



15, 2, 2002 4

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Tel : 054)770-8221
Fax : 054)770-8500
E-mail : kjpil@dumc.or.kr

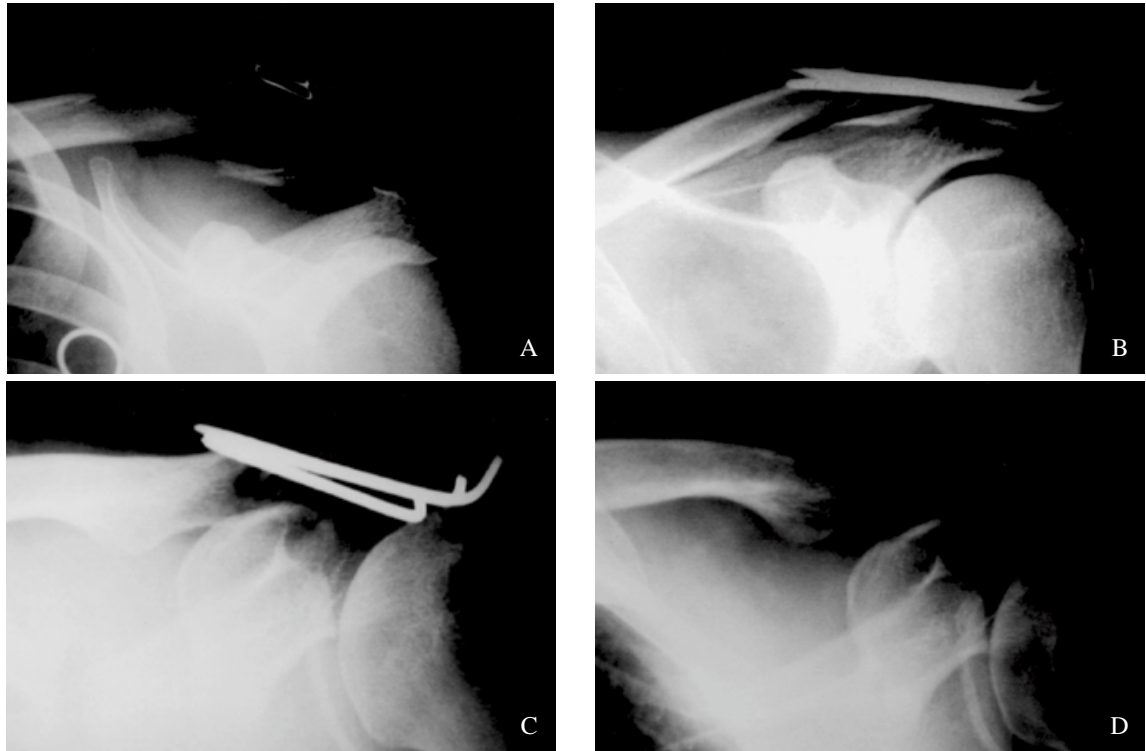
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K- Steinmann pin
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Table 1. Classification of functional results (by Kona et al)

Excellent	Patients were asymptomatic and capable of unrestricted use of the extremity
Good	Patients were able to resume their former occupation but complained of a mild nondebilitating reduction in motion, loss of strength, or pain
Fair	Patients had persistent discomfort, weakness, or loss of motion significant enough to interrupt the patients preferred lifestyle on a daily basis but still allow the patient to pursue most desired activities or remain at his preinjury employment status, with little or no modification of work requirements
Poor	Patients had a residual disability causing a significant alteration in their work or lifestyle

**Fig 1.**

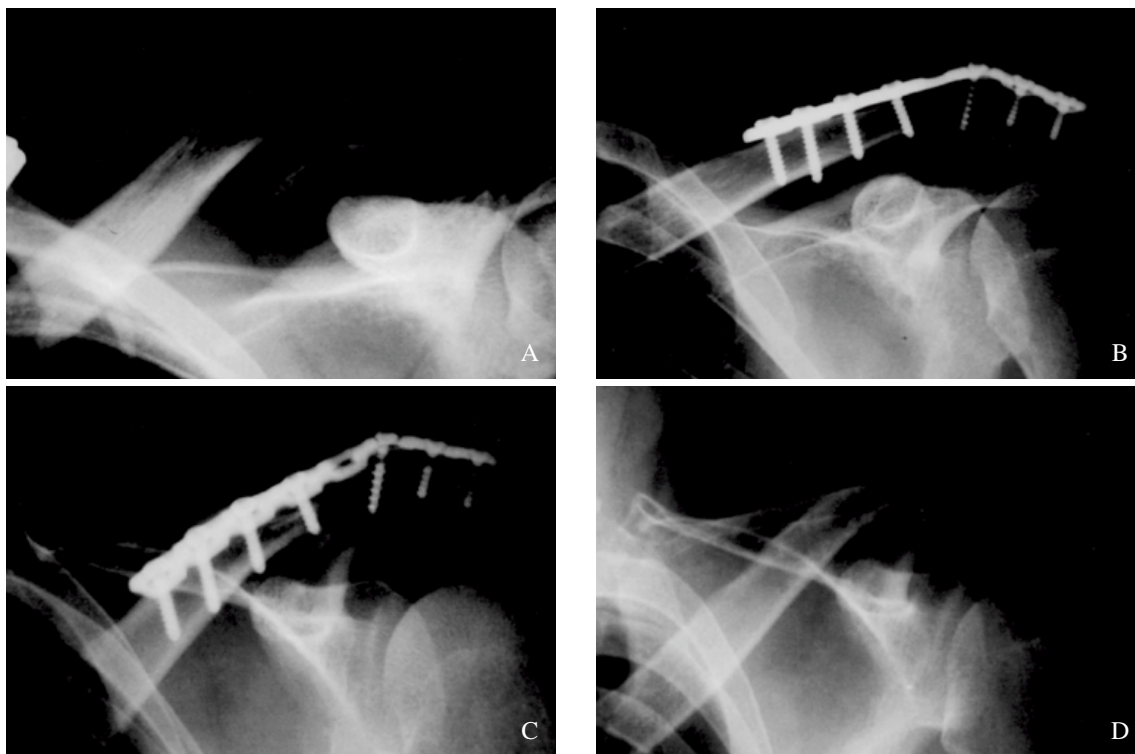
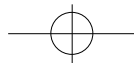
A: The preoperative radiograph of a 36-year-old male show type IIa distal clavicle fracture.

