

# 성인 쇄골 간부 골절에서 두 가지 수술적 치료군 간의 결과 비교: 금속판을 이용한 관혈적 정복 및 내고정술과 Steinmann Pin을 이용한 경피적 검자 정복 및 골수강내 고정술의 결과 비교

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**목적:** 성인 쇄골 간부 골절에서 금속판을 이용한 관혈적 정복 및 내고정술과 Steinmann pin을 이용한 경피적 검자 정복 및 골수강내 고정술의 결과를 분석하여 비교하였다.

**대상 및 방법:** 2002년 3월부터 2006년 1월까지 본원에서 치료한 총 68예의 쇄골 간부 골절을 대상으로 하였으며, 금속판을 이용한 33예, Steinmann pin을 이용한 35예의 치료 결과를 분석하였다. 최종 결과 판정은 강 등의 기준에 의한 임상적 결과와 방사선학적 골유합 기간으로 하였고, 수술 시간을 비교하였다.

**결과:** 임상적 결과는 우수 이상의 예가 금속판을 이용한 군의 경우 총 33예 중 29예로 88%, Steinmann pin을 이용한 군의 경우 총 35예 중 32예로 91%의 결과를 보였다. 방사선학적 골유합 시기는 각각 평균 8.9주와 9.1주였고, 수술 시간은 금속판 군에서 평균 72분, Steinmann pin 군에서 평균 18분이었다.

**결론:** 성인 쇄골 간부 골절의 치료에 있어 금속판을 이용한 수술 군과 Steinmann pin을 이용한 수술 군은 임상적, 방사선학적 결과 면에서 통계학적으로 큰 차이를 보이지 않았으나, Steinmann pin을 이용한 수술 군에서 수술 시간 및 회복기간의 감소로 인하여 경제적인 면과 수술반흔의 감소에 따른 미용적인 면에서 더 만족스런 결과를 보였다.

**색인 단어:** 쇄골 간부 골절, 금속판 고정술, 골수강내 고정술, Steinmann pin

## Comparison of Results in Two Operative Treatments for Clavicle Shaft Fractures in Adult: Comparison of Results between Open Reduction and Internal Fixation with the Plate and Percutaneous Reduction by Towel Clip and Intramedullary Fixation with Steinmann Pin

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**Purpose:** To evaluate the results between open reduction and internal fixation with the plate and percutaneous reduction by towel clip and intramedullary fixation with Steinmann pin for clavicle shaft fractures in adult.

**Materials and Methods:** We have studied the results in 33 cases with the plate, 35 cases with the Steinmann pin among total 68 cases of clavicle shaft fracture. The patients were followed up over a period of at least 12 months. The final postoperative outcome was analyzed with the clinical outcomes using Kang's criteria, radiological union time and operation time.

**Results:** The clinical outcome that was good or excellent according to the Kang's criteria showed a distribution of 88% in the group using the plate with 29 cases out of total 33 cases, 91% in the group using the Steinmann pin with 32 cases out of total 35 cases. The mean radiological union time was 8.9 weeks in the group using the plate, 9.1 weeks in the group using Steinmann pin. The mean operation time was 72 minutes in the group using the plate, whereas was 18 minutes in the group using Steinmann pin.

**Conclusion:** In the treatment of adult clavicle shaft fracture, two groups did not show a significant statistical difference in clinical and radiological outcomes. However, the operation time and postoperative functional recovery was significantly shorter and faster in the group using Steinmann pin. Additionally economic and cosmetic aspect was more satisfactory in the group using Steinmann pin.

**Key Words:** Clavicle shaft fracture, Plate fixation, Intramedullary fixation, Steinmann pin

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서론

44% 2.6% 80% 8 19,27) 4,8)

Steinmann pin K-

5)

3,7,10,14,16,17)

가

1,11,12,27)

