

## 노령인구의 요추질환에 대한 수술적 치료결과의 분석

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= Abstract =

### The Analysis of Surgical Results to the Lumbar Spinal Disorders of Aged Persons

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**Objective :** To retrospectively analyse the surgical outcome and efficacy of the lumbar spinal surgery in sixty to older patients who failed to conservative treatments.

**Methods :** Between July 1990 and November 1996, the authors retrospectively investigated the medical records of 46 patients who over 60 years of age at the time of surgery. The clinical severity was assessed with Prolo's grade (economic and functional). Questionnaire was sent to each patient regarding long-term effect, satisfaction, and side effects.

**Results :** In 46 patients, 2 patients (1 case died of lung cancer, 1 case lost in follow-up) were lost. Among 44 patients (28 men, 16 women; mean age 64 years), 22 patients underwent partial or total laminectomy, 17 spinal fusion with instruments, 2 chemonucleolysis, 2 adhesiolysis for failed back surgery syndrome, and 1 automated percutaneous lumbar discectomy. Although postoperative complications were observed in 5 patients, they were successfully managed. No deaths were documented in the perioperative periods. The average Prolo's economic and functional grade improved from 2.98 to 3.48 and 2.81 to 3.75, respectively.

**Conclusion :** In overall, the favorable surgical outcome was obtained. This results indicated that with appropriate preoperative selections and indications, careful intraoperative monitoring, and attentive postoperative care, the surgical treatment of elderly patients for the lumbar spinal disorders, significant improvement with acceptable levels of morbidity and mortality can be achieved.

**KEY WORDS :** Lumbar spinal surgery · Elderly patients · Surgical outcome.

서 론

15)

가 75

가

가

19)

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가

가

가 (minimally discectomized percutaneous lumbar discectomy)

60 50% 30°

**대상 및 방법**

1. 대상  
1990 7 1996 11  
60 46  
46 2 (1 : , 1 :  
) 44 (ann-  
ulus fibrosus)

2. 치료법  
4~6  
가  
(foot drop)

3. 관찰방법  
28.2  
14.1 49.3  
Prolo <sup>16)</sup>(Table 1) 가  
(economic) (functional)  
6 Prolo

4. 통계방법  
Pearson Chi -  
Square test Student T - test

27 (61.4%) 17 (38.6%)  
(discography)

3  
(chemonucleolysis) (au -

**Table 2. Age and sex distributions**

Age / Sex	60 - 69(%)	70 - 79(%)	Total No. † (%)
Male	22(50.0)	6(13.6)	28( 63.6)
Female	16(36.4)	0( 0.0)	16( 36.4)
Total	38(86.4)	6(13.6)	44(100.0)

†No. : Number

**Table 1. Prolo economic and functional rating scale**

Economic (activity) status		Functional (pain) status	
Grade	Description	Grade	Description
E1	Complete invalid(worse)	F1	Total incapacity(worse)
E2	No gainful occupation(including housework or retirement activities)	F2	Moderate-to-severe daily pain(no change)
E3	Working/active but not at premorbid level	F3	Low level of daily pain(improved)
E4	Working/active at previous level with limitation	F4	Occasional or episodic pain
E5	Working/active at previous level without limitation	F5	No pain