B: The immediate postoperative radiograph using open reduction and transarticular K-wires(x3) fixation.

C: After 8 weeks, complete union of fracture site was seen.

D: After K-wire removal, no evidence of A-C joint arthritis was found

(K- 8 Steinmann pin 19 5
27) 13 14 . 2
, 27 .
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12
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2 12-15%
, 1 2 -
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- 3 12)
85%

**Fig 2.**

A: The preoperative radiograph of a 26-year-old male show type IIb distal claviclefracture.

B: The immediate postoperative radiograph using plate and screws across the A-C joint because of too small distal fragment.

C: After 3 months, radiologic union was seen.

D: After plate removal at postoperative 1 year, no definite evidence of A-C joint arthritis was found. defect site

가 24).

2,4,7,8,10,11,22,29)

Neer

30%

4가

(trapezoid ligament)

, Neer

^{23,24)} Brunner

75

Neer I, III

Jater-

Breitner IIb

Jager-Breitner

IIa

13

4

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IIa

1/3

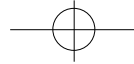
1/3

Jager-Breitner

⁴⁾

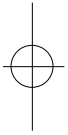
Edwards

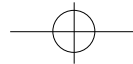
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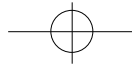
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 K- 16,19,20,25,27,33,34,35)
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 9)
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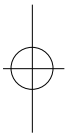


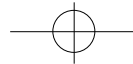


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Abstract

Surgical Treatment of Type II distal clavicle end Fracture

Phil-Hyun Chung, M.D., Suk Kang, M.D., Dong-Joo Chae, M.D., Jong-Pil Kim, M.D., and Sang-Ho Lee, M.D.

*Department of Orthopaedic Surgery, College of Medicine,
Dongguk University, Kyungju, Korea*

Purpose : Many authors have supported open reduction and internal fixation of type II distal clavicle fractures because of high rates of nonunion and delayed union after conservative treatment. Authors analyzed thirty-nine cases of type II distal clavicle fractures which had been treated operatively and reviewed the result of operative treatment retrospectively.

Materials and Methods : We evaluated 39 unstable distal 1/3 clavicular fractures with operative treatment from May 1992 to December 1999 and followed up for at least 1 year. According to the classification of Rockwood, type IIa was 28 cases and IIb was 11 cases. We treated all the cases by open reduction, such as transacromial pin fixation in 27 cases, and plate and screws with or without bone graft in 12 cases. The operative method was chosen in operative field.

Results : We analyzed the results in term of the time to radiologic union, functional evaluation, and complications. Average time to union was 8.5 weeks in the cases of transacromial pin fixation and 12.7 weeks in the cases using plate and screws with or without bone graft. Functional results was evaluated by classification of functional results by Kona et al. In cases of transacromial pin fixation, excellent result was 13 cases and good was 14 cases. In cases of plate and screws, excellent result was 4 cases, good 6 cases, fair 1 case, and poor was 1 case. The complications of transacromial pin fixation were 4 cases of pin site infection and 1 case of pin migration. But, neither nonunion nor deep infection was appeared. The complication of plate and screws was 2 cases of metal failure in which were fixated by only two cortical screws on distal fragment.

Conclusion : We concluded that minimal open reduction and transacromial pin fixation is thought to be good method in treatment of distal 1/3 clavicular fracture in regard to the time to union, functional results, and complications.

Key Words : clavicle, distal end fracture, transacromial pin fixation, plate & screw fixation

Address reprint requests to _____

Jong-Pil kim, M.D

Department of orthopaedic surgery College of Medicine, Dongguk University

1090-1, sukjang-dong, kyongju, kyongbuk South of KOREA (780-350)

Tel. 054)770-8221 Fax. 054)770-8500

E-mail : kjpil@dumc.or.kr