

## 수술전 약물투여가 코 수술후 통증에 미치는 효과

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= Abstract =

### The Effects of Premedication on Postoperative Pain in Nasal Surgery

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**Background :** In spite of frequent nasal surgery, the importance of preoperative medication has not been examined carefully (CAREFULLY).

**Objective :** To identify the effect of premedication, we investigated the effect of premedication on postoperative pain in nasal surgery under local anesthesia.

**Materials and Methods :** We studied 120 cases, composed of 60 cases of unilateral sinus surgery and 60 cases of septoplasty. The patients were divided into four groups. We analysed 4 groups each consisted of 30 patients (N = 120). The first group consisted of patients who received atropine preoperatively. The second group received atropine and ketolorac tromethamine. The third group received atropine and diazepam. The fourth group received atropine, ketolorac tromethamine and diazepam. To evaluate the postoperative pain, we made the protocol listed according to Verbal Rating Pain Scores (VRP), Visual Analogue Pain Scores (VAS), -2, 4, 6, 12, 24 and 48 hours- and a global postoperative pain using the VAS.

**Results :** In septoplasty group, pain-relief effects showed postoperative pain of ketolorac tromethamine during postoperative 6-hours in the second & fourth groups. In sinus surgery group, Ketolorac tromethamine was effective on postoperative pain at postoperative 2-hour.

**Conclusion :** We concluded that preoperative ketolorac tromethamine was effective on septoplasty group than sinus surgery group. (**Korean J Otolaryngol 40 : 10, 1997**)

**KEY WORDS :** Ketolorac tromethamine · Postoperative pain.

서 론

(Caldwell - Luc Op)

: 1996 9 20

: 1996 11 12

가

가

## 2. 수술 방법

1  
 xylocaine(2% lidocaine + 1 :  
 100,000 epinephrine) ,  
 3.6cc(1.8cc x 2)  
 2cc,  
 3cc

가

15

가

30

Merocel®

가

48

24

48

가

1)2)3)

tiaprofenic acid

## 3. 수술후 통증에 관한 설문지

Verbal Rating Pain Score(VRP)

Visual Analogue Pain Score(VAS)

2 , 4 , 6 , 12 , 24 48

## 대상 및 방법

### 1. 연구 대상

1996 4 1 9 30

120

60

4

60

VAS 10cm

4

1

0cm

atropine(0.5mg, ) 30 ,

10 cm

2 atropine ketorolac tromethamine (30mg,  
) 30 , 3 atropine diazepam

(6mg, ) 30 , 4 atropine

48

VAS

ketorolac tromethamine diazepam 30

10cm

1

24 , 2 2, 4 1,  
 48 3 VRP  
 2  
 48 가

4. 통계분석

Paired - T test(p 0.05)

결 과

1. Verbal rating pain score(VRP)

VRP p 0.1 2  
 6 1 2 , 1 4 , 3 4  
 ketorolac tromethamine , 2 1 2 , 1 3  
 2 4 ketorolac tromethamine , 1 4 3 4 .  
 1 3 VRP 가

**Table 1.** The change of VRP\* means with time in septoplasty & sinus surgery groups

Group	Surgery.	2	4	6	12	24	48
1(N=30)	Septo.*	2.3±0.54	1.9±0.54	1.8±0.75	2.7±0.79	2.4±0.67	3.3±0.65
	Sinus†	2.0±1.28	1.1±0.79	1.1±0.90	0.6±0.67	0.4±0.51	0.3±0.49
2(N=30)	Septo.	1.0±0.85	1.1±0.97	1.3±1.15	1.2±0.98	1.3±0.75	1.8±1.08
	Sinus	1.3±0.62	1.3±0.89	1.5±1.09	1.3±0.97	1.1±1.00	0.8±1.11
3(N=30)	Septo.	2.0±1.25	1.9±1.29	1.9±0.99	1.8±1.03	2.0±1.25	2.4±0.84
	Sinus	1.9±1.07	1.4±0.98	1.4±1.27	1.0±1.41	0.6±0.79	0.4±0.54
4(N=30)	Septo.	1.1±1.20	1.3±1.06	1.3±0.95	1.5±0.71	1.7±1.42	2.0±1.56
	Sinus	1.2±0.72	1.0±0.74	1.0±0.74	0.7±0.89	0.4±0.67	0.1±0.19