**Table 3.** Summary of cases

Case	Sex/Age	Sx.*	Sx. duration	Vector	Diagnosis	Operation
1	M/68	LBP**, sciatica	2 months	Heavy work	FBSS <sup>†</sup>	Adhesiolysis
2	M/74	NIC***, LBP	5 years	S****	Spinal stenosis	F <sup>†††</sup>
3	M/60	LBP, sciatica	20 years	S	HNP <sup>††</sup>	L
4	M/65	LBP, paraparesis	1 day	Fall down	Bursting fracture	F
5	F/62	LBP, sciatica	10 years	S	Spondylolithesis	F
6	F/62	LBP, sciatica	2 months	S	HNP	L <sup>††††</sup>
7	F/62	LBP, sciatica	2 months	Fall down	HNP	L
8	M/61	NIC, LBP	1 year	S	Spinal stenosis	F
9	F/60	NIC, LBP	1 year	S	Spinal stenosis	F
10	F/61	NIC, LBP	10 years	S	Spinal stenosis	F
11	M/75	NIC, LBP	1 year	S	Spinal stenosis	F
12	F/64	NIC, LBP	8 months	S	Spinal stenosis	F
13	F/67	LBP	2 days	Fall down	Compression fracture	F
14	M/60	NIC, sciatica	4 months	S	Spinal stenosis	L
15	M/74	Rt.foot drop	15 days	S	HNP	L
16	F/62	LBP, sciatica	1 year	S	HNP	L
17	M/60	LBP, sciatica	5 days	S	HNP	L
18	F/62	LBP, sciatica	1 month	S	HNP	L
19	M/61	LBP, sciatica	2 months	Slip down	HNP	L
20	M/64	Sciatica	6 months	S	HNP	L
21	M/68	NIC	2 months	Heavy work	Spinal stenosis	L
22	F/63	LBP, sciatica	3 years	S	Spondylolithesis	F
23	M/68	LBP, sciatica	10 years	S	HNP	L
24	M/62	Sciatica	2 years	Heavy work	HNP	Chemoneucleolysis
25	M/66	LBP, sciatica	5 days	S	HNP	L
26	M/62	LBP, sciatica	2 years	S	HNP	APLD <sup>†††††</sup>
27	F/66	LBP, sciatica	1 year	Heavy work	HNP	L
28	M/61	LBP, sciatica	20 years	S	Spondylolithesis	F
29	F/61	LBP, sciatica	10 years	S	HNP	L
30	M/70	LBP, sciatica	5 months	S	HNP	L
31	F/60	LBP, sciatica	30 years	S	HNP	L
32	M/62	Sciatica, NIC	30 years	Heavy lifting	Spinal stenosis	L
33	M/61	LBP, sciatica	3 years	S	HNP	Chemoneucleolysis
34	M/62	NIC	5 years	S	Spinal stenosis	F
35	F/64	NIC, LBP	1 week	S	Spinal stenosis	F
36	M/61	LBP, sciatica	7 months	S	HNP	L
37	M/79	NIC, sciatica	4 months	S	Spinal stenosis	F
38	F/62	LBP, sciatica	4 days	S	HNP	L
39	M/60	LBP, sciatica	30 years	S	FBSS	Adhesiolysis
40	M/72	LBP, sciatica	1 month	Heavy sports	HNP	L
41	M/62	LBP, sciatica	1 year	S	Spondylolithesis	F
42	M/61	LBP, sciatica	30 years	S	FBSS	F
43	M/65	LBP, sciatica	7 days	S	HNP	L
44	F/61	LBP, sciatica	3 years	S	Spondylolithesis	F

\*Sx. : Symptom, \*\*LBP : Low back pain, \*\*\*NIC : Neurogenic intermittent claudication, \*\*\*\*S : Spontaneously  
<sup>†</sup>FBSS : Failed back surgery syndrome, <sup>††</sup>HNP : Herniated nucleus pulposus, <sup>†††</sup>F : Fusion with instruments  
<sup>††††</sup>L : Partial or total laminectomy, <sup>†††††</sup>APLD : Automated percutaneous lumbar discectomy

SPSSPC version 8.0

p 0.05

가

**결 과**

**1. 연령 및 성별분포**

60 (60~69 ) 70 (70~79 )  
 38 (86.4%), 70 (63.6%),  
 64.0 가 28 (36.4%)  
 가 16 (36.4%) 가  
 (Table 2).

**2. 임상양상 및 수술전 진단**

가 36 (81.8%) 가  
 32 (72.7%)  
 (neurogenic intermittent claudication)  
 12 (27.3%), 1 (2.3%), 1 (2.3%)  
 63.3  
 가 34 (77.3%) 가  
 가 6 (13.6%), 4  
 (9.1%)  
 22 (50.0%),  
 12 (27.3%), 5 (11.4%), Fa-  
 iled back surgery syndrome 3 (6.8%),  
 2 (4.5%) (Table 3).

**3. 수술전 이환률 및 마취 위험도**

44 19 (43.2%)  
 8 (18.2%)  
 2 (4.5%) 가  
 3 (6.8%), 2 (4.5%),  
 2 (4.5%), 1 (2.3%), 1 (2.3%)  
 가  
 60 38 14  
 (36.8%), 70 6 5 (83.3%) 70  
 가  
 (p=0.033)(Table 4).

