

요추부 수술후 경막외 Morphine Sulfate와 Bupivacaine의 지속적 주입에 의한 통증 조절의 효과

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= Abstract =

Pain Control with Continuous Infusion of Epidural Morphine and Bupivacaine after Lumbar Spinal Surgery : A Prospective Study

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Objective : The purpose of this non randomized prospective study was to verify the effect of pain control in small doses of epidural morphine and bupivacaine through continuous infusion for 48 hours.

Patients and Methods : Thirty - five patients who underwent spine surgery including laminectomy, fusion with fixation were assigned into two groups ; pain control group(n = 20) and control group(n = 15). Pain score was measured on a visual analogue scale(VAS). A continuous infusor was used to give morphine and bupivacaine continuously via indwelling epidural catheter which was placed before closure of muscles in pain control group.

Results : Mean scores(VAS) of pain control group were between 1.3 and 2.1 from the 30 min to the 72 hour, but the lowest mean score in the control group was about 2.6 at the 72 hour. Although a number of extra - analgesics were used in control group, differences of mean scores were statistically significant till 24 hour in pain control group. The patients in pain control group was less painful than the patients in control group from 24 hour till 72 hour, but it was statistically insignificant. There were some side effects such as nausea/vomiting, pruritus, urinary retention which existed transiently, but there was no respiratory depression.

Conclusion : It was concluded that the early postoperative pain can be easily and safely controlled with continuous infusion of epidural morphine and bupivacaine in small doses.

KEY WORDS : Epidural morphine and bupivacaine · Continuous infusor · Visual analogue scale · Lumbar spinal surgery.

서 론

morphine 가 morphine bu -
pivacaine 48
epidural visual analogue scale(VAS)
morphine¹⁾²⁾⁵⁾⁸⁾⁹⁾¹¹⁾¹⁶⁾ intrathecal morphine¹⁾⁶⁾

대상 및 방법

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 가 visual analogue scale(VAS)
 (SIMS Portex, Hythe, Kent, United Kingdom)
 2 3cm VAS
 morphine 2mg
 0.125% bupivacaine 8cc 10cc
 , 100cc 0.125% bupivacaine morphine sul-
 fate 8.0mg 2cc가 Bax-
 ter(Baxter Healthcare Corporation, Deerfield, IL, U.S.A.)

10 , 30 , 1 , 6 , 12 , 48 , 72

Table 1. Patient data

Groups	Number of Patients	Age(mean ± SD)	Weight(mean ± SD)
FUPCG	9	56.37 ± 9.24*	57.75 ± 9.20*
FUCG	4	47.50 ± 7.14	58.66 ± 7.50
LAPCG	11	39.73 ± 16.08**	55.62 ± 9.17**
LACG	11	47.64 ± 14.36	56.75 ± 9.45

*p>0.05 compared with FUCG, **p>0.05 compared with LACG, FUPCG : Pain Control Group after Fusion, FUCG : Control Group after Fusion, LAPCG : Pain Control Group after Laminectomy, LACG : Control Group after Laminectomy, Fusion group included posterolateral fusion or posterior interbody fusion with pedicle screw fixation. Laminectomy group included subtotal laminectomy or partial hemilaminectomy

Table 2. Pain scores measured by visual analogue scale

Groups	Pain scores(Mean ± SD)									
	Initial	10min	30min	1hour	6hour	12hour	24hour	48hour	72hour	
CG(n=14)	6.50 ± 2.37	6.07 ± 2.21*	6.03 ± 1.96*	5.03 ± 1.96*	3.82 ± 2.58*	3.80 ± 3.04*	4.12 ± 2.40*	3.35 ± 2.37	2.57 ± 2.28	
PCG(n=20)	7.75 ± 1.18	3.30 ± 2.43	1.55 ± 1.50	1.30 ± 1.81	7.30 ± 8.89	4.90 ± 6.9	1.24 ± 2.20	2.00 ± 2.44	2.09 ± 2.11	

*p<0.05 compared with PCG, PCG : Pain Control Group after operation, CG : Control Group after operation

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47.00 ± 15.07
 47.07 ± 12.88
 (p>0.05). 2 : 3
 56.5 ± 8.75Kg, 57.4

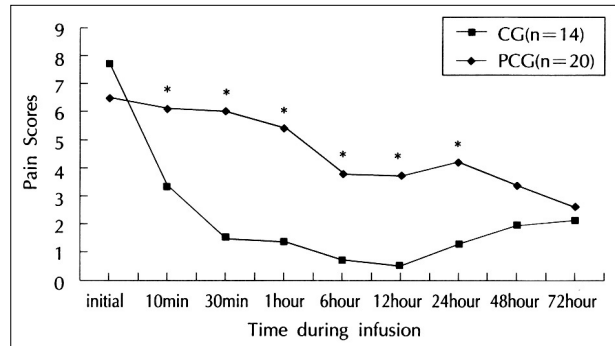


Fig. 1. Pain Scores measured by Visual Analogue Scale. *p<0.05 compared with PCG, PCG : Pain Control Group after operation, CG : Control Group after operation.

