

Stenose der Wirbelsäule – Laminotomie

Claudius Thomé

MEDIZINISCHE UNIVERSITÄT INNSBRUCK

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SPONDYLOLISTHESE?

NEUROLOGY 2013; 122: 1000-1008

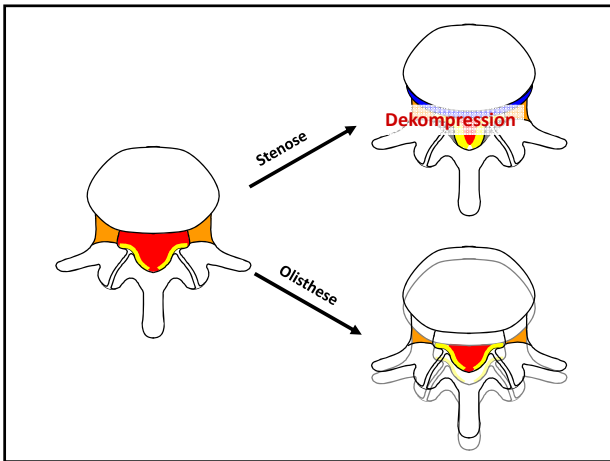
Degenerative Spondylolisthesis Versus Spinal Stenosis: Does a Slip Matter? Comparison of Baseline Characteristics and Outcomes (SPORT)

Adam Pevzner, MD, MSc, Emily Flood, MS, Jon Lurie, MD, MSc, Tor Tominson, MD, William A. Abdu, MD, Alan Haidich, MD, Keith Bridwell, MD, and James Weinstein, DO, MD

Key Points

- Degenerative spondylolisthesis (DS) and spinal stenosis (SPS) patients had similar baseline characteristics.
- DS patients improved significantly more with surgery than did SPS patients, while nonoperative outcomes were similar for the 2 groups.
- Given these differences in outcomes, DS and SPS patients should probably not be combined in future studies.

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THE NEW ENGLAND JOURNAL OF MEDICINE

ORIGINAL ARTICLE

Surgical versus Nonsurgical Therapy for Lumbar Spinal Stenosis

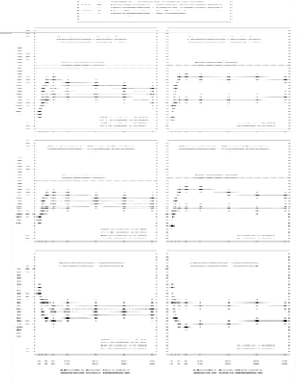
James W. Weinstein, M.D., M.Sc., Tor D. Tominson, M.D., Jon D. Lurie, M.D., M.Sc., Adam P. Pevzner, M.D., Emily Flood, M.Sc., Brett Harrison, M.D., Philip Hershman, M.D., Frank Carrasco, M.D., Todd Albert, M.D., Stuart B. Stulen, M.D., Alan Haidich, M.D., Shirley Goldberg, D.D., Sigurd Berven, M.D., and Howard An, M.D., for the SPORT Investigators*

Evidenzklasse: I

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DURABILITÄT

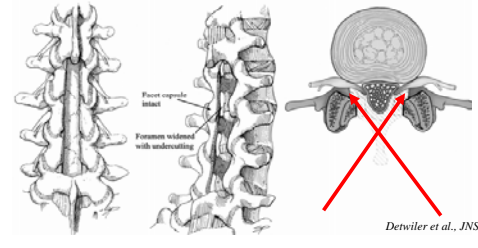
Surgical versus Nonoperative Treatment for Lumbar Spinal Stenosis: Functional Results of the Spine Patient Outcomes Research Trial (SPORT)



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DEKOMPRESSIONSTECHNIKEN

➤ „facet-sparing“ Laminektomie





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DEKOMPRESSIONSTECHNIKEN

➤ **Laminektomie:**

- Erfolgsquote: **64%** (Turner 91), **57%** (Katz 91)
- Invasivität: Resektionsausmass, Gewebetrauma, etc.
- Instabilität → hohe (post-operative) Fusionsraten

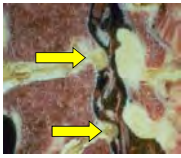
Deyo et al., NEJM 2004

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PATHOANATOMIE

➤ **Lokalisation der Wurzelkompression**

- verdickte Ligg. flava
- Facettenhypertrophie
- Bandscheibenprotrusion
- ➔ **auf Bandscheibenniveau**



