

- Rush

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Rush
: 1995 1 2002 1
Rush 1 가
가 33 , McLennan - Ungersma
가
: 33 15 , Rush
18
7 (1~20) McLennan - Ungersma 가
(Good)가 60% (15 9) (Excellent)가 27% (15
4) Rush 13 (1~18)
(Good)가 61% (18 11)
(Excellent)가 39% (18 7)
:
Rush
,
.
:
, Rush

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* 2002

가
7 (3~20)
, Rush 13
(1~18) Rush
가 6 가 Rush
가
가
3.5
mm 1/3
, Rush C-arm
predrill
pre-bending 3.2 mm Rush 3
2,10)
10 cm Rush
(Fig. 1A, B). 3
3
6~8
Rush
Rush
McLennan-Ungersma¹¹⁾ 가 (Table 1, 2)
1995 1 2002 1 Rush
33
Rush
Rush
15 , Rush 18
53 (26~79) 가
20 , 가 13
Lauge-Hansen⁹⁾
18 (54%) 가 -
7 (21%), - 5 (15%), -
1 가 3
5 , Rush
5 2 K-
, Rush
4 27%, (Good)가 9 60%, (Fair)
11 (5~29)
9 (6~15)
(Excellent)가 15



A B

Fig. 1. A 52-year-old female with Rt. lateral malleolar fracture showed initially checked radiograph (A), and rush rod fixation, of which tip was located over 10 cm from ankle joint, postoperatively (B).

2 13% , Rush (Ex-
cellent)가 18 7 39%, (Good)가 9
50%, (Fair) 2 11% .
(Fisher's exact test, $p>0.05$,

Table 3).

($p>0.05$).

2.

McLennan-Ungersma 가

가 9 (60%),
가 6 (40%) Rush 가
11 (61%), 가 7 (39%) .

(Chi-square test, $p>0.05$, Table 4).

가

($p>0.05$).

3.

1 , 가 1 ,
Rush



Fig. 2. A 52-year-old female with Rt. lateral malleolar fracture showed minimally operative skin scar and good function after 24 months postoperatively.

가 3 ,
(Fig. 2).

가
Cedell³⁾

residual talar tilt가 ,
Ramsey Hamilton¹⁴⁾ 1 mm
42%
(stress) 가
, Yablon¹⁶⁾ 가

Brown Hurbert²⁾
가

가

Table 1. Radiologic criteria of McLennan and Ungersma

Good	Fibula out to length <2 mm posterior displacement <1 mm increase in medial clear space
Fair	Fibula shortened ≤ 2 mm 2~4 mm posterior displacement 1~3 mm increase in medial clear space
Poor	Fibula shortened >2 mm >4 mm posterior displacement >3 mm increase in medial clear space

Table 2. Clinical criteria of McLennan and Ungersma

Excellent	Normal range of motion without pain or stiffness, return to previous activity level
Good	Normal range of motion without stiffness, return to previous activity level with only occasional pain following activity
Fair	Decreased range of motion, frequent pain followin activity
Poor	Decreased range of motion, pain and stiffness at rest

Table 3. Radiologic results by criteria of McLennan and Ungersma (by Fisher's exact test, $p>0.05$)

Grade	Plate group	Rush rod group
Good	9 (60%)	11 (61%)
Fair	6 (40%)	7 (39%)
Poor	0	0
Total	15 (100%)	18 (100%)

Table 4. Clinical Results by criteria of McLennan and Ungersma (by Chi-square test, $p>0.05$)

Grade	Plate group	Rush rod group
Excellent	4 (27%)	7 (39%)
Good	9 (60%)	9 (50%)
Fair	2 (13%)	2 (11%)
Poor	0	0
Total	15 (100%)	18 (100%)

Rush

, Rush

Steinmann

, K-

Rush

Danis-Weber^{4,15)}

1950

Lauge-Hansen⁸⁾

Lauge-Hansen

Yablon¹⁶⁾

Meyer

Kulmer¹¹⁾, Jergeson⁵⁾Kolssner⁷⁾

48

가

7

Rush

13

가

Rahn¹³⁾

가

가

가

Rush

가 50

가

가 가

12)

가

Rush

9)

6) Rush

가

가 가

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Abstract**Surgical Treatment of Internal Malleolar Fracture of the Ankle
- Rush Rod Versus Plate Osteosynthesis -**

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Purpose: We evaluated the results between the methods of open reduction and internal fixation using plate and screws and the methods of closed reduction and fixation with rush pin in lateral malleolar fractures.

Materials and Methods: We analysed the 33 fractures of lateral malleolus which had been treated by open reduction and internal fixation using plate and screws or closed reduction and fixation with rush pin from January 1995 to January 2002 and had been observed over 1 year.

The 33 patients were observed for the comparison of radiologic and clinical results in according to the measure of McLennan and Ungersma.

Results: Among the 33 cases, 15 cases were treated by open reduction and internal fixation with plate, and 18 cases were treated by closed reduction and Rush rods fixation.

In according to the measure of McLennan and Ungersma, good radiologic result was 60% (9 cases) and excellent clinical result was 27% (4 cases) in plate fixation, and good radiologic result was 61% (11 in 18 cases) and excellent clinical result was 39% (7 in 18 cases) in Rush rods fixation.

Conclusion: In ankle fractures of elderly patients who have soft tissue problems and osteoporotic bony quality, radiologic and clinical results of internal fixation of distal fibula were relatively same between fixation with plate and screws and Rush rods.

Therefore, closed reduction and internal fixation with Rush rods is one of the good treatment modalities of distal fibular fracture.

Key Words: Ankle fracture, Lateral malleolar fracture, Rush rod

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