

13, 4, 2000 10

The Journal of the Korean Society of Fractures
Vol.13, No.4, October, 2000

· · · · ·

< >

:

가 ..

: 1993 9

1999 12

1

가

47

20

27

Letounel

Ilioinguinal, Kocher-Langenbeck, Extensile iliofemoral

Matta

3가

Merle d'Aubigne Postel

: Matta

1

4, 2

13

가 1

7, 2

9

가 1

9, 2

5

Merle d'Aubigne

Postel

가

1

20

3 (15%)가

, 6

(30%)가

, 5

(25%)가

, 6

(30%)가

. 2

27

11 (41%)가

, 8

(30%)가

, 5

(18%)가

, 3

(11%)가

:

:

,

,

,

가

.7)

:

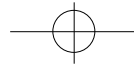
911-1

Tel : 82-2-650-5276

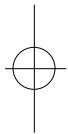
Fax : 82-2-642-0349

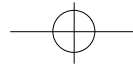
E-mail : prinskyk@hanmail.net





20 27 1, 2
 , 47 가 34 , 가
 , (6-11) 13 (2.2):(1) , 17
 76 39 10 -30 가 31
 가 36 가 ,
 가 11 . 35
 , 8
 15 가 .
 , 가 7 ,
 , . Matta가
 8,9)
 가
 4,6,9),
 . Matta
 (complexity) , 1
 38.5 , 6.7 ,
 6,7,9), Tile¹⁴⁾ 가
 2 39.9 ,
 6.1 .
 . de Ridder¹⁵⁾
 가
 ,
 ,
 , 3mm
 8,9).
 가 8,9)
 ,
 (obturator foramen view),
 (iliac wing view), CT
 , 7 3-dimensional CT
 ,
 1993 9
 1999 12
 5mm 60mm 18mm
 1 가가 47
 Letournel Judet 2) 47
 , 28 (59%) 가 , 19
 (41%) 가 (Table 1).
 14 가 가
 9 가
 . 11 가 ,
 7
 37
 1993 9 1999 12
 1 가가 가
 47



**Table 1-A.** Fracture Type by Letournel & Judet, 1981

	group I	group II
anterior wall	1	2
anterior column	1	1
posterior wall	6	8
posterior column	1	3
transverse	3	2
post. column-wall	4	5
transverse-post.wall	1	
T-shape	1	1
both column	3	4
total	20	27

Table 1-B. fracture type and clinical results, group I

	excellent	good	fair	poor
anterior wall				1
anterior column		-		1
posterior wall	2	3	1	
posterior column	1			
transverse			2	1
post. column-wall		3	1	
transverse-post.wall				
T-shape				1
both column			1	2
total	3	6	5	6

Table 1-C. fracture type and clinical results, group II

	excellent	good	fair	poor
anterior wall	1	1		
anterior column			1	
posterior wall	5	2	1	
posterior column	2	1		
transverse		1	1	
post. column-wall	3	1	1	
transverse-post.wall				1
T-shape			1	
both column			1	2
total	1	8	5	3

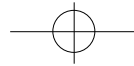
2.

가 3mm

9,11),

가

가 ,
Kocher-Langenbeck
(16 , 14) Ilioinguinal

**Table 2.** Approaches & Blood loss & Op. time

	group I	group II
Kocher-Langenbeck	16	15
Ilioinguinal	2	9
Extended Iliofemoral	1	1
Combined (KL & I)	1	2
Inappropriate approach	5	1
Blood loss (cc)	980	820
Op. time (hr)	3.1	2.6

combined 2, 9 2 가 .

combined 1, 3 2 ,

Kocher-Langenbeck , T- , ilioinguinal . Matta^{6,7,9)}

combined 1 1 , 1mm

Kocher-Langenbeck (anatomical) , 1-3mm

가 (satisfactory) , 3mm 가

가 가 5, 1 1 (Table 2). (unsatisfactory)

Extended Iliofemoral 가 .