➤ **Hochqualifizierte Bildgebung (MRT)**


- exakte Lokalisationsdiagnostik
- ➔ *tailored approach*

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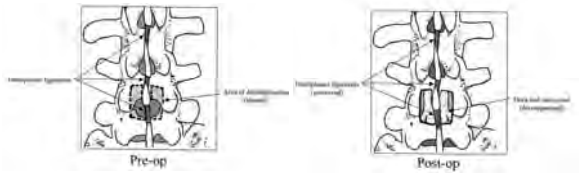
„target area“

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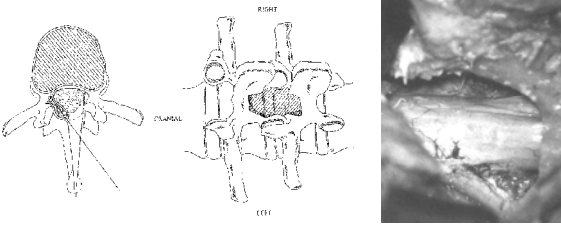
LAMINOTOMIE – bilateral



Kleeman et al., Spine 2000

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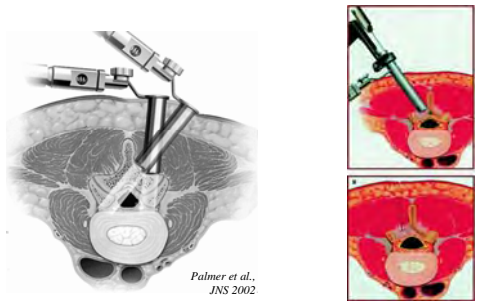
LAMINOTOMIE – unilateral



