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:		2	46
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:			46
2		,	
:			
19.4 가		18.2 가	
/	/		
1.84/1.73 ± 1.33(p; 0.705)		2.45 ± 2.17/2.22 ±	
		1.81 ± 1.13/2.67 ± 1.62/2.00 ± 1.64(p; 0.320)	
:		가	
		46	
		2	
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657

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Gustilo-Anderson . 46
 12 34
 2 , 29
 15 .
 20 , 8 , 6
 9 (Table 1). 46
 1/4 17 2
 , 3
 가 , ,
 46 Aesculap
 가
 14 8mm, 32 9mm
 270mm 330mm
 (Nail Insertion 304.9mm .
 Site, NIS)
 (Image Intensifier)
 2
 (Figure 2).
 1997 3 2001 5 4.5
 54 1 (가 7
 19.4) 가가 46 68.7
 32 , 14 2
 17 67 42.3 .
 가 21
 가 18 12
 가 6 1 4 3
 가 가 (bridging callus)
 가 6 .
 , ,
 AO .

Table 1. Types of fractures

	commuted	spiral	transveres	oblique	segmental	proximal	middle	distal
open	3	4	3	2	0	0	4	4
closed	6	16	5	4	3	2	10	26



Fig.2-A : A preoperative anteroposterior and lateral view



Fig.2-B : A postoperative anteroposterior and lateral view

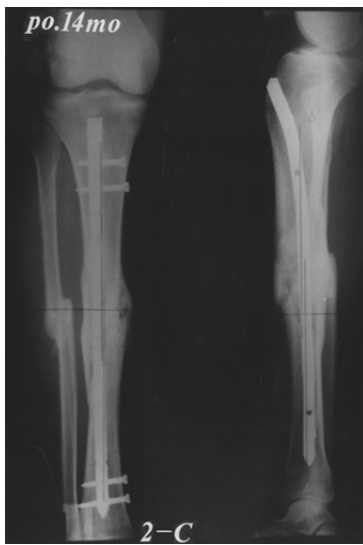


Fig.2-C : A recent anteroposterior and lateral view

가

(Figure 1).

5°

1cm

(+), (-)
(Nail Insertion Site)¹⁾

(0.45<NIS<0.55) 22
(NIS<0.45) 9

, (NIS>0.55) 15

SAS program
One-Way ANOVA
(p-value)

95%
0.05

46
18.2
19.4 가

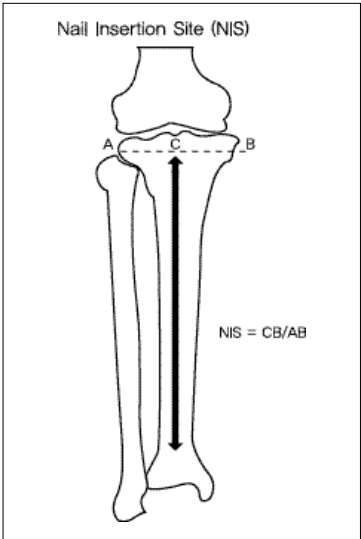


Fig.1 : Nail insertion site(CB/AB, defined as the ratio of the distance from the medial tibial cortex to the middle of the nail divided by the width of the tibial plateau.

2
46
(0.45<NIS<0.55)

가 22					
0.93°(: -4.~ +6.5),		0.98°(-			
3.~ +5°)		0.15°(-5		가	
f+3.5°),		1.09°(-4.~ +5.5°)		(NIS<0.45)	
9				가	
1.7°(-7.5.~ +5°),		2.75°(-6.~ +3°)			
		0.04°(-6.~ +4°),			
1.58°(-0.5.~ +4°)		(NIS>0.55)			
15					
1.03°(-4.5.~ +5°),		0.47°(-3.5.~		가	
+4°)		0.83°(-2.5.~		가	
+3°),		0.26°(-3.5.~ +3°)		10)	
1.68. ± 1.80/2.45. ± 2.17(p;0.628), 2.81. ±					
1.78/1.81. ± 1.13(p;0.544)		가		14,19).	
		2.39 ±			
2.40/2.22. ± 1.84 (p;0.818), 2.22. ± 2.29/2.67. ± 1.62(p;				가	
0.548)				3,5,8,11)	
1.83. ± 1.44/1.73. ± 1.33(p; 0.736), 2.30. ± 1.49/2.00. ±		1,9,18)가		가	
1.64(p; 0.482)					
				1985 Tarr	
		17)		1/3	
		15°			
0.636/0.589/0.705/0.320		42%		가	
p-value		1991 McKellop 15) 343			
(Table 2).		21 (6%)			

Table 2. Outcomes of fractures(Angulation)

	PoAP	PoLat	FuAP	FuLat	p-value	
					AP	Lat
center	1.68. ± 1.80	2.81. ± 1.78	2.45. ± 2.17	1.81. ± 1.13	0.628	0.544
medial	2.39. ± 2.40	2.22. ± 2.29	2.22. ± 1.84	2.67. ± 1.62	0.828	0.548
lateral	1.83. ± 1.44	2.30. ± 1.49	1.73. ± 1.33	2.00. ± 1.64	0.736	0.482
p-value	0.636	0.589	0.705	0.320		

PoAP : postoperative anterior posterior view

PoLat : postoperative lateral view

FuAP : last follow up anterior posterior view

FuLat : last follow up lateral view

center : 0.45<NIS<0.55 medial: NIS<0.45 lateral: NIS>0.55

- , 1988 Kettelkamp ¹¹⁾ 18.2 , 19.4
- 31 (mechanical axis)
- 가 가 가 가
- Gerald ⁷⁾ 가
- Freedmann⁶⁾ 145 가 가 가 가 가 2
- 가 가 가 가
- 가 가
- 1993 Delung ⁴⁾ 가
- 1996 Court-Brown ³⁾ 46 2
- 15.4 , 22.8 가
- ¹²⁾ 16.5 , ¹³⁾ 15.6 21.7 , 18.5 가
- 2) 23 17.9 , 19.4
- ¹⁶⁾ 64 19.9 가
- ²⁰⁾ 15 18 가
- 4 6 2
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Abstract

Unreamed interlocking nailing in tibia fracture

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Purpose : To evaluate of clinical results and malunion according to nail insertion site and early ambulation after unreamed interlocking intramedullary nailing for the treatment of tibial fractures,

Materials and Methods : We reviewed 46 tibial fractures that were treated with unreamed static intramedullary nailing prospectively from March 1997 to May 2001. Nail insertion site and angulation of fracture site were reviewed by radiograph. All of 46 cases, ambulation was started at postoperative 2 weeks, and then clinical outcomes were reveiwed

Results : In all 46 cases, union was achieved at average 18.2 weeks clinically and average 19.4 weeks radiographically. There is no significant difference in angulation according to nail insertion site, i.e. after central/medial/lateral insertion, outcome was $2.45^{\circ} \pm 2.17/2.22^{\circ} \pm 1.84/1.73^{\circ} \pm 1.33$ (p; 0.705) in last follow up anterioposterior view, and $1.81^{\circ} \pm 1.13/2.67^{\circ} \pm 1.62/2.00^{\circ} \pm 1.64$ (p; 0.320) in last follow up lateral view. No breakage of intramedullary nails and no stiffness on adjacent joints.

Conclusion : We confirmed that unreamed interlocking nailing in tibial fractures is one of the effective method for low recurrence of malunion and early ambulation

Key words : tibial fractures, unreamed interlocking nail, nail insertion site, malunion, early ambulation

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