American Society of Anesthesiologists(ASA)  
 , 60 70 2.39 2.83  
 70 가  
 (p=0.068).

**Table 4. Preoperative morbidity**

Systemic disease	Age		Total No.(%)
	60 - 69(%)	70 - 79(%)	
Hypertension	7(15.9)	1( 2.3)	8(18.2)
Diabetes mellitus	2( 4.5)	1( 2.3)	3( 6.8)
Coronary artery disease	1( 2.3)	1( 2.3)	2( 4.5)
COPD <sup>†</sup> /Asthma	1( 2.3)	1( 2.3)	2( 4.5)
Liver dysfunction	2( 4.5)		2( 4.5)
Thyroid disease	1( 2.3)		1( 2.3)
Anemia		1( 2.3)	1( 2.3)
Total	14(31.8)	5(11.4)	19(43.2)

<sup>††</sup>COPD : Chronic obstructive pulmonary disease

**Table 5. Anesthetic risk according to American Society of Anesthesiologist(ASA) scale**

Grade	Age		Total No. (%)
	60 - 69(%)	70 - 79(%)	
(with no systemic disease)			
(one-system, well-controlled disease)	24(54.5)	1( 2.3)	25( 56.8)
(multiple system disease, or wellcontrolled major system disease)	13(29.5)	5(11.4)	18( 40.9)
(severe, incapacitating disease)	1( 2.3)		1( 2.3)
(imminent danger of death)			
Total	38(86.4)	6(13.6)	44(100.0)

(ASA scale III)

3

(Table 5).

**4. 수술부위 및 수술방법**

1 가 33  
 (75.0%) 가 , 2 4 (9.1%), 3 6  
 (13.6%), 4 1 (2.3%)  
 22 (50.0%) 가  
 17 (38.6%),  
 2 (4.5%), failed back surgery syndrome  
 2 (4.5%), 1 (2.3%)  
 (Table 3).

**5. 합병증**

44 5 (11.4%)  
 3 2  
 1

1 ( 8) 60 38 4 (10.5%), 70 6  
 1 (16.7%) 70 (p=  
 3  
 2 4 0.660).  
 (Table 6).

**Table 6.** Postoperative complications

Complication	Age		Total No.(%)
	60 - 69(%)	70 - 79(%)	
Wound infection	2(4.5)	1(2.3)	3( 6.8)
Instrument failure	1(2.3)		1( 2.3)
Hypovolemia	1(2.3)		1( 2.3)
Total	4(9.1)	1(2.3)	5(11.4)

6. 수술후 만족도

가

1) 생활능력정도

E1 2 (4.5%), E2 12 (27.3%),  
 E3 18 (40.9%), E4 9 (20.5%), E5 3 (6.8%)  
 E1 1 (2.3%), E2 8  
 (18.2%), E3 12 (27.3%), E4 15 (34.1%), E5 8  
 (18.2%)

