

# 요추 협착증에서 미세수술적 감압술과 기구고정술을 병행한 요추간 골유합술과의 임상적 비교

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## Clinical Comparison between Microsurgical Decompression and Lumbar Interbody Fusion with Instrumentation for Lumbar Stenosis

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**Objective :** We report clinical results of the patients who received microsurgical decompression procedure (bilateral partial laminectomy and medial facetectomy : Group A) compared with lumbar interbody fusion with instrumentation (total laminectomy, interbody fusion and pedicle screw fixation : Group B).

**Methods :** From March 1996 to December 2000, twenty patients with symptomatic lumbar stenosis underwent microsurgical decompression and twenty-five patients underwent lumbar interbody fusion by two operators. Two groups of patients were compared retrospectively in respect to the mechanical back pain, leg pain, motor weakness, sensory hypesthesia (numbness) and clinical outcomes. The mean follow-up period was 30 months.

**Results :** In Group A, mechanical back pain, leg pain, motor weakness, and sensory hypesthesia were improved in 72.2%, 69%, 80%, 44.4% and 70%, 71%, 83.3%, 50% respectively in Group B. Clinical outcomes was excellent or good in 80% in Group A and 84% in Group B and no differences in clinical parameters between Groups were demonstrated

**Conclusion :** We recommend microsurgical decompression for the patients suffering from symptomatic lumbar stenosis with stable spine because microsurgical decompression provided a satisfactory clinical results equivalent to lumbar interbody fusion with instrumentation.

**KEY WORDS :** Lumbar stenosis · Microsurgical decompression · Lumbar interbody fusion.

### 서 론

요추 협착증 (lumbar spinal stenosis)은 노인성 퇴행성 질환으로, 주로 50세 이상의 환자에게 발생하며, 만성적인 허리 통증, 다리 통증, 하지 무력증, 감각 이상 등을 유발한다. 치료 방법으로는 전신 마취 하에 시행하는 개방 수술 (open surgery)과, 비교적 작은 절개를 통해 시행하는 최소 침습 수술 (minimal invasive operation)이 있다. 최소 침습 수술 중에는 한쪽 면의 뼈를 절제하여 공간을 넓히는 한쪽 면 절제술 (limited laminectomy)과, 양쪽 면의 뼈를 절제하여 공간을 넓히는 양쪽 면 절제술 (bilateral laminectomy)이 있다. 양쪽 면 절제술은 수술 시간이 길고, 근육 손상, 골절 위험 등이 높으며, 최근에는 양쪽 면 절제술을 대체할 수 있는 미세수술적 감압술 (microsurgical decompression)이 개발되어 사용되고 있다. 미세수술적 감압술은 양쪽 면 절제술에 비해 수술 시간이 짧고, 근육 손상, 골절 위험 등이 낮으며, 최근에는 양쪽 면 절제술을 대체할 수 있는 미세수술적 감압술이 개발되어 사용되고 있다. 미세수술적 감압술은 양쪽 면 절제술에 비해 수술 시간이 짧고, 근육 손상, 골절 위험 등이 낮으며, 최근에는 양쪽 면 절제술을 대체할 수 있는 미세수술적 감압술이 개발되어 사용되고 있다.

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대상 및 방법

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가 가 45  
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A

B

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(A )

Kerrison punch

가

(Fig. 1).

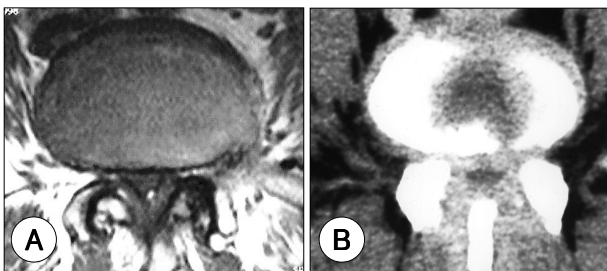


Fig. 1. A : Preoperative transaxial L4-5 magnetic resonance T1WI shows hypertrophied ligamentum flavum and facet joints. B : Postoperative transaxial L4-5 computed tomography scan shows bilateral partial hemilaminectomy and medial facetectomy.

(B )

(medial facetectomy),  
transpedicular screw  
(Fig. 2).