Spetzger et al., Acta Neurochir 1997

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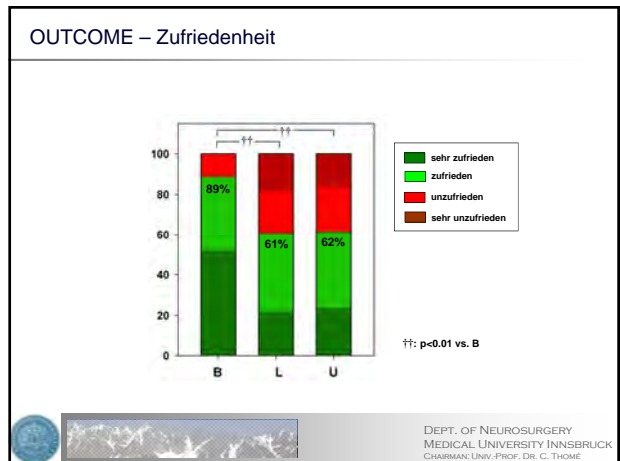
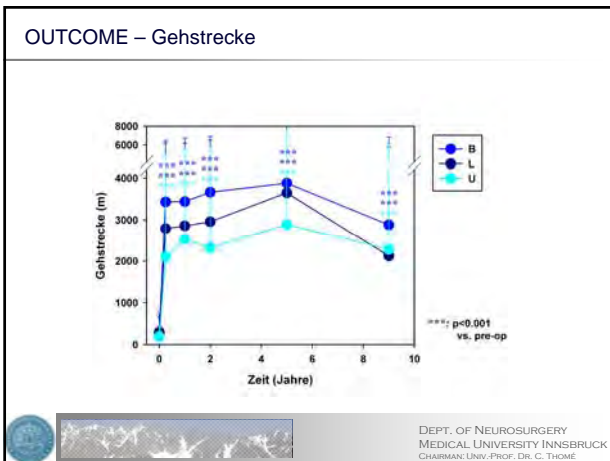
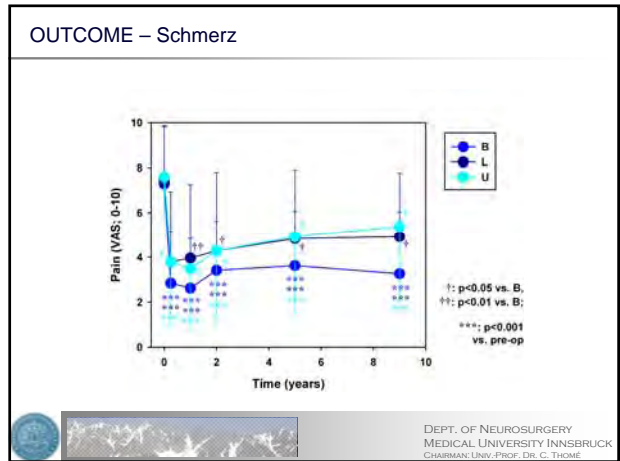
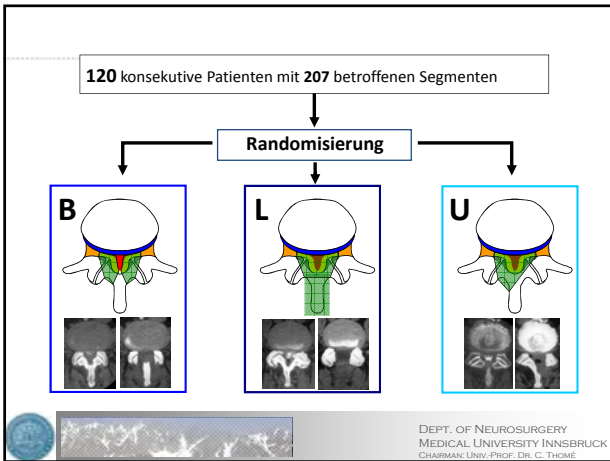
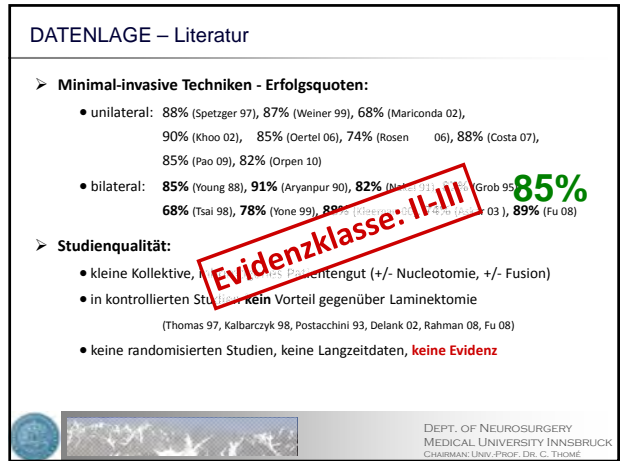
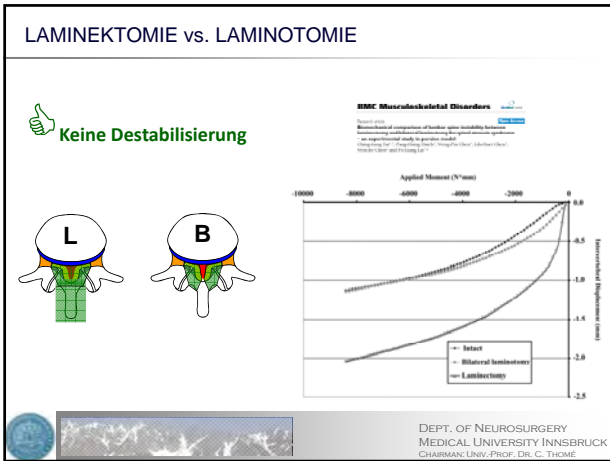
LAMINOTOMIE – endoskopisch



Palmer et al., JNS 2002

Khoo et al., JNS 2002

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ORIGINAL ARTICLE

Spinal canal morphology and clinical outcomes of microsurgical bilateral decompression via a unilateral approach for lumbar spinal canal stenosis

Wan-Hook Choi · Chang-Hwan Oh ·
 Gyeon-Tae Park · Sang-Chul Shin · Jong-Ho Lee ·
 Dong-Hyuk Park · Tai-Hwan Cho

Satisfaction rate (%)

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CLINICAL CASE SERIES

A Comparison of Unilateral and Bilateral Laminotomies for Decompression of L4-L5 Spinal Stenosis