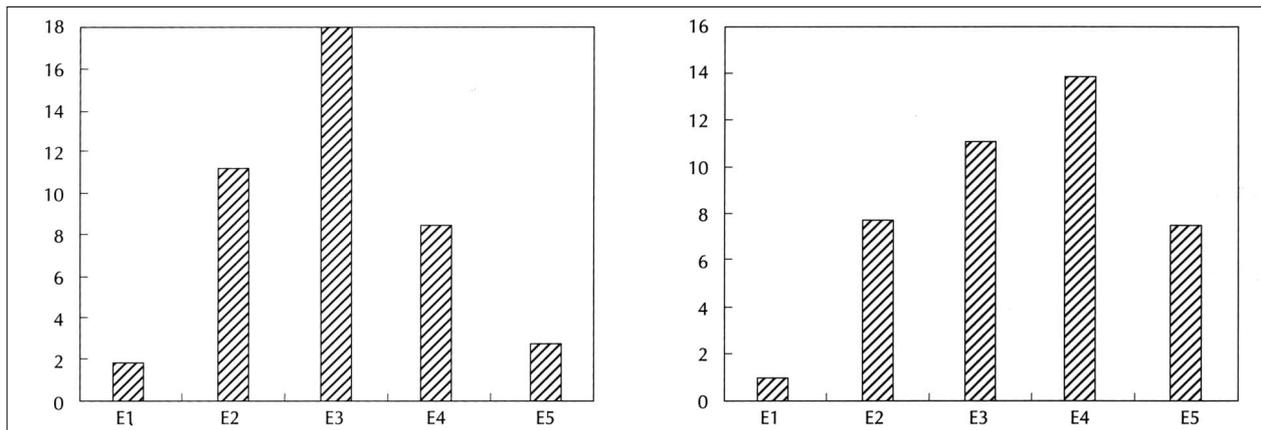


Fig. 1. The preoperative economic(left) and postoperative economic(right) scales in 44 patients older than 60 years of age underwent lumbar spinal surgery. The average preoperative and postoperative Prolo's economic grade was 2.98 to 3.48, respectively.

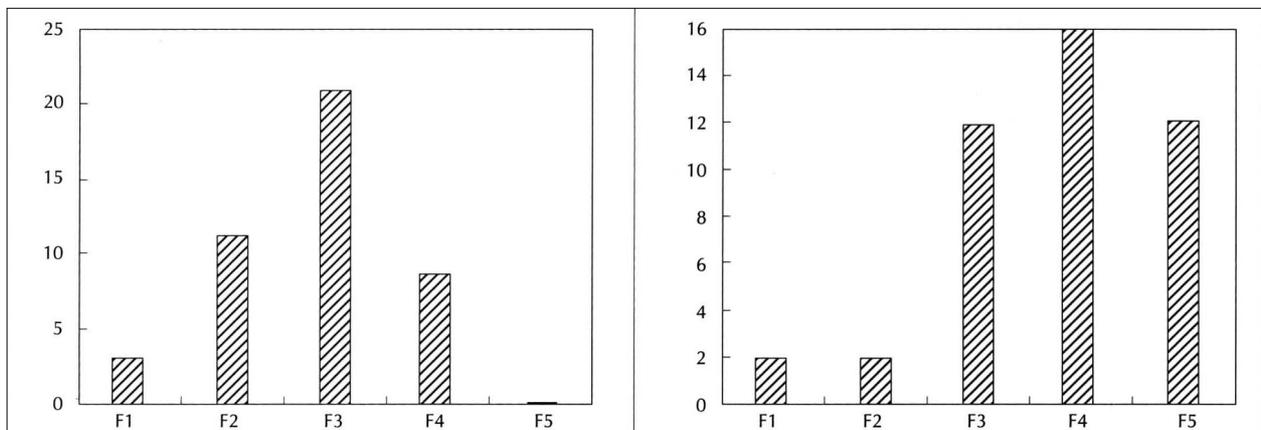


Fig. 2. The preoperative functional(left) and postoperative functional(right) scales in 44 patients older than 60 years of age underwent lumbar spinal surgery. The average preoperative and postoperative Prolo's functional grade was 2.81 to 3.75, respectively.

(Eo) (Ef) 2.98 3.48  
(p=0.00)

(Fig. 1).

2) 통증정도

F1 3 (6.8%), F2 11 (25.0%), F3 21 (47.7%), F4 9 (20.5%), F5 0 (0.0%)

F1 2 (4.5%) F2 2 (4.5%), F3 12 (27.3%), F4 16 (36.4%), F5 12 (27.3%)

(Fo)  
(Ff) 2.81 3.75  
가 (p=0.00). 28 (63.6%)

F4 F5 (Fig. 2).

고 찰

가 1998 4  
6 60 10.26% 4 70  
14) , 5 8.53% 가

가

가  
15)

3-5)7)9-11)13)19)  
Jonsson 10) 70 50

2

70

가

, Todd 19) 75  
65

90%

. Todd 21%  
79%

6)12)20)

1)3)5)7)19)20)

Conley 3) 가 66  
knots rods 25

, 52% 가 excellent outcome,  
44%가 good outcome, 4% poor outcome

25 86%

. Greefield 7) 60 38

가 Chi 1) 60  
30 2 6

60%

76%

60

가

가

가

가

4-6



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