\*VRP : Verbal Rating Pain Score \*Septo : Septoplasty † Sinus : Sinus surgery

**Table 2.** The change of VRP p-value with time in septoplasty & sinus surgery groups

Group	Surgery	2	4	6	12	24	48
1 & 2	Septo.	0.01	0.004	0.12	0.00	0.00	0.00
	Sinus	0.09	0.47	0.32	0.06	0.06	0.18
1 & 3	Septo.	0.87	0.98	0.84	0.03	0.43	0.02
	Sinus	0.80	0.44	0.54	0.49	0.65	0.70
1 & 4	Septo.	0.08	0.13	0.19	0.001	0.20	0.03
	Sinus	0.07	0.79	0.81	0.80	1.00	0.09
2 & 3	Septo.	0.03	0.09	0.14	0.15	0.14	0.11
	Sinus	0.21	0.84	0.90	0.69	0.23	0.30
2 & 4	Septo.	0.73	0.55	0.93	0.37	0.44	0.71
	Sinus	0.76	0.33	0.20	0.14	0.07	0.04
3 & 4	Septo.	0.08	0.12	0.06	0.09	0.07	0.003
	Sinus	0.16	0.34	0.44	0.59	0.67	0.12

: 40 10 1997

가 p 0.1  
 2 1 2 , 1  
 4 , 2 1 4 0.1  
 2 4 , diazepam 4 , 2 3 3 4 ,  
 1,2 3,4 2 1 2 .  
 가 가  
 2. Visual analogue pain score(VAS)  
 VAS VRP  
 6 ketorolac  
 tromethamine 2 4 ketorolac  
 tromethamine 1 3 VAS  
 .  
 2, 4 1, 3 VAS  
 .  
 VRP .

가 p  
 2 1 2 , 1  
 4 , 2 3 3 4 ,  
 2 1 2 .  
 가 가  
 가 p 0.1  
 2 1 2 , 1 4  
 , 2 1 2 2 4 .  
**Table 5.** The satisfactory score to pain in each groups

Group	Septo	Sinus surgery
1	52 ± 17.8	88 ± 14.8
2	70 ± 16.5	93 ± 5.0
3	58 ± 24.9	83 ± 18.0
4	63 ± 21.6	91 ± 7.9

**Table 3.** The change of VAS\* means with time in septoplasty & sinus surgery groups

Group	Surgery	2	4	6	12	24	48
1 (N=30)	Septo.	5.3 ± 1.94	4.7 ± 1.08	4.8 ± 1.44	3.8 ± 2.27	4.4 ± 3.05	5.3 ± 1.95
	Sinus	5.4 ± 2.79	3.4 ± 1.62	3.8 ± 2.67	1.9 ± 1.83	1.4 ± 1.43	0.3 ± 0.45
2 (N=30)	Septo.	2.8 ± 2.02	2.8 ± 2.27	3.1 ± 2.56	3.1 ± 2.21	3.6 ± 1.92	3.8 ± 2.03
	Sinus	3.6 ± 1.47	3.4 ± 2.09	2.9 ± 2.05	2.9 ± 2.05	2.3 ± 2.02	1.6 ± 2.38
3 (N=30)	Septo.	4.9 ± 2.53	4.6 ± 2.51	4.2 ± 2.14	4.3 ± 2.10	4.6 ± 2.67	5.2 ± 2.58
	Sinus	4.2 ± 2.51	3.8 ± 2.36	2.4 ± 2.43	2.6 ± 3.27	1.4 ± 1.79	0.7 ± 1.25
4 (N=30)	Septo.	2.7 ± 2.83	3.2 ± 2.45	3.3 ± 2.30	4.1 ± 2.92	3.9 ± 3.08	4.6 ± 2.75
	Sinus	3.0 ± 1.80	2.5 ± 1.75	2.5 ± 1.75	1.8 ± 2.17	1.3 ± 1.83	0.1 ± 0.19