Sun-Heon Hong, MD, PhD¹, Seung-Hyeon Lee, MD, PhD¹, Young-Ho Lee, MD, PhD¹, Chul-Ki Park, MD, PhD¹,
 Jeffrey C. Wang, MD², Sang-Ho Lee, MD, PhD¹, and Ho-Yeon Lee, MD, PhD¹

	Unilateral Laminotomy	Bilateral Laminotomy	P
Preoperative VAS back	5.9 ± 3.3	7.0 ± 3.3	0.041
Postoperative VAS back	3.6 ± 2.9*	3.3 ± 2.5*	1.0
Preoperative VAS leg	6.4 ± 2.2	6.0 ± 3.1	0.93
Postoperative VAS leg	3.7 ± 3.8*	3.9 ± 2.6*	0.68
Preoperative ODI	23.2 ± 9.7	24.8 ± 9.8	0.47
Postoperative ODI	31 ± 10.3*	30.8 ± 6.6*	0.97
Mean improvement			
VAS Back	2.3 ± 3.3	4.1 ± 3.4	0.067
VAS leg	4.7 ± 4.3	3.1 ± 4.2	0.73
ODI	17.2 ± 13.9	19 ± 11.3	0.53

Key Points

- Clinical outcomes evaluated with VAS and ODI were not different between unilateral and bilateral laminotomies.
- Unilateral laminotomy can be done with less bleeding and short operation time.
- Less translational motion change occurs in the unilateral laminotomy, thus, unilateral laminotomy is in favor of radiologic stability.

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CHIRURGISCHE TECHNIK

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CHIRURGISCHE TECHNIK

Arai et al., Spine 2014

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Laminotomie - endoskopisch

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TECHNIK

Unilaterale Laminotomie mit Undercutting

Ikuta et al., JNS 2005

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TECHNIK

Minamide et al., JNS 2013

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Short-term results of microendoscopic posterior decompression for lumbar spinal stenosis

Technical note

Kim Seock, M.D., Joseph Antoni, M.D., Alexander Tschopp, M.D., Marc-Olivier Frey, M.D., Benjamin Nussli, M.D., Konrad Bostli, M.D., Armin Gasser, M.D., Martin Yu, M.D., and Thomas Probst, M.D.

Department of Orthopedic Surgery, University of Basel and University Hospital, University of Basel, Basel, Switzerland

Summary of the differences between the MEPD group and the control group*

Clinical Results	MEPD	Control	p Value
improvement in JOA score (%)	72 ± 20	70 ± 16	NS
good & excellent results†	38 (81%) / 47	23 (79%) / 29	NS
complication rate (%)	25	14	<0.05
dural tear‡	7	1	
IAD fracture‡	0	1	
neurological deficit (transient)‡	0	1	
wound infection‡	0	0	
time (min)	124 ± 29	101 ± 29	NS
EBL (ml)	68 ± 64	110 ± 79	<0.05
days of fever	1.2 ± 1.5	3.5 ± 1.5	<0.05
use of analgesics§	0.5 ± 1.0	3.4 ± 2.5	<0.05
LOS (days)	18 ± 7.1	24 ± 3.0	<0.05

→ weniger invasiv
→ mehr Komplikationen

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Bilateral Operation of Lumbar Degenerative Central Spinal Stenosis in Full-endoscopic Interlaminar Technique With Unilateral Approach

Prospective 2-year Results of 74 Patients

Martin Komp, MD* Patrick Hahn, MD* Harry Merk, MD† Georgios Godolias, MD‡ and Sebastian Ruetten, MD*

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LAMINOTOMIE – endoskopisch

POTENTIAL:

- Endoskopische Dekompression (transforamina/interlaminar) möglich
- Kurzzeitige Vorteile (Hautschnitt, Lokalanästhesie, etc.)
- Fragliches Outcome!

LIMITATIONEN:

- Komplikationsraten!
- Nicht geeignet für breite Anwendung

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FAZIT

- Die operative Therapie ist der konservativen Therapie überlegen!
- Laminotomietechniken zeigen Vorteile gegenüber der Laminektomie!
- Endoskopische Dekompressionen tragen ein höheres Risiko!

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Vielen Dank für Ihre Aufmerksamkeit!

Medizinische Universität Innsbruck

Sektion DGNC Wirbelsäule
Deutsche Gesellschaft für Neurochirurgie

Sektionstagung der DGNC
19./20. September 2014
Innsbruck

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