Ilioinguinal 2

Kocher-Langenbeck 4.

3.5mm 4.5mm 6.5mm Matta^{8,9)} ,

Merle d'Aubigne Postel^{8,12)} 가

spring 가

plate , (1) , (2)

1 3.1 980cc , 2 가 , (3)

2.6 820cc , (4)

(Table 2).

4

(5) 가

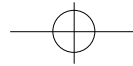
10 , (6)

3. (ROM)

가 6-2 , 6-1 , 6-1

(obturator foramen view),

(iliac wing view)

**Table 3.** Accuracy of Reduction & Clinical Results

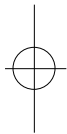
	excellent	good	fair	poor
Anatomical	9	4	3	1
Satisfactory	4	7	2	3
Unsatisfactory	1	2	4	7

Table 4. Accuracy of Reduction by Matta, 1996

	group I	group II
Anatomical	4 (20%)	13 (48%)
Satisfactory	7 (35%)	9 (33%)
Unsatisfactory	9 (45%)	5 (19%)

Table 5. Clinical results. by Merle d 'Aubigne & Postel, 1954

	group I	group II
Excellent	3 (15%)	11 (41%)
Good	6 (30%)	8 (30%)
Fair	5 (25%)	5 (18%)
Poor	6 (30%)	3 (11%)



1 , 가1 .

1. 3. Merle d 'Aubigne Postel
가 가 가 . 1 , ,
, 가 3 (15%). 6 (30%), 5 (25%), 6
Matta^{6,7,9} (anatomical) 1 (30%) . 2 11 (41%), 8 (30%), 5
4 (20%) 2 13 (48%) , (18%), 3 (11%) . 45%, 71%
(unsatisfactory) 1 7 (35%) 2 가 2
9 (33%) . 3mm 가 .
(unsatisfactory) 1 9 ,
(45%) 2 5 (19%) (anatomical)
55%, 81% 2 . 가 9 , 4 , 3 , 3
(unsatisfactory)
2. 가 1 , 2 , 4
, 7 (Table 3,4)
4 , 3-5 (Table 4,5).
, 10 3
, 2 , 1 ,



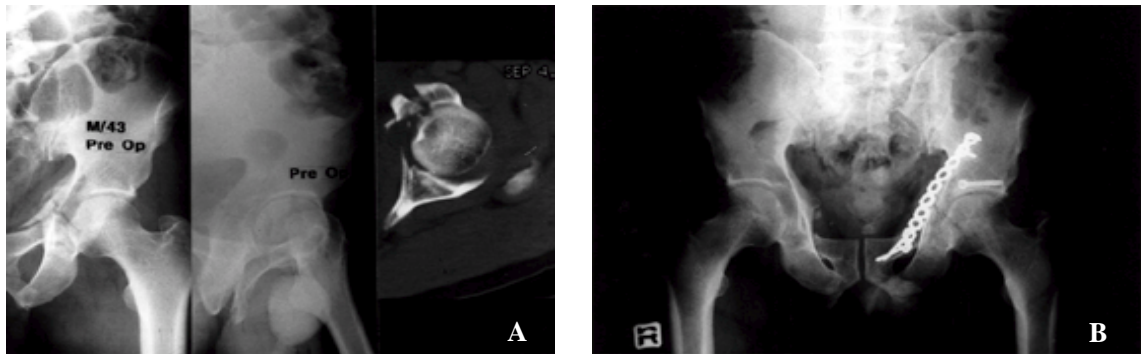
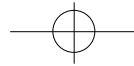


Fig 1. 43-year-old patient with transverse fracture of the acetabulum (A) Preoperative & (B) Postoperative radiograph

2,13)

1,2)

1.

1 43

Iliioinguinal

3 mm

, Letourne^{L5)}

. Ball &

Socket

2.

2 40

Kocher-Langenbeck

Iliioinguinal

1 mm

. