

13, 3, 2000 7

The Journal of the Korean Society of Fractures  
Vol.13, No.3, July, 2000

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:  
: 1993 1 1998 12  
1 가 36  
Harris hip scoring system, Matta  
grading system  
: Letournel 25 (69%), 11 (31%)  
17 (47%) 가 5 (11%) 가  
Kocher-Langenbeck 22, extended iliofemoral 8, ilioinguinal 3  
, triradiate transtrochanteric 3 2.2 (1-7) 1  
가 36 27 (75%), 26 (71%)  
20 7, 4  
:  
가  
:  
:

가  
가 가  
,  
가

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1,32) , 17 , 19

3. (Associated injury)

35 , 10 가

Judet 12) 가 1,4,19,20,22,32)

Matta 22) 가 3mm

4. (obturator foramen view), (iliac wing view)

Letournel<sup>12)</sup>

1 가 36 (elementary fracture) 25 (69%), (associated fracture) 11 (31%) (posterior wall fracture) 17 가 (both column fracture) 5 가 (Table 1).

17 (posterior dislocation)가 13 , (central dislocation)가 3 , (anterior dislocation)가 1

1993 1 1998 12

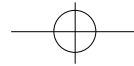
1 가 36

1. 20 68 38.4 36 가 30 (83%), 가 6 (17%) 가 20 50 가 29 (81%)

2. (Cause of injury) 가 32 (89%) 4 (11%)

**Table 1.** Classification of acetabular fractures(By Letournel)

Type of Fracture	No. of cases(%)
Elementary fracture	25(69%)
Posterior wall	17(47%)
Anterior column	4(11%)
Anterior wall	2( 5%)
Posterior column	1( 3%)
Transverse	1( 3%)
Associated fracture	11(31%)
Both column	5(14%)
Posterior column & wall	3( 8%)
T-shaped	1( 3%)
Transverse & posterior wall	1( 3%)
Anterior column & posterior hemitransverse	1( 3%)



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5. 가 17 (47%) , (iliac bone fracture)  
13 (76%) 가 .  
8 가 .  
4 1 .  
가 가 , 가 13  
7.4 ( : , 가 .  
: 30 ) .  
가 3mm 7.  
Matta <sup>21)</sup> 1  
 ,  
 ,  
가 2-4  
25,31) .  
3 .  
6. , ,  
Kocher- Langenbeck  
approach ,  
ilioinguinal approach . 26.2 ( 12 ,  
85 ) ,  
triradiate transtrochanteric Matta <sup>22)</sup>  
approach extended iliofemoral approach Harris<sup>8)</sup>  
 , hip scoring system (Table 2, 3).

**Table 2.** Roentgenographic grade(By Matta)

Criteria X-ray finding		No. of patients(%)
Excellent	Essentially normal roentgenogram	6(17%)
Good	Mild spur formation on femoral head or acetabulum	20(55%)
	Mild joint narrowing	
	Mild sclerosis	
Fair	Mild mottling of femoral head	5(14%)
	Moderate spur formation on femoral head or acetabulum	
	Moderate joint narrowing	
	Moderate sclerosis	
Poor	Any collapse of femoral head	5(14%)
	Any subchondral cyst	
	Moderate-severe mottling of femoral head	
	Moderate-severe subluxation of femoral head	
	Severe spur formation on femoral head or acetabulum	
	Severe sclerosis	

**Table 3.** Hip Scoring system(By Harris)

Score	Result	No. of patient
91-100	Excellent	10(28%)
81-90	Good	17(47%)
71-79	Fair	5(14%)
-70	Poor	4(11%)

**Table 4.** Distribution of HHS within each initial reduction state

Reduction state (Matta)	Harris Hip scoring system				Total
	Excellent	Good	Fair	Poor	
Anatomic	7	6	1	0	14
Satisfactory	3	10	2	0	15
Unsatisfactory	0	1	2	4	7
Total(No. of Pts)	10	17	5	4	36

**Table 5.** Distribution of HHS within each initial roentgenographic grade

Grade Harris (X-ray)	Hip scoring system				Total
	Excellent	Good	Fair	Poor	
Excellent	5	1	0	0	6
Good	4	13	3	0	20
Fair	1	3	1	0	5
Poor	0	0	1	4	5
Total	10	17	5	4	36

1                    가                    36                    Matta                    grading system                    가 26

Matta    22)                    가 1mm                    (72%)                    , 5    (14%)                    .

