

K-

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: K-

: 1 12 28 ,

14 1/3 , K-

2 1 11.8 (: 8 - 20) , K- 11

, 1 4cm K- K-

: K-

.

: , K-

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, K- ,
.
가
1,4,5,10),
가 3,6).
Langer 4cm
가 10cm 3.2mm
0.062 inch K- 2
1997 가 , 1cm K-
K-
(Kirschner wire) K-
K-
No.1 Vicryl 가
No.1 Vicryl
1997 3 2000 12 K-
12 K- 1 가
28 (: 18 - 37) K- 4 (arm sling)
가 7 , 가 5 90
6
, 2 I 1 K-
1/3 5 7 .(Fig. 1).
2 10 8
2 , 10 가
1 11 12
30 11.8 (8 - 20)
(Cephalic tilt view) K- 8 K-
K- (bending) K-

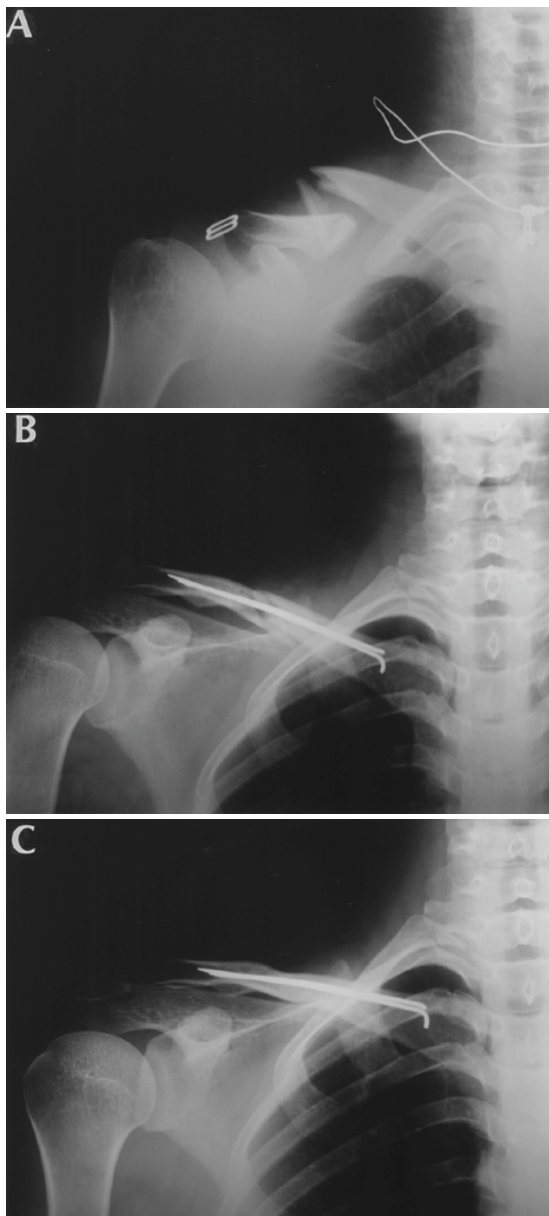


Fig. 1-A. A 21-year-old woman sustained comminuted clavicular shaft fracture.
1-B. Immediate postoperative radiograph shows well reduction and fixation with two K-wires.
1-C. The radiograph taken 3 months after operation shows good healing.

20 (Fig. 2).
 11 K- 가 .
 가
 , Langer
 4cm 11 , 1
 .
 K-
 , (4
) K-
 K-
 .
 ,
 .
 가 .
 - , 2cm ,
 ,
 ,
 가 ,
 ,
 가 5,7).
 Thompson⁸⁾ 1/3 가
 IIIB
 1/3 IIIB
 2
 .
 가 1,4,5,10),
 가
 가
 3,6). Knowles Hagie

