



:
 : 6 (Visual analogue scale,
 VAS) 가 7 13
 가 3, 가 10 67
 “ ” 80 90
 가 . 6 50% (poor), 50 - 75%
 (good), 75% (excellent) . 6 , 3 , 6
 : 6.2 11 , 2
 4.5V (0.15 - 6V)
 L2 . 6 3.7 5 가 L4, L3,
 (53%), (23%), (24%) . 2 2

() (zygapophysial joint) neurotomy)

15%(1), 40% (2) (5, 11).

1911 Goldthwait (3)
 Ghormley가 (Facet syndrome)
 . 1975 Shealy (4)
 (facet

denervation)

가 6 Visual
 가 가 1990 Bogduk (5- analogue scale (VAS) 가 7
 10) , 13 67
 가 3, 10 .
 (radio - frequency

1 가 가 가
 2 가 (12)
 3 가

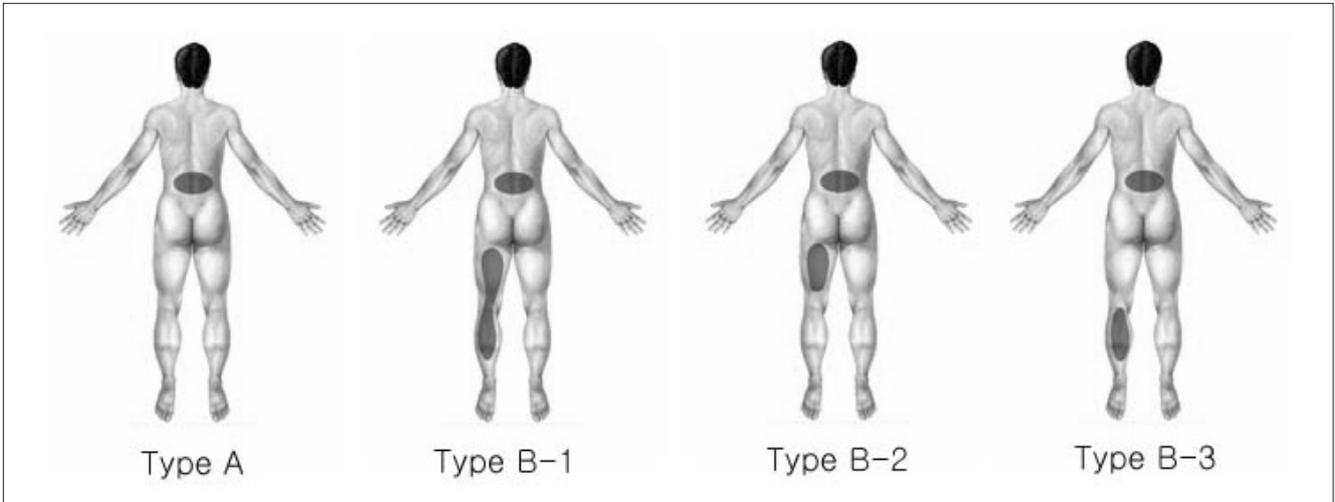


Fig. 1. Pain distribution pattern in the patients with lumbar zygapophysial joint pain:

- Type A : pain in only lumbar region.
- Type B-1 : pain in lumbar, thigh, and calf region.
- Type B-2 : pain in lumbar and thigh region.
- Type B-3 : pain in lumbar and calf region.

(Type A) (Type B)
 (Fig. 1), 가

(double comparative block)

50%

13

가 , 가

5 , 3 2

2% (lidocaine) (, ,)

가 1 0.5

% (bupivacaine) (, ,)

(double comparative block) (specificity) 1 - 4

0.5 mL



Fig. 2. Positions of needles for L2, 3, 4 medial branch block and L5 dorsal ramus block in lumbar oblique view.

