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= Abstract =

Reamed versus Unreamed Intramedullary Nailing after External Fixator Application in the Treatment of Open Tibial-Shaft Fracture

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The authors reviewed 15 patients of open fracture of the tibial shaft who were treated by external fixation followed by intramedullary nailing. These fractures comprised two Type-I, two Type-II, four Type-IIIa, and seven Type-IIIb injuries. Ten patients were treated with unreamed intramedullary nailing and 5 patients were treated with reamed intramedullary nailing. The results were analyzed as followings:

1. All fractures had union at 5.2 months after intramedullary nailing and 4 true osteomyelitis were developed.
2. All osteomyelitis were developed for the patients who were treated with reamed intramedullary nailing.
3. There was no osteomyelitis who were treated with unreamed intramedullary nailing.

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351 (463-070)

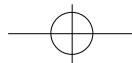
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4. Delayed conversion to intramedullary nailing after control of pin tract infection had no effect for prevention of osteomyelitis.

Key Words : Open Tibia Fracture, External Fixation, Unreamed Intramedullary Nailing, Reamed Intramedullary Nailing

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5.2

가

, 4

Gustilo type I 2 , II 2 ,

IIIa 4 , IIIb 7 , Gustilo type I

가 1 , II 1 , IIIa 1 , IIIb 1

가 (Table 1).

Staphylococcus aureus 2 , Staphylococcus epidermidis 1 , Enterobacter cloaca 1 가

Staphylococcus aureus 가 2

2

(Table 2).

4

10

3

, 4

5 1

가 (Table 3).

1993 1 1997 1

15

3-4

, 3 3 , 5 , 6

14 , 1 ,

22 63 (37) .

10

5

Table 1. Incidence of Infection according to Open Wound Type

Gustilo Type	I	II	IIIa	IIIb
Cases	2	2	4	7
Infection	1	1	1	1
Incidence	50%	50%	25%	14%

Table 2. Incidence of Infection according to Organism

Organism	S. aureus	S. epidermidis	E. cloaca	None
Initial	2	1	1	11
Infection	2	0	0	2



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Table 3. Incidence of Infection according to Conversion Time

Conversion Time	<4wks.	>4wks.
Cases	10	5
Infection	3	1
Incidence	30%	20%

Table 4. Incidence of Infection according to Nailing Time

Nailing	Immediate after ext. fixator removal	Delayed after pin-site healing
Cases	12	3
Infection	2	2
Incidence	17%	67%

Table 5. Incidence of Infection according to Nailing Type

Nail	Unreamed	Reamed
Cases	10	5
Infection	0	4
Incidence	0%	80%

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5,6,7,10,11,16)

Court-Brown⁴⁾ Gustilo type II, III

41

11.1%

, Velazco¹⁵⁾

(Lotte)

6.0%

1975 Olerud

Karlstrom^{8,9)}

Gustilo type II, III

, 1983 3 2

. 1983 Velazco Fleming¹⁴⁾ Hoffmann
Kuntscher 2 , Lotte

1

McGraw

Lim¹²⁾

16

44%

5

3

2

Aho¹⁾

Hoffmann

Kuntscher

5

(Table 4).

10

1

5

. Bone Johnson²⁾

, , Gustilo

5

type III

1

Pseudomonas

7-10

4

(Table 5).

McGraw

Lim¹²⁾

3

2

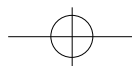
가

McGraw

Lim¹²⁾

44%

(28%)



가 . 2.
Gustilo type I 2 1 , II 2
1 , IIIa 4 1 , IIIb 7 1 .

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- 10 1
- 5 4 가 가
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