(anatomic reduction)    14    (39%)                    Harris hip scoring system                    27

,                    가 3mm                    (satisfactory                    (75%)                    4    (11%)

reduction)    15    (42%)                    , 3mm                    .                    4

(unsatisfactory reduction)    5                    (Table 4).                    2                    1

                  14    7                    , 6                    가                    1

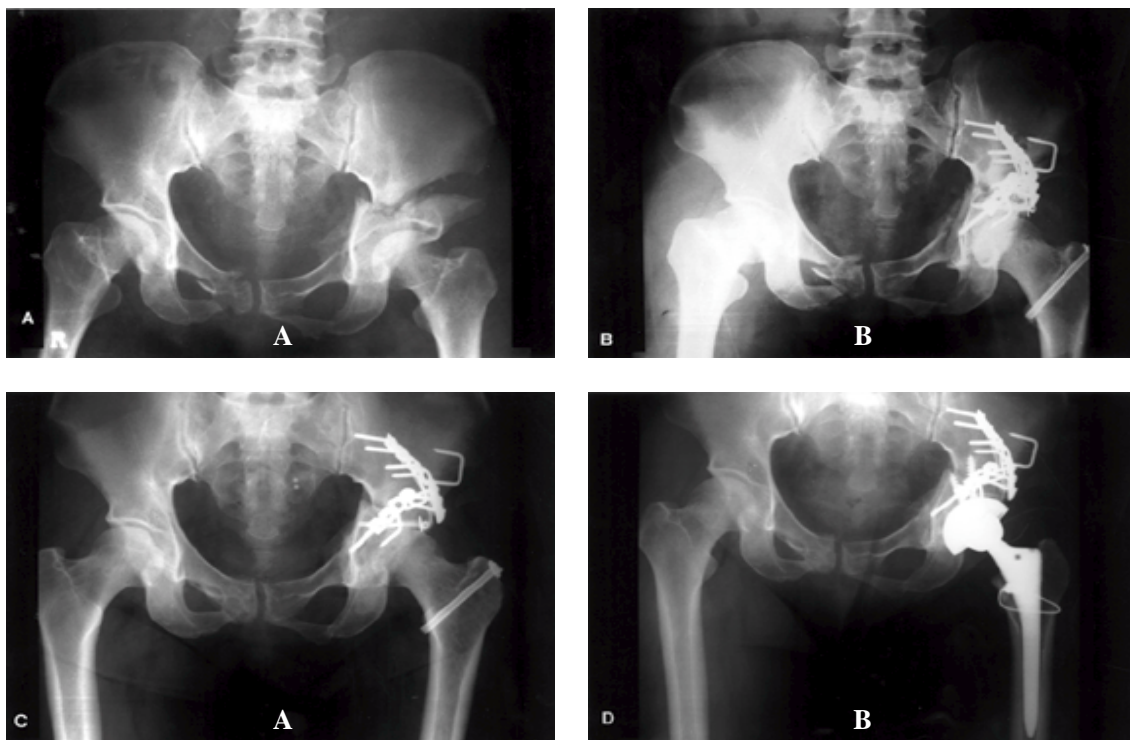
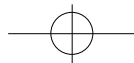
, 1                    15                    .

3                    , 10                    , 2                    가                    26

,                    7                    가                    23                    3

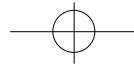
1                    가 3mm                    가                    가                    (Table 5).

                  가                    (Table 4).                    가                    36                    20

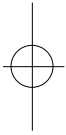


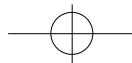
**Fig 1.** A 56-year-old woman with both column fracture of acetabulum was treated by open reduction and internal fixation using pelvic reconstruction plate, cannulated screw and staples. Radiologic evaluation revealed unsatisfactory reduction(A, B). After 12 months of follow-up, the patient shows limitation of motion and pain on ambulation. Radiologic evaluation revealed that cannulated screw and washer is contact with femoral head(C). Total hip arthroplasty was performed 13 month postoperatively(D).