Steinmann pin

대상 및 방법

1. 연구 대상

2002 3 2006 1 12

가 가 68 33

35 11 69

가 38 가 30 가 가 21 40 가 가 36

32 가 가 24

가 8 가 5

Robinson classification<sup>25)</sup> type II

가 type IIB

가 type IIA 3

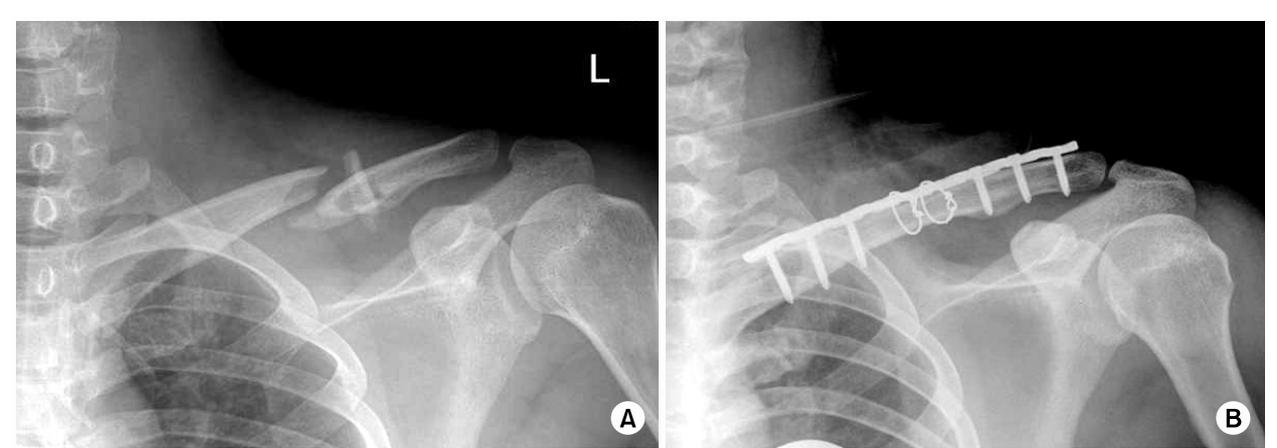
가 type IIB 3

3, 4

**Table 1.** Distribution by Robinson classification in two groups

Classification	Plate fixation (33)	Pin fixation (35)
Type IIA1	0	0
Type IIA2	0	0
Type IIB1	21	24
Type IIB2	12	11

(Table 1).



**Fig. 1.** (A) and (B) are preoperative radiograph and postoperative radiograph in open reduction and internal fixation with plate and screw.

1, 5  
2.6

2. 수술 방법 및 수술 후 처치

(1) 금속판을 이용한 관혈적 정복술 및 내고정술

2.8 mm (Fig. 2).

2.4~

12~15

3

(Fig. 1).

3. 치료 결과의 평가 방법

2 Multi sling arm sling  
2 90 4  
6  
12

6  
Kang's criteria<sup>15)</sup>  
(Excellent), 가  
(Good), 가  
(Fine), 가  
(Poor) 가

(2) Steinmann pin을 이용한 경피적 겹자 정복술 및 골수강내 고정술 (beach chair)

가 가

결 과

Steinmann pin

Kang's criteria<sup>15)</sup>

가 33 29

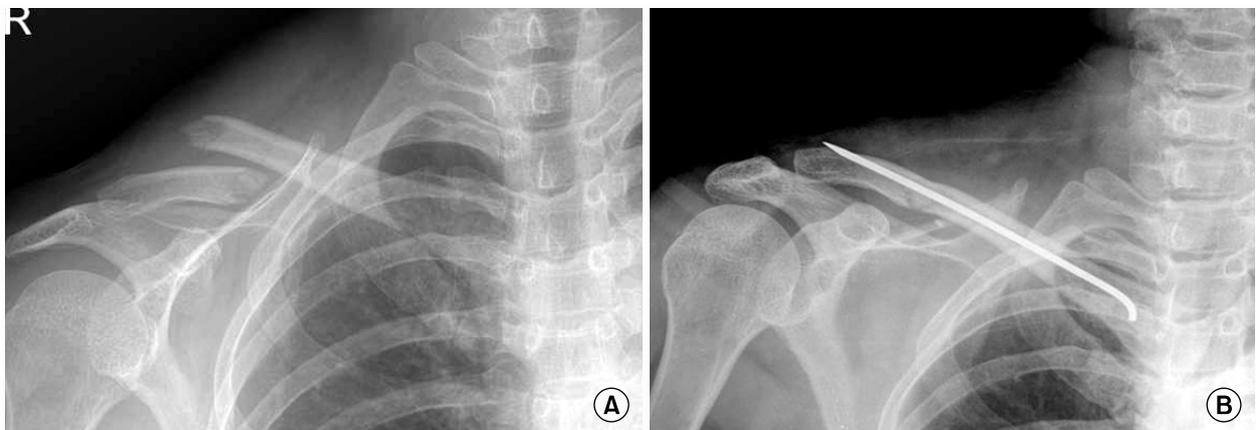


Fig. 2. (A) and (B) are preoperative radiograph and postoperative radiograph in percutaneous reduction by towel clip and intramedullary fixation with Steinmann pin.

**Table 2.** Clinical results by Kang's criteria

	Plate fixation (33)	Pin fixation (35)
Excellent	13 (39%)	15 (43%)
Good	16 (49%)	17 (48%)
Fair	2 (6%)	2 (6%)
Poor	2 (6%)	1 (3%)

88%, 32, 91%, (Table 2). 8.9, 9.1, (p>0.05, Chi-square test).

130, 10, 72, 35, 18, (p<0.05, Chi-square test).

1, 36, 1, 2, 3~4, 2, 2, 2, 가, 고, 찰, 1/3, S, Neer<sup>19)</sup>, Rowe<sup>27)</sup>, 1/3, 15,19), 5,26,29)

가, 6), Stanley, Norris<sup>28)</sup>, 140, 20, 33%, Post<sup>23)</sup>, Jupiter, Leffert<sup>12)</sup>, 가, 10 mm, 가, 가, 40, 13), 28, Zenni<sup>30)</sup>, 25, viaser<sup>20)</sup>, Knowles, Sherman plate, narrow DCP, semitubular plate, reconstruction plate, locking compression plate, 2), 23), K-, Steinmann, Knowl-<sup>21)</sup>, K-, 9), 100%, 94%, Boehme<sup>1)</sup>, 90, 가, Paffen, Jensen<sup>22)</sup>

비교군 간의 결과 비교

가

결

Steinmann

pin

( $p > 0.05$ ),

Steinmann pin

( $p < 0.05$ ).

2

결 론

Steinmann

pin

( $p > 0.05$ ),

Steinmann pin

( $p < 0.05$ ).

2

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