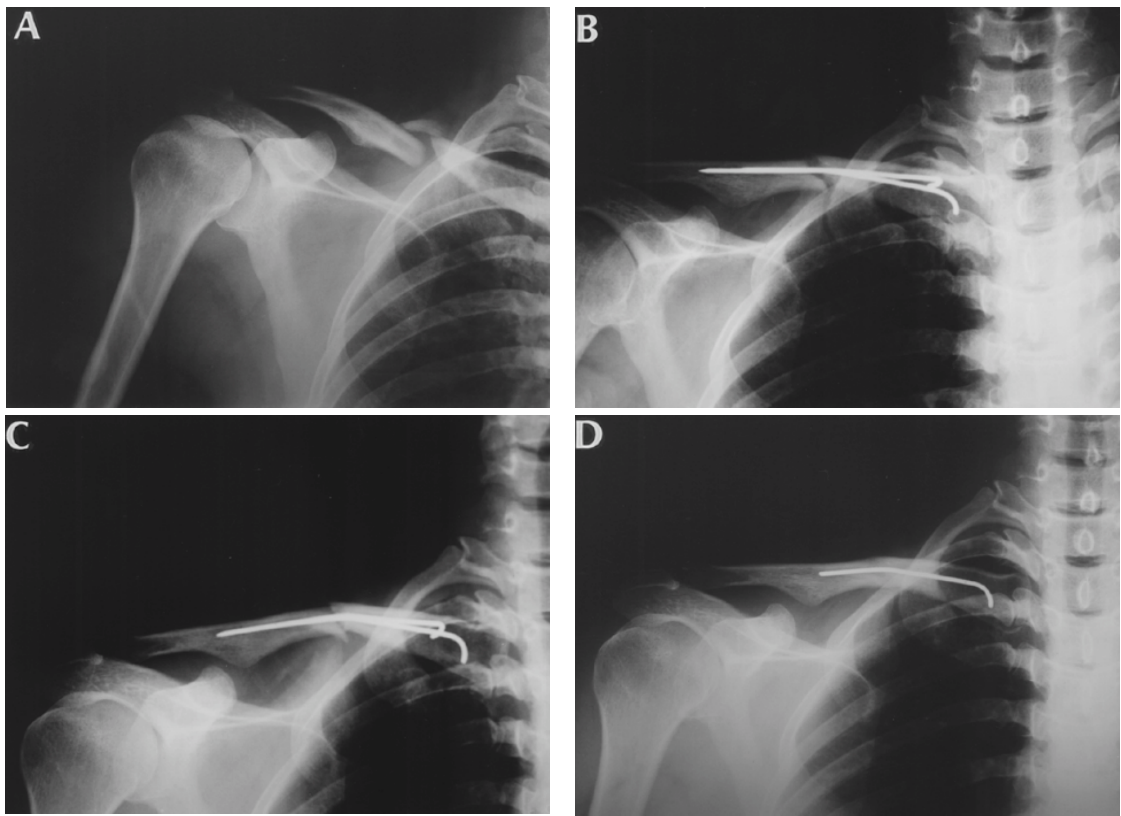


Fig. 2-A. A 33-year-old woman sustained type 1 open clavicular shaft fracture.
2-B. Immediate postoperative radiograph shows well reduction and fixation.
2-C. The radiograph taken 8 weeks after operation shows bending and migration of one K-wire. So one K-wire was removed.
2-D. The radiograph taken 5 month after operation shows good healing.

가 2
. Boehme 2) Hagie K- 1/3
가 96% Knowles
가 90 ,
9) , Knowles K-
K-
가 , 가 가 K-
가 , K- 1
K-
2 K- K- 11.8

Langer 가
4cm

K-

K-

가

K-

K-

K-

가

REFERENCES

1. **Ali Khan MA and Lucas HK** : Plating of fractures of the middle third of the clavicle. *Injury*, 9 : 263 - 267, 1978.
2. **Boehme D, Curtis RJ and Dehaan JT** : Non-union of fractures of the mid-shaft of the clavicle. *J Bone Joint Surg*, 73-A: 1219 - 1226, 1991.
3. **Jupiter JB and Leffert RD** : Non-union of the clavicle. Associated complications and surgical management. *J Bone Joint Surg*, 69-A: 753 - 760, 1987.
4. **Kang CS, Pyun YS, Sohn SW et al** : Open reduction and internal fixation of clavicular mid-shaft fractures. *J Korean Orthop Assoc*, 28: 186 - 192, 1993.
5. **Lazarus MD** : Fractures of the clavicle. In: Bucholz RW and Heckman JD ed. *Rockwood and Green's Fractures in adults*. 5th ed. Philadelphia, Lippincott Williams & Wilkins : 1041 - 1078, 2001.
6. **Manske DJ and Szabo RM** : The operative treatment of mid-shaft clavicular non-union. *J Bone Joint Surg*, 67-A: 1267 - 1371, 1985.
7. **Post M** : Current concepts in the treatment of fracture of the clavicle. *Clin Orthop*, 245: 89 - 101, 1989.
8. **Thompson JS** : Complications of clavicle fractures. In: Bigliani LU ed. *Complications of shoulder surgery*. 1st ed. New York, Williams & Wilkins Inc : 154 - 172, 1993.
9. **Wang JM, Roh KJ, Yun YH, Kim DJ and Ji IH** : Intra-medullary nailing with Knowles pin for the clavicle shaft fracture. *J Korean Orthop Assoc*, 31: 211 - 217, 1996.
10. **Zenni EJJr, Krieg JK and Rosen MJ** : Open reduction and internal fixation of clavicular fracture. *J Bone Joint Surg*, 63-A: 147 - 151, 1981.

Abstract

Internal fixation with K-wires for the clavicular shaft fractures in young women

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Purpose : To know the advantages and disadvantages of this procedure by analyzing the results of internal fixation with K-wires for clavicular shaft fractures in young women.

Materials and Methods : Twelve patients were followed for more than 1 year after the operation. All patients were female and average age was 28 years with average follow-up of 14 months. All cases were displaced fractures of the middle third with tenting of the skin and 2 cases were type 1 open fractures. After the operation, we investigated time to union, changes of K-wire, scar and disadvantages periodically.

Results : There was no nonunion and time to union averaged 11.8 weeks. Migration and bending of the K-wires occurred in one case. The length of surgical scar was about 4cm and the K-wires were easily removed under local anesthesia. But all patients complained of frequent radiographic evaluation, relatively long period of immobilization and irritation of the K-wires on medial part of the clavicle.

Conclusion : We think that internal fixation with the K-wires is one of the effective treatment options for the clavicular shaft fractures in young women.

Keywords : Clavicle, shaft fracture, K-wire

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