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= Abstract =

Fractures of the Femur associated with the Hip Arthroplasty

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Periprosthetic fractures as a complication of hip arthroplasty are uncommon. However, the incidence has been increased recently especially in cementless or press-fit arthroplasties. The need to achieve a tight fit of the prosthesis in the bone when using cementless component has led to increased risk of periprosthetic fractures. We have experienced periprosthetic fractures occurred in 52 cases(51 patients) among 814 hip arthroplasties from January 1990 to December 1997. Among the 52 cases of periprosthetic fractures, 5 cases were occurred in cemented femoral stem(5 cases among the total 236 cases of cemented femoral stem : 2.1%), and 47 cases were occurred in the cementless type of femoral stem(47 cases among the total 578 cases of cementless type of femoral stem : 8.1%). There were 43 cases of intraoperative fracture and the rest was occurred postoperatively. According to the Johansson classification, type I fractures were 28 cases, type II fractures were 20 cases, and type III fractures were 4 cases. In postoperative periprosthetic fractures, according to the Vancouver classification, type A fracture was 1 case, type B1 fractures were 4 cases, type B2 fractures were 2 cases, and type C fractures

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162 (220-050)

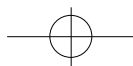
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were 2 cases. The accurate preoperative templating and prophylactic management of the risk factors are important for reducing the incidence of periprosthetic fractures.

Key Words : Femur, Hip arthroplasty, Periprosthetic fracture,

1990 1 1997 12

814 , 726

51 , 60

52 (6.4%)

22 , 29

2 6

가

가 , 5 , , 4

(rasping)

가

Johannson 9)

II

(tip)

III

가

10)

Vancouver 5)

AG

AL

B₁

B₂

B₃

C

가

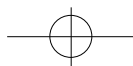
가

5)

Harris

Singh 4

-2.0



가 , 1 743 35 (4.7%)
 , 가 , 71 17 (23.9%)
 , 2mm 가
 18) . Johannson⁹⁾
 I 28 , II 20 , III 4
 (Table 1),
 Table 2
 Vancouver⁵⁾ B 가 6
 가 (Table 3),
 814 52 (6.4%) 5 Harris
 (236 Table 4 가 B1
 2.1%), 47 (Harris 91
 578 8.1%), (Table 4, Figure 1).
 (P=0.001).
 1 1 , 2 , 2 4.2 52 8
 , (15%)
 40 , 7 4 , 3 , 1 (Table 3,4).
 , 40 13 가 가
 1 385 36 (9.4%)

Table 1. Periprosthetic fractures according to the Johannson 's classification.

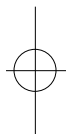
Type	Cemented(236)		Cementless(578)	
	Intraop.	Postop.	Intraop.	Postop.
I	2	1	23	2
II	1	1	15	3
III			2	2
Total	5	4	7	
Prevalence	2.1%		8.1%	P=0.001

Table 2. Therapeutic methods and clinical outcomes according to Johannson 's classification in intraoperative fractures.

Type	UT*	Therapeutic methods(cases)	Complication	HHS†
I	3.1	Cerclage wiring or band(17)	nonunion(2)	93
		Screw fixation(5)		92
		Cast(2)		91
		Restriction of weight bearing(1)		95
II	5.2	Cerclage wiring or band(8)	refracture(1)	94
		OR & IF with plating(5)	refracture(1)	88
		Cast(2)	nonunion(1)	85
		Restriction of weight bearing(1)		94
III	4	OR & IF with plating (2)		93

* mean union time(month)

† mean Harris Hip score.



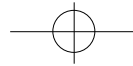


Table 3. Postoperative fractures according to Vancouver classification.

Type	AL*	AG †	B1	B2	B3C
Case	1		4	2	2

*fracture of lesser trochanter

† fracture of greater trochanter

Table 4. Therapeutic methods and clinical outcomes according to Vancouver classification in postoperative Fractures.

Type	UT*	Therapeutic method	complication	HHS †
A	2	Screw fixation (1)		94/93
B1	4	Cerclage wiring or band(2)		93/91
		Cast(1)	refracture(1)	90/80
		OR & IF with plating(1)		94/91
B2	5.5	Revision with the long stem(2)	nonunion(1)	90/85
C	10.5	OR & IF with plating(1)		95/93
		OR & IF with plating and cast(1)	infection(1)	93/75

*mean union time

† mean Harris Hip score(preop./postop.)

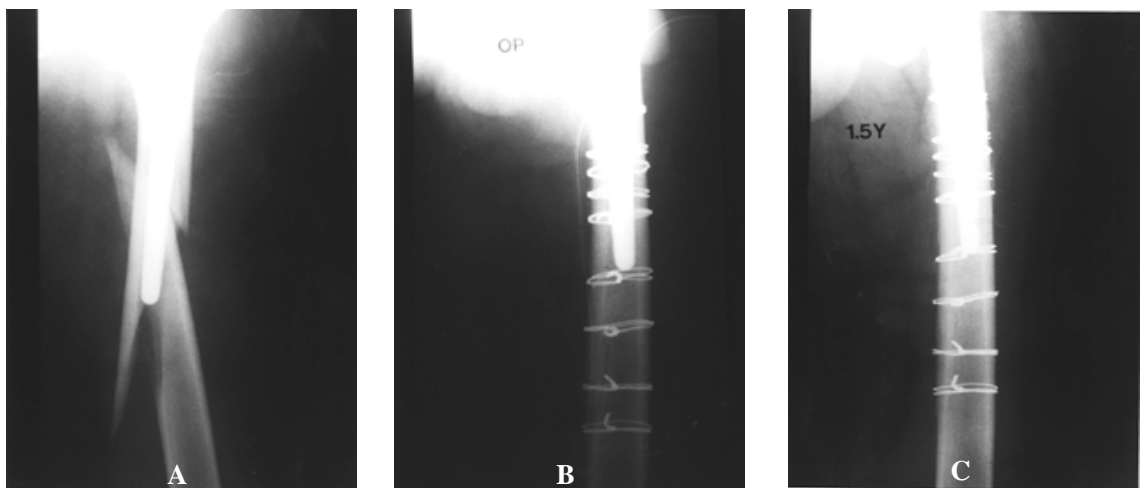
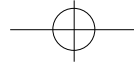


Fig 1-A. 57 years old man was fractured due to traffic accident at post-operative # 4 years.

1-B. Open reduction and cerclage wiring was done.

1-C. Harris hip score was 94 points after 1.5 years.

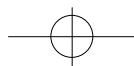


가 193
5 (2.1%)
(P=0.001)

52 13 (25%)
가 가 7 , 2%, 20%
가1 , 3,16)
가3 , 가 578
가2 385 36 (9.4%)
, 193
4 (2.1%)

(Johansson⁹⁾, Bethea⁴⁾, AAOS hip committee⁶⁾, Mont and Marr^{12,13)}, Duncan and Masri⁵⁾)

가
Johansson⁹⁾ . 1995 Duncan Masri⁵⁾
1964 Parrish Jones¹⁵⁾
Vancouver⁵⁾ ,
, A
B1
, B₂
B₃
, C
가⁵⁾
A
, B₁
, B₂
(rasp)
2mm
가
3,12,13,17)
4.9%,
6.5 %
52 13 (25%)



1. 가 , 가 .

2. , .

3. , .

1. 가 , 가 .

2. , .

3. , .

1. 가 , 가 .

2. , .

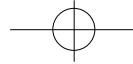
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