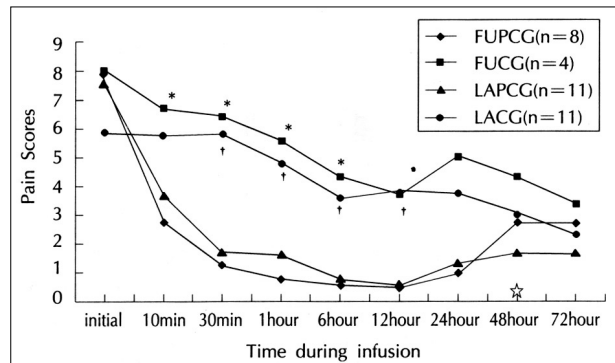


Fig. 2. Pain Scores measured by Visual Analogue Scale. *p<0.05 compared with FUPCG, *p<0.05 compared with LAPCG, FUPCG : Pain control group after Fusion, FUCG : Control group after fusion, LAPCG : Pain Control Group after Laminectomy, LACG : Control Group after Laminectomy, † : means the time which stopped to infuse epidural morphine.

Table 3. Pain scores measured by visual analogue scale

Groups	Pain scores(Mean ± SD)								
	Initial	10min	30min	1hour	6hour	12hour	24hour	48hour	72hour
FUPCG	7.87 ± 1.24	2.75 ± 2.46*	1.31 ± 1.16*	0.75 ± 0.53*	0.62 ± 0.68*	0.41 ± 0.56	0.97 ± 1.70	2.75 ± 2.53	2.66 ± 2.18
FUCG	8.00 ± 1.41	6.75 ± 1.25	6.37 ± 0.94	5.62 ± 0.75	4.25 ± 0.95	3.75 ± 2.98	5.00 ± 2.82	4.25 ± 2.21	3.37 ± 2.49
LAPCG	7.66 ± 1.07	3.66 ± 2.45	1.71 ± 1.72**	1.66 ± 2.26**	0.80 ± 1.02**	0.54 ± 0.78**	1.29 ± 2.54	1.70 ± 2.07	1.70 ± 2.07
LACG	5.90 ± 2.46	5.80 ± 2.39	5.90 ± 2.23	4.80 ± 2.20	3.65 ± 3.03	3.83 ± 3.22	3.78 ± 2.27	3.00 ± 2.44	2.25 ± 2.25

*p<0.05 compared with FUCG, **p<0.05 compared with LACG, FUPCG : Pain Control Group after Fusion, FUCG : Control Group after Fusion, LAPCG : Pain Control Group after Laminectomy, LACG : Control Group after Laminectomy

Table 4. Extra-Analgesic consumption during 48 hours after operation

Group	Number of Injection/Patients
FUPCG	8/ 8
FUCG	14/ 3
LAPCG	1/10
LACG	7/ 9

FUPCG : Pain Control Group after Fusion, FUCG : Control Group after Fusion, LAPCG : Pain Control Group after Laminectomy, LACG : Control Group after Laminectomy

Table 5. Side effects due to epidural morphine sulfate

	Pain control group
Pruritus	1/20(5%)
Nausea/vomiting	2/20(10%)
Urinary retention	2/20(10%)
Respiratory depression	0/20(0%)

고찰

± 8.7Kg (p>0.05)(Table 1).

1) VAS (p>0.05)(Fig. 2, Table 3), 72 2.6 (Fig. 1, Table 2).

2) VAS (p>0.05)(Fig. 2, Table 3), morphine bu - pivacaine 30 72 (Fig. 1, Table 2).

3) 10 24 (p<0.05), 72 (Fig. 1, Table 2).

4) 10 6 , 30 12 (p< 0.05)(Fig. 2, Table 3).

5) 48 가 4.7 (), 0.8 () 1 (), 0.1 () (Table 4).

6) / 가 2 , 1 , 가 2 (Table 5).

2). morphine morphine 가 14)15).

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 2)7) , E - mail : smsnsd@cha.ac.kr

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