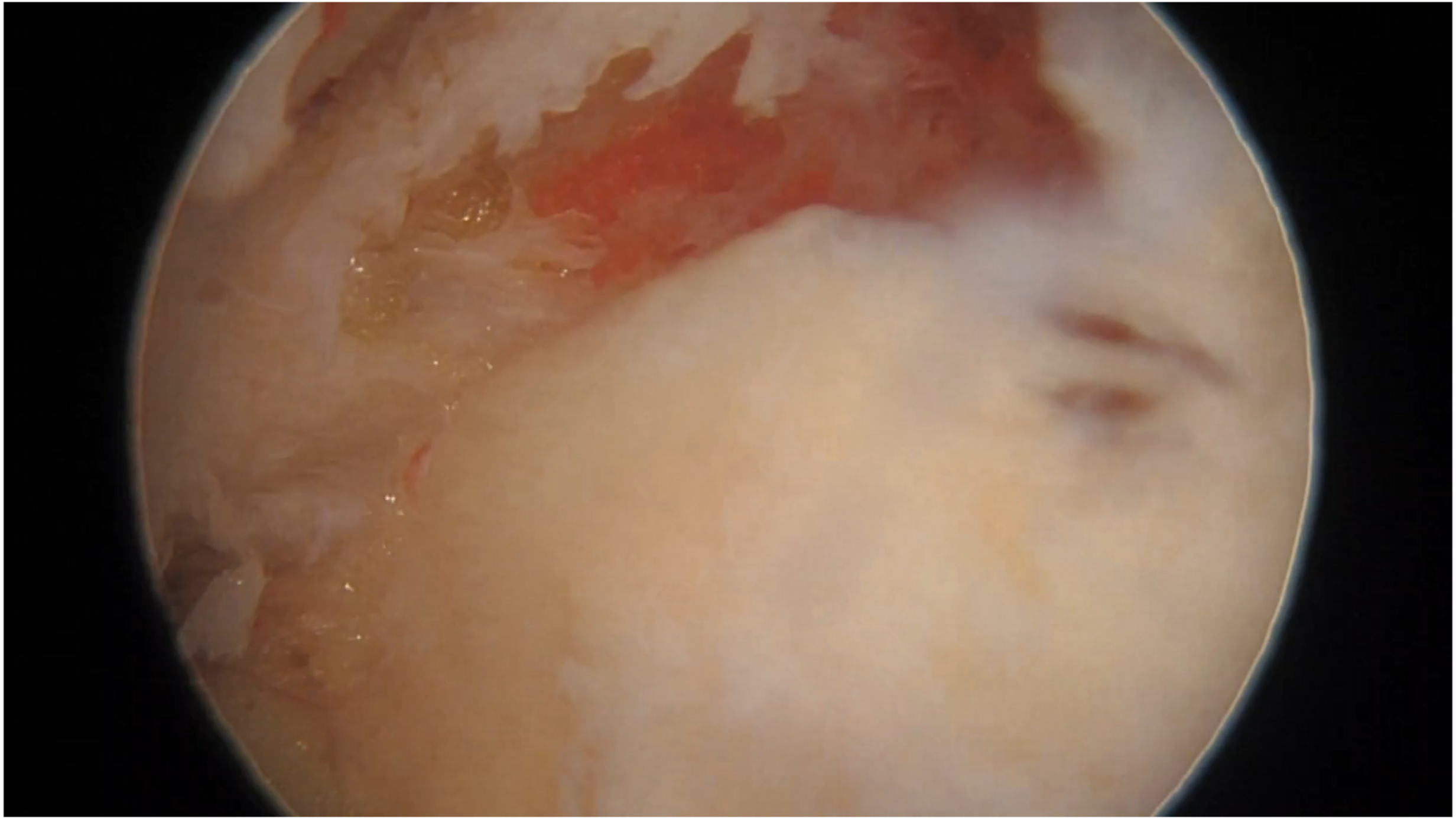
Revision: 2 of 860 patients

What requires further study

Long-term durability of outcomes

Predictors of motor deficits

Comparative effectiveness of techniques



CONCLUSIONS

Substantial clinical improvement.
Mobilization within hours.
Early hospital discharge.
Low revision rate.

860 selected patients

Leg pain VAS: 7.5 → 1.8 · ODI: 68% → 16%

Neurological risk requires vigilance