(foraminotomy)  
carbon cage

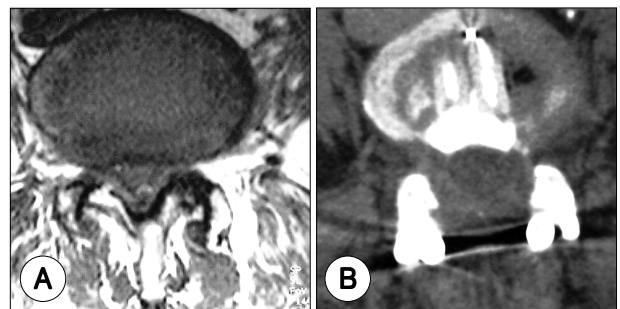


Fig. 2. A : preoperative transaxial L4-5 magnetic resonance T1WI shows hypertrophied ligamentum flavum and facet joints. B : Postoperative transaxial L4-5 computed tomography scan shows total laminectomy, medial facetectomy and pedicle screw.

(numbness)

Table 2

6  
excellent(11~12 ), good(8~10 ), fair  
(6~7 ) poor(0~5 ) 4

SAS

chi - square test

Table 1. Profile of patients(N=45)

	Group A(n=20)	Group B(n=25)
Sex		
Men(n=16)	7	9
Women(n=29)	13	16
Age		
Mean(range)	60.9(40 - 71)	53(36 - 66)
Followup(months)		
Mean(range)	32(14 - 43)	28(13 - 46)
Site		
L4-5	17	23
L5S1	3	2

Group A : microsurgical decompression, Group B : lumbar interbody fusion with instrumentation after decompression

**Table 2.** Criteria for estimation of clinical results

Point	NIC	Back pain	Leg pain	Walking ability	Restrict of ADL	Use of analgesics
2	>500m	Mild or none	Mild or none	Complete	None	None
1	100 - 500m	Tolerable	Tolerable	Intolerable	Mild	Frequent
0	<100m	Intolerable	Intolerable	Disable	Severe	Regular

NIC : Neurogenic intermittent claudication, ADL : Average daily life

**Table 3.** Comparison of clinical and neurological symptoms

Group	Back pain		Leg pain		Motor weakness		Hypesthesia	
	A	B	A	B	A	B	A	B
Improved	13(72.2%)	14(70%)	9(69%)	15(71%)	8(80%)	10(83.3%)	4(44.4%)	6(50%)
Not-improved	5	6	4	6	2	2	5	6
Total	18	20	13	21	10	12	9	12

Group A : microsurgical decompression, Group B : lumbar interbody fusion with instrumentation after decompression

**결 과**

대상 (p=0.631)(Table 3).  
 Table 1 (numbness) A 20 20  
 32 , 가 13 7 가 . 9 (44.4%), B 25 12  
 4-5 17 5 - 1 , 6 (55%). 44.4% 50%  
 3 . (p=0.575)(Table 3).  
 B 25 53 ,  
 28 , 가 16 9 불안정성(Instability)  
 가 . 4-5 23 5 - 1  
 2 .

**임상증상 및 신경학적 증상**

A 72.2% , B  
 70% (p=0.880)(Table 3).  
 A 20  
 13 9 , B 25  
 21 15  
 69% 71% (p=0.59)(Table 3).  
 , A 20  
 10 (80%), B 25  
 12  
 10 (83.3%)

**치료 결과(Clinical results)**

6  
 , A excellent group good  
 group 35% 45% , B excellent  
 group good group 48% 36% . excellent  
 group good group A 80%, B  
 84% (p=0.513)(Table 4).

**Table 4.** Comparison of clinical results

Group	A(%)	B(%)
Excellent	7(35)	12(48)
Good	9(45)	9(36)
Fair	4(20)	4(16)
Poor	0	0

Group A : microsurgical decompression, Group B : lumbar interbody fusion with instrumentation after decompression

고찰

1970 Caspar<sup>2)</sup> 11), Yasargil<sup>27)</sup>, Nystrom<sup>17)</sup>, Watanabe<sup>23)</sup> 가 Spetzger<sup>21,22)</sup> 1999 Weiner<sup>24)</sup> 87% (fenestration), (laminoplasty) 1997 12) 88% 80% , 2000 20) 86% Kalbarczyk<sup>10)</sup> 91% , Dipierro<sup>3)</sup> 69% , Mackay<sup>13)</sup> 60% 가 19) 가 Mackay<sup>13)</sup> 20%, Dipierro<sup>3)</sup> 48%, Spetzger<sup>21,22)</sup> 80% 72.2% , Dipierro<sup>3)</sup> 69%, Mackay<sup>13)</sup> 90%, Young<sup>28)</sup> 91% 87.5% 1,7,8,14 - 16,25) 80% excellent good



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