

슬관절 인공 삽입물 주위 골절에서 골수강 내 금속정 치료의 중기 추시 결과

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목 적: 슬관절 전치환술 후 발생한 인공 삽입물 주위 골절에서 역행성 골수강 내 금속정을 이용한 치료를 시행하고 이를 중기 추시한 결과를 보고하고자 한다.

대상 및 방법: 1998년 1월에서 2004년 1월까지 인공 삽입물 주위에 골절이 발생한 11명 환자, 11예의 슬관절을 대상으로 하였다. 평균 추시 기간은 42개월 (범위, 30~86개월), 연령의 분포는 평균 66세 (범위, 57~79세)였으며, 남자가 2예, 여자가 9예였다. 전 예에서 역행성 골수강 내 금속정을 이용한 치료를 시행하였다. 평균 관절운동범위, Hospital for Special Surgery (HSS)의 knee rating score, 대퇴 경골각을 조사하였으며, 최종 추시까지 인공 삽입물의 해리 소견, 금속 실패 등의 합병증의 병발 유무를 확인하였다.

결 과: 술 후 평균 관절운동범위는 103.6°였고, HSS의 knee rating score는 평균 83.5점이었으며, 대퇴 경골각은 외반 6.3°, 골유합시키는 평균 4개월이었다. 1예에서 수술 중에 골절의 근위부에 새로운 골절이 발생하였으나, 경과에는 큰 영향이 없었다. 최종 추시까지 인공 삽입물의 재치환이 필요한 경우는 없었다.

결 론: 슬관절 전치환술 후 발생한 인공 삽입물 주위 골절에서 인공 삽입물이 안정한 경우, 역행성 골수강 내 금속정을 이용한 치료는 적은 합병증을 가지는 신뢰할만한 수술 방법이며, 저자들의 경우 중기 추시까지 인공 삽입물의 재치환이 필요한 경우는 없었다.

색인 단어: 인공 삽입물 주위 골절, 슬관절 전치환술, 역행성 골수강 내 금속정

Midterm Results of Treatment with a Retrograde Nail for Periprosthetic Fractures of the Femur Following Total Knee Arthroplasty

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Purpose: To analyze the midterm results of the treatment with a retrograde nail for periprosthetic fractures of the femur following total knee arthroplasty.

Materials and Methods: Between Jan 1998 and Jan 2004, 11 cases in 11 patients were treated for the periprosthetic fractures following total knee arthroplasty. The mean follow-up was 42.0 (30~98) months and the mean age was 66.0 (57~79) years old. 2 were males and 9 patients were females. In all cases, retrograde nailing was done for the periprosthetic fractures. Postoperative range of motion, HSS knee rating score, femorotibial angle, the time required for union, complications were evaluated.

Results: Postoperative range of motion was 103.6° degrees on an average, HSS knee rating score was 83.5 points on an average at the last follow up. The mean angulation on radiograph was valgus 6.3°. The mean time required for union was 4 months. One had a newly fracture line at proximal part of supracondylar fracture, but there was no significant in clinical course. There was no prostheses required revision.

Conclusion: It appears that retrograde nail is a reliable surgical technique for periprosthetic fractures of the femur following total knee arthroplasty with low complication rate. The midterm results in our study showed that none of the prostheses required revision.

Key Words: Periprosthetic fracture, Total knee arthroplasty, Retrograde nail

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서 론

가

30

가

가

대상 및 방법

0.6~2.5%

^{1,18)}

2004 1

, 11

1998 1

11

⁶⁾

, Rorabeck¹⁶⁾

Type III

30

3,4,6,15)

66.0 (, 57~79)

가 2

가 9

9

, DiGioia Rubash⁶⁾

가 2

7

4

1.5 mm

5°

10°

1 cm

1

10

10°

31.9 (, 10~

72)

42.0 (, 30~98

)

Rorabeck¹⁶⁾

가

Type II

(Table 1).

⁷⁾

(Unreamed femoral nail, Syn-

2,9,12,13)

thes^{®)}

가

가

Table 1. Summary of cases

Age/Sex	Interval between TKA* and periprosthetic fracture (months)	ROM (°) [†]		HSS [‡] knee rating score		Angulation (valgus°)		Union time (months)
		Preop	Postop	Preop	Postop	Preop	Postop	
1. 57/F	10	130	105	91	85	7	7	4.0
2. 71/F	72	110	105	87	85	4	6	4.0
3. 79/F	18	100	100	86	81	5	5	5.0
4. 60/F	25	130	120	91	89	6	7	3.0
5. 71/F	72	120	110	89	86	6	6	4.0
6. 66/F	27	105	100	86	82	6	6	4.0
7. 72/M	14	110	100	88	82	4	5	3.5
8. 69/M	37	115	105	87	83	5	7	4.0
9. 69/F	15	100	90	86	83	7	7	3.5
10. 67/F	23	115	100	87	81	6	7	4.0
11. 65/F	38	115	105	89	82	5	6	4.5
Average	31.9	113.6	103.6	88.0	83.5	5.6	6.3	4.0

*TKA: Total knee arthroplasty, [†]ROM: Range of motion, [‡]HSS: Hospital for special surgery

Hospital for Special Surgery (HSS) knee rating score 103.6°, , HSS knee rating score 83.5 ,
 , Student t-test Wilcoxon rank sum test 88.0 5.6° 6.3°
 가 , 가 ing score HSS knee rat-
 가 , , (p>0.05).
 , 4 , 110 ,
 , 320 ml . 1

1. 수술방법

45~50°
 ,
 ,
 1 가 1. 증례 1
 . 3 57
 , 10
 ,
 2 CPM (continuous passive mo-
 tion) , 1 2
 . 6
 ,
 knee rating score 0° 105° , HSS
 85 , 4
 (Fig. 1).
 결 과 2. 증례 2
 113.6° , 71



Fig. 1. Roentgenographic findings after supracondylar periprosthetic fracture

(A) Preoperative anteroposterior and lateral view

(B) Postoperative anteroposterior and lateral view

There was seen another fracture line on proximal part of femur postoperatively.

- 가 (: 2 , : 9) 11 2,11) .
- 가 1 contact stress) 7 Depuy LCS (low
가 2 e-motion 3 , Zimmer Aesculap
가 3 1 Nexgen
- LCP
- 가
- 가 30
- Culp⁵⁾ 가
- 가
- Zehntner Ganz²⁰⁾ 10 80%
, Ritter¹⁴⁾
- 결 론
- (Less invasive Stabilization system; LISS)
- 가
- 가²⁾
- 가
- 4 2,9,11-13)
- 30
- 가 14 mm
- 가
- 참 고 문 헌
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