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= Abstract =

Ankle and Tibiotalocalcaneal Arthrodesis using Lateral Malleolus as Bone Graft

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A variety of surgical approaches and bone grafting techniques for ankle and tibiotalocalcaneal arthrodesis have been described. We used transfibular approach and lateral malleolus was used for bone graft. This permitted excellent visualization of the ankle and subtalar joint so that the fusion can readily be achieved under the direct visualization. And also we didn't need to prepare the additional bone graft from another site. Ten ankle fusions and two tibiotalocalcaneal fusions were carried out and reviewed. The average age of the patients was 43 years(range, 27 - 58 years). The average follow-up was 27.8 months(range, 24 - 34 months). We evaluated the clinical and radiological results, and complications. All cases were satisfied and fused. But we experienced one minor complication that was posteroplantar heel pain caused by prominence of cannulated screw head. So, we suggest that this procedure has benefit for ankle or tibiotalocalcaneal fusion.

Key Words : Ankle and tibiotalocalcaneal joint, Arthrodesis, Lateral malleolus as bone graft

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1) 27 가
58 43.2 ,
10 (83%) (Table 1).
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2) 6
1,4-12,14-24) (Table 1).
3) 6 , , ,
16, 22) , , 가 1
16.9
(Table 1).
4) 10cm, 5cm
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1.
1995 10 1997 4 19
(Fig 1),
가 12 1 (Table 1). 7cm
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Table 1. Patients Data

No.	Sex/Age (yrs)	Side	Diagnosis	Time from onset (mos)	Postoperative follow-up (mos)
1.	M/47	Lt.	Infectious OA of hindfoot	5	24
2.	F/58	Lt.	Old fracture of talar neck	13	34
3.	M/28	Rt.	Old Pilon 's fracture	10	28
4.	M/51	Lt.	Traumatic OA of ankle	17	26
5.	M/42	Rt.	Old trimalleolar fracture	8	30
6.	M/56	Lt.	Degenerative OA of ankle	27	28
7.	M/27	Lt.	Traumatic AVN of talus	15	30
8.	M/36	Rt.	Old bimalleolar fracture	7	29
9.	M/42	Rt.	Old Pilon 's fracture	9	26
10.	F/53	Lt.	Rheumatoid arthritis	72	26
11.	M/41	Rt.	Old trimalleolar fracture	8	28
12.	M/37	Rt.	Old Pilon 's fracture	15	25

OA: osteoarthritis

AVN: avascular necrosis

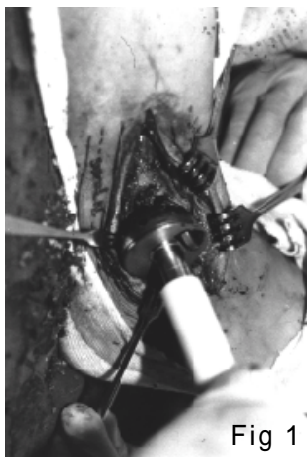


Fig 1



Fig 2

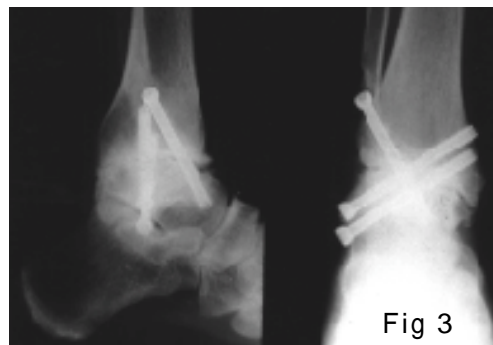


Fig 3

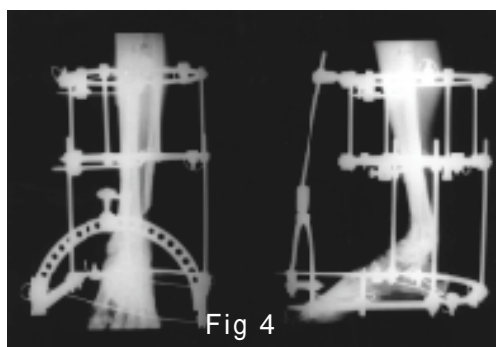


Fig 4

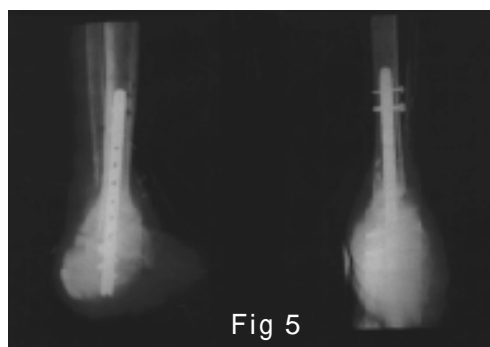


Fig 5

Fig 1. The distal fibula including lateral malleolus was reamed by using of acetabular reamer.

Fig 2. Excellent visualization of the ankle and subtalar joints at the same time.

Fig 3. Postoperative 6 months radiograph of a 29-year-old male shows ankle arthrodesis by using of three 5.0 mm cannulated screws.

Fig 4. Postoperative 3 months radiograph of a 41-year-old male shows ankle arthrodesis by using of Ilizarov external fixator.

Fig 5. Postoperative 1 year radiograph of a 47-year-old male shows tibiototalcalcaneal arthrodesis by using of intramedullary rod and screws.

(Fig 2).

2 (Fig 4),
1 (Fig 5) (Table 2).

가 10 ,
가 2 (Table 2).

5)

(morselized bone graft)

9 (Fig 3),

24
27.8 (Table 1).

34



Table 2. Summary of Patients

No.	Type of fusion	Type of fixation	Duration of union (wks)	Clinical results by Kitaoka(points)	Complication
1.	Tibiototalcaneal	Intramedullary nail	12	55	-
2.	Ankle	Cannulated screw	20	71	-
3.	Ankle	Ilizarov fixator	16	61	-
4.	Ankle	Cannulated screw	6	68	-
5.	Ankle	Cannulated screw	9	68	-
6.	Ankle	Cannulated screw	12	68	-
7.	Tibiototalcaneal	Cannulated screw	20	61	prominence of screw head
8.	Ankle	Cannulated screw	6	68	-
9.	Ankle	Cannulated screw	16	57	-
10.	Ankle	Cannulated screw	9	62	-
11.	Ankle	Ilizarov fixator	12	68	-
12.	Ankle	Cannulated screw	12	61	-

2.

3)

50%

1

Kitaoka¹³⁾

가

(Table 2).

, 76

, 51-75

, 26-50

, 25

1)

12

10

10.8 ,

16 가

(Table 2).

1882 Albert³⁾

2) Kitaoka

Kitaoka

12

64

(Table 2),

가

가

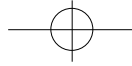
17,20,22-24)

2,5,7,9,12,14,23,24)

6,12,17),

1,4-9,11,12,14-

5,7),



922 • / 11 4

1,4,9,11,14,15,22,24),²³⁾ 가
 16,20) , 1951 Chamley⁶⁾ .
 1908 Goldthwait⁸⁾가
 1959 Ratliff¹⁷⁾ , 1915
 , Albee²⁾ ,
 , Kimberley¹²⁾가 1942 Horowitz⁹⁾가
 Campbell
⁵⁾, Chuinard Peterson⁷⁾ .
 1,9,22)
 ,
 Kennedy¹¹⁾가 ,
 23) , 72
 Z , ,
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 ,
 , 1988 Stulberg Riley²⁰⁾ ,
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 , Myerson Quill¹⁶⁾ 가 1
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 ,
 ,
 94%
 8.7 ,
 100%
 14.5 가 , Kitaoka 가,
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