7 , 4 ,  
가 2  
1  
1  
2  
가  
13  
(Fig. 1A-D). 2  
가  
Brooker 3) 4  
1  
가  
가  
가



. Pennel<sup>28,29)</sup>  
 가  
 14,22)  
 2,12,28,33) Letournel Judet<sup>12)</sup>  
 가가 . Letournel Ridder<sup>31)</sup>  
 Judet  
 (44%), (56%) 가 3mm  
 26.8% 가  
 (20.2%),  
 . Matta<sup>22)</sup> 105  
 44 (41.9%), T 19 (18.1%)  
 13) 가  
 ,  
 ,  
 12,15) Kocher-  
 Langenbeck approach, Judet and Letournel approach,  
 iliofemoral approach, Smith-Peterson  
 approach, extended iliofemoral  
 approach, triradiate extensile approach  
 Letournel Judet 36 25 (69%), 11  
 (31%), 17 가  
 5 Kocher-  
 가가 .  
 Langenbeck approach ,  
 ilioinguinal approach, extended  
 iliofemoral approach triradiate extensile approach  
 Matta 가  
 3 가  
 가  
 Pennel<sup>28)</sup> approach  
 가 가 3  
 가  
 11)  
 가 3 7.4 72% 30%  
 3 가  
 Matta<sup>21)</sup>  
 1 가  
 1  
 28)  
 1  
 1912 Vaughan<sup>34)</sup>  
 1943 Levine<sup>18)</sup>  
 Matta 가 1mm  
 22,23) , 3mm





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3mm 가

90%

14%

1 , 1

가 Harris hip 가2

scoring system 가2

Matta <sup>22)</sup> grading system

1 가 36

Harris hip scoring system 27

(75%) 4 (11%) 7 4 ,

(72%) 26 가 1

5 (14%) grade

18

9,16,24,27) 4 3

가 Mears <sup>26)</sup>

Harris hip scoring system

Matta grading

system

10,11,24,28,30,31) Letournel<sup>15)</sup>

가 8.6%, 5.6%

Mears <sup>26)</sup>

가 가

Letournel Judet<sup>17)</sup>

0.9% Ebraheim <sup>6)</sup>

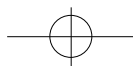
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- 45
- 12,15)
- Ridder <sup>31)</sup> 1 가
- Epstein<sup>7)</sup> 1 가



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### Abstract

## The Surgical Treatment of displaced Acetabular Fracture

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**Purpose** : To analysis clinical and radiological results of operative treatment of displaced acetabular fractures and establish the guideline for the operative treatment of displaced acetabular fracture with the analysis of the clinical and radiological results.

**Materials and Methods** : A clinical analysis was performed on 36 patients with displaced acetabular fractures who had been operated on and followed for minimum 1 year period from January 1993 to December 1998. Clinical outcome was analyzed clinically by Harris hip scoring system and radiologically by Matta 's roentgenographic grading system.

**Results** : According to Letournel 's classification, we had 25 elementary fractures(69%) and 12 associated fracture(31%). Among the elementary fractures, the posterior wall fracture was the most common type(17 cases, 47%) and both column fracture was the most common type among associated fractures(5 cases, 11%). Surgical approaches were 22 Kocher-Langenbeck, 8 extended iliofemoral, 3 triradiate transtrochanteric, 3 ilioinguinal. The mean duration of follow up after the operation was 2.2 years (range, 1 to 7 years). Among thirty six patients who had followed up more than one year, the satisfactory results were achieved in 27 cases (75%) on clinical grade and 26 cases (72%) on radiographic grade. The complications were developed in 20 cases out of 36 cases including posttraumatic arthritis 7 cases, heterotopic ossification 4 cases.

**Conclusion** : In the majority of the displaced acetabular fractures, accurate open reduction and internal fixation was recommended. It seems that the satisfactory operative reduction of the fracture is the factor that correlates with a satisfactory clinical result according to our study. Therefore in the surgical treatment of the acetabular fractures, it is essential to achieve an anatomical reduction and firm fixation by fully understanding the pathologic anatomy and by choosing an appropriate approach and fixation device.

**Key words** : Displaced acetabular fracture, Surgical treatment, Anatomical reduction

