

The Usefulness of Selective Nerve Root Block as a Predictor of Prognosis of Lumbar Disc Herniation

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– Abstract –

Study Design: A prospective study.

Objectives: To investigate the usefulness of selective nerve root block (SNRB) as a prognosis predictor of a lumbar disc herniation.

Summary of Literature Review: The biochemical factors of radiculopathy, as opposed to the biomechanical factors, are more reversible and responsive to a corticosteroid injection.

Materials and Methods: Fifty patients underwent SNRB for the radiculopathy caused by a herniated lumbar disc and were followed for at least 1 year. The straight leg raising (SLR) angle, visual analog scale (VAS) and the patients' subjective satisfaction, using the Weber criteria, were initially investigated, and again at 1 week and 1 month after the procedure, and finally at the final follow-up. The patients were divided into two groups according to the final satisfaction. Group 1 (satisfactory prognosis, N=32) had Excellent/Good results at the final follow-up, whereas Group 2(unsatisfactory prognosis, N=18) had Fair/Poor final results, or underwent surgical treatment. The improvements in the SLR and VAS at 1 week and 1 month were compared between two groups. The subjective satisfaction each time was compared to the final outcome; the relative risks were also calculated.

Results: The improvements in the SLR and VAS for Group 1 were significantly better than those for Group 2 at both 1 week and 1 month ($P<0.05$). Those patients with Excellent/Good results at 1 week and 1 month manifested satisfactory final outcomes ($P<0.05$). The risks of the patients with Fair/Poor results at 1 week and 1 month manifesting unsatisfactory final outcomes were 6.8 and 15.2 times higher than those with Excellent/Good results.

Conclusion: Selective nerve root block could be a useful method, not only to relieve acute leg pain, but also to predict the long-term prognosis of a herniated lumbar disc. Early surgical treatment could be considered for the patients not manifesting significant improvement until 1 month after SNRB.

Key Words: Lumbar spine, Disc herniation, Selective nerve root block

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가 1.

2002 11 2003 8

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1 가 가 50

5-8)

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(biomechanical factor)
cal factor)

(biochemi-

44 , 6 ,
25.4 (19~48)

7.6 (1~26)

9-12)

17 (12~21)

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가 35 (70%) , 4-5

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24 , 5 - 1 11
15 (30%) 3-4-5 3 , 4-5

neutral proteinase, prostaglandin, cytokine

- 1 12

12-

19)

, 5 - 1 4

가 20-26)

5

5

가 24 (48%) 가 , 5 1

가 27-33)

가 16 (32%),

1 가 7 (14%), 4, 5

가 34-37)

가 3 (6%)

가

가 , 1 5

5-8)

10 3

가

38)

가 2.

Tajima ³⁷⁾, Kikuchi ³⁹⁾

(prone position) 1, 1 (Table 1), 가 . 1 (32 , 13 5 1/4 8 cm, 22 (spinal needle) 1cm 10 VAS [(VAS - test VAS) × 100]/ VAS] 1 1 가 가 Fisher's exact test 2 × 2 1 1 0.5 cc (Isovist) 2% Lidocaine 1cc Tri- amcinolone 40 mg 30 32.8 ± 9.6 °, 1 62.3 ± 11.6 °, 1 60.2 ± 11.9 ° , 2 23.3 ± 10.8 °, 1 35.8 ± 14.4 °, 1 34.7 ± 14.4 ° 가 1 29.5 ± 13.9 °, 1 27.3 ± 13.1 ° 가 1 1 12.5 ± 13.7 °, 1 11.4 ± 13.5 ° 가 2 (P<0.05). VAS 1 4.7 ± 0.7, 1 1.6 ± 1.1, 1 1.6 ± 1.0 , 2 5.3 ± 1.3, 1 3.6 ± 1.2, 1 3.8 ± 1.3 . VAS 1 1 65.7 ± 22.9%, 1 64.3 ± 22.6% , 1 27.7 ± 28.3%, 1 26.8 ± 29.9% 2 (P<0.05)(Table 2). 가 1 / 가 1 (; /) 35 27 77.1%, 1 / 가 2 (15 ; /) 10 66.7% 1 / 가 (P=0.008). 1 / 가 30 26 86.7%, 1 / 가 2 20 14 70.0% 1 / 가

Table 1. Criteria of subjective satisfaction

	Criteria
Excellent	Completely satisfied
Good	Satisfied, lesser complaints
Fair	Not satisfied, partly incapacitated
Poor	Completely incapacitated for work due to chronic back pain or sciatica

(P<0.001)(Table 3). 2 가 1 , 1
/ 6.8, 가
15.2
(P<0.05). . Komori 7)
가
. Ahn 5)
가 (sequestered) (central extrusion)
가
1-4), , 가
가 1,3,4)
가
가
가, , ,
(biome-
가 (chanical factor) 9-12), phospholipase A2
가
(biochemical factor)가
phos-
pholipase A2가
Komori 6) , 가 neutral pro-

Table 2. Improvement of SLR (straight leg raising) angle and VAS (visual analogue scale)

		1W	1M
Increase of SLR	Group 1	29.4 ± 13.9 *	27.3 ± 13.1 *
	Group 2	12.5 ± 13.7 **	11.4 ± 13.5 **
Improvement of VAS	Group 1	65.7 ± 22.9%#	64.3 ± 22.6%#
	Group 2	27.7 ± 28.3%##	26.8 ± 29.9%##

1W: 1 week after procedure

1M: 1 month after procedure

* Vs. **: P < 0.05

Vs. ##: P < 0.05

Table 3. Results of subjective satisfaction

Subjective satisfaction		Results at final follow-up		
		Excellent / Good	Fair / Poor	Total
1 Week	Excellent/Good	27	8	35
	Fair/Poor	5	10	15
	Total	32	18	50
1 Month	Excellent/Good	26	4	30
	Fair/Poor	6	14	20
	Total	32	18	50

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 corticosteroid가 가,
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가

visual analog scale (VAS), Weber

50

1 () 32 / 5

2 () / 13

VAS

가

1 1 VAS 1 2

(P<0.05). 1 1 (P<0.05). 1 1

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6.8 , 15.2

1

2 395

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