(needle) 90 mm x 25 gauge (, ,)

15 - 20 (oblique view)
(Scotty dog)

가 가 3

가 3 가 3

가

가

(Fig. 2). (lohexol 647 mg, 0.3 mL;
가

0.5 mL 2% lidocaine
0.5% bupivacaine

(double comparative block) 50%

5
5

(sacral ala)

Thermocon (Tc - 50, Sometech, Korea)
(electrode) (active tip)가 0.5 cm
90 mm x 20 Gauge (canula)

2 - 3 mm (Fig. 2).
가

가 L5

(Fig. 3). 5

(Fig. 4).
5 Hz

0.5 mL 2% lidocaine
0.5% bupivacaine

가 . 50 Hz 0.2 - 0.7 V



Fig. 3. Positions of needles for L3 medial branch neurotomy in lumbar oblique view.

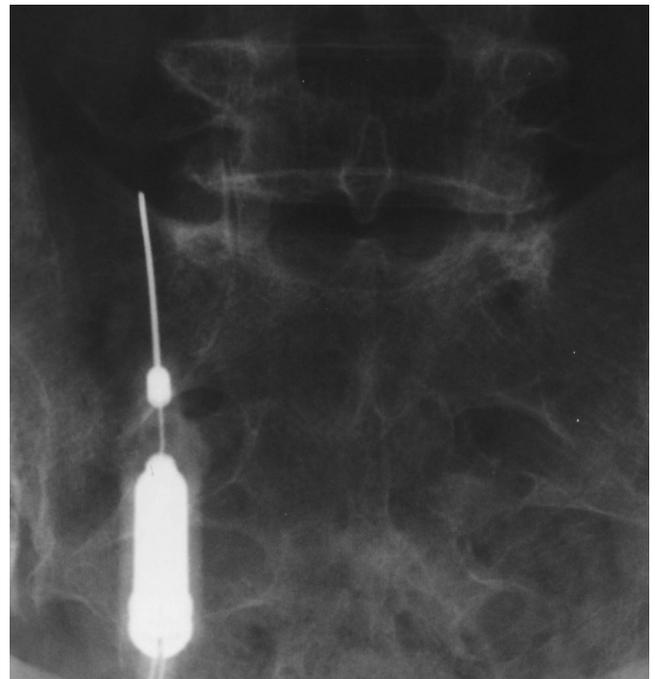


Fig. 4. Positions of needles for L5 dorsal ramus neurotomy in lumbar AP view.

Table 1. Clinical Features of 13 Patients Who Underwent Lumbar Medial Branch Radiofrequency Neurotomy and Outcome After 6 Months of Follow Up

| No | Age/Sex | Duration(yr) | Preop VAS score | Medial branch block | RF neurotomy | | VAS score (6 months FU) | Result |
|----|---------|--------------|-----------------|---------------------|--------------|----------|-------------------------|-----------|
| 1 | 70/F | 10 | 9 | L 2.3.4.5 (both) | RL 3.4.5 | LL 2.3.4 | 4 | good |
| 2 | 71/F | 3 | 8 | L 3.4.5 (both) | RL 3.4 | LL 4 | 4 | good |
| 3 | 69/M | 3 | 9 | L 2.3.4.5 (both) | RL 4.5 | LL 3.4.5 | 9 | poor |
| 4 | 70/M | 3 | 9 | L 2.3.4 (both) | RL 1.2 | LL 2.3 | 3 | excellent |
| 5 | 63/M | 10 | 7 | L 3.4.5 (both) | RL 3.4.5 | LL 3.4.5 | 6 | poor |
| 6 | 56/F | 3 | 7 | L 3.4.5 (both) | RL 3.4.5 | | 1 | excellent |
| 7 | 70/F | 10 | 8 | L 2.3.4.5 (both) | RL 5 | LL 2.3.4 | 8 | poor |
| 8 | 62/F | 1 | 7 | L 3.4.5 (both) | RL 2.4 | LL 2.5 | 1 | excellent |
| 9 | 61/F | 1 | 7 | L 3.4.5 (both) | RL 3.4 | LL 3.4.5 | 3 | excellent |
| 10 | 69/F | 2 | 7 | L 3.4.5 (Rt) | RL 5 | | 3 | excellent |
| 11 | 71/F | 1 | 7 | L 3.4.5 (both) | RL 4.5 | | 1 | excellent |
| 12 | 71/F | 5 | 7 | L 3.4.5 (both) | RL 3 | LL 3.4.5 | | excellent |
| 13 | 51/F | 10 | 8 | L 3.4.5 (both) | RL 2.3 | | 4 | good |