\*VAS : visual Analogue Pain Score

**Table 4.** The change of VAS p-value with time in septoplasty & sinus surgery groups

Group	Surgery	2	4	6	12	24	48
1 & 2	Septo.	0.003	0.004	0.03	0.43	0.45	0.07
	Sinus	0.07	1.00	0.36	0.22	0.19	0.07
1 & 3	Septo.	0.68	0.88	0.45	0.63	0.88	0.94
	Sinus	0.37	0.72	0.24	0.64	0.95	0.38
1 & 4	Septo.	0.03	0.08	0.09	0.81	0.75	0.50
	Sinus	0.02	0.18	0.15	0.84	0.85	0.26
2 & 3	Septo.	0.04	0.08	0.26	0.18	0.33	0.17
	Sinus	0.56	0.74	0.62	0.81	0.33	0.29
2 & 4	Septo.	0.95	0.72	0.88	0.37	0.80	0.49
	Sinus	0.36	0.24	0.56	0.19	0.18	0.05
3 & 4	Septo.	0.09	0.21	0.38	0.86	0.59	0.59
	Sinus	0.27	0.22	0.93	0.57	0.84	0.23

**Table 6.** comparison of p-value in satisfactory score to pain in each groups

Group	Septo,	Sinus surgery
1 & 2	0.01	0.22
1 & 3	0.53	0.58
1 & 4	0.21	0.50
2 & 3	0.21	0.18
2 & 4	0.42	0.37
3 & 4	0.06	0.30

, diazepam 1, 2 3, 4  
가 .

3. 통증에 대한 만족도(%)

ketorolac tromethamine 1, 3  
2, 4 가 ,

고 찰

5).

가

medial thalamus, nucleus raphe magnus 가

가 6).

opiate receptor가 morphine morphine endorphine

가

가 , (postanesthesia care unit) 가,

7).

(central sensitization) 가

2).

tromethamine

ketorolac

prostaglandin

Ketorolac tromethamine 4.5

7

ketorolac tromethamine

Ketorolac tromethamine 1990

. Moss 8)

ketorolac tromethamine 60mg

45

ketorolac tromethamine

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Varrassi ketorolac tromethamine  
 가 . VRP ketorolac tromethamine  
 , , 가 가  
 , morphine , catecholamine 6  
 , cortisol , potassium , , ketorolac tromethamine  
 creatinine , , prothrombin time, pa-  
 rtial thromboplastin time . ,  
 . 2 6 ketorolac tromethamine 가  
 가  
 cortisol , co- ketorolac tromethamine 가  
 rtisol , 가  
 morphine ketorolac tromethamine 가  
 가  
 . ketorolac tromethamine  
 9) . keto-  
 , ketorolac tromethamine rolac tromethamine 가  
 . Deal 10) , diazepam 가  
 ket- 가  
 orolac tromethamine diazepam  
 .  
 24 48 , VRP  
 ketorolac tromethamine VAS  
 가 ketorolac tromethamine  
 Higgins 11) 가 .  
 48  
 mine ibuprofen ketorolac trometha- 6  
 mine VAS ketorolac tromethamine  
 가 가  
 .  
 24  
 , 2 1 2 , 3 4 24 48  
 1 4 VRP VAS , 24  
 가 p 48  
 . diaz-  
 epam ketorolac tromethamine .

ketorolac tromethamine 가 4 6

ketorolac tromethamine 가

ketorolac tromethamine 가

ketorolac tromethamine 가 4.5 8 7

ketorolac tromethamine 가 60mg

ketorolac tromethamine 가 12 24

ketorolac tromethamine 가 1, 3

ketorolac tromethamine 가 2, 4

ketorolac tromethamine 가 4

ketorolac tromethamine 가 1 3

ketorolac tromethamine 가

**결 론**

diazepam

ketorolac tromethamine 가

ketorolac tromethamine

ketorolac tromethamine 가 48

ketorolac tromethamine 가 24

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