No: Number, VAS score: visual analogue scale score, L; lumbar, RF: radiofrequency, RL: right lumbar, LL: left lumbar, FU; follow up. F; female, M: male, yr: year

가 . 5Hz . 6 VAS score 3.7 .
 2 2
 가
 1 mL 2% lidocaine 80 90
 가
 3 mm 가 가
 가 가
 triamcinolone acetoneide (40 mg, 1 mL; , ,) Dreyfuss (5) 87%
 76% van Kleeff
 (13) Leclaire (11)
 ISIS (international spinal pain
 intervention society)
 6 , 3 , 6 VAS (12)
 6 50% Dreyfuss (5)
 (poor), 50 - 75% Leclaire (11)
 (good), 75% (excellent)
 (double comparative block)
 (facet joint injection)
 ,
 (false
 block) 가 (double comparative positive) 가 (12)
 13
 VAS 7.7
 6.2 11 ,
 2 3 5 ,
 (Table 1).
 4.5 V (0.15 - 6 V), 3.7 가가 가
 3.7 (double comparative
 2 가 block)
 5 가 L4, L3, L2
 6 (53%), (23%), (24%)

(placebo controlled block)

40%가

(2, 14).

Dreyfuss (5)

Haig (16)

가 (15).

(denervation)

가

2

5

가

3

5

가

가

가

가

(17 - 20).

50

Dreyfuss

가

Hz

가

(kyphosis)

(transforaminal epidural block)

(placebo effect)

가 가 1 가

가 1

가

가

Dreyfuss

(exclusion

criteria)

(5).

(half time)

lidocaine 1.5

, bupivacaine 2.7

가

1

1

가

2

50%

80 - 90%

가

(false positive)

ISIS

50 Hz

0.2 - 0.7 V

가

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Radiofrequency Neurotomy of the Medial Branch for the Management of Lumbar Zygapophysial Joint Pain¹

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Purpose: We wanted to investigate the efficacy of percutaneous radiofrequency (RF) neurotomy of the medial branch for the management of chronic low back pain due to lumbar zygapophysial joint dysfunction.

Materials and Methods: Thirteen patients who had unremitting chronic low back pain for more than 6 months and whose VAS scores were over 7 were selected on the basis of double comparative nerve blocks. The patients consist of three males and 10 females, and their mean age was 67 years. Sensory stimulation was performed to detect the "pathologic branches" that were responsible for pain generation. RF neurotomy was performed using a lesion generator at 80 C for 90 seconds. The postoperative outcome was classified, depending on the degree of pain reduction, as excellent (> 75%), good (50 - 75%), and poor (< 50%). Follow-up evaluation was performed at 6 weeks, 3 months and 6 months after surgery.

Results: The mean number of medial branches was 6.2. Eleven patients had bilateral disease and two had unilateral disease. Sensory stimulation was positive in all patients with a mean amplitude of 4.5V (range: 0.15 - 6 V). The L5 dorsal ramus was the most frequently involved segment, and this was followed by L4, L3 and L2. The number of lesionings for each medial branch was 3.7. The surgical outcome was graded as excellent (53%), good (23%), and poor (24%) after 6 months of follow-up. Transient backaches were noticed in two patients; however, complications were not observed. Recurrences were not demonstrated during the follow-up period.

Conclusion: We conclude that RF neurotomy of the medial branches is an efficient method to substantially alleviate the chronic low back pain caused by zygapophysial joint dysfunction.

Index words : Radiofrequency (RF) ablation

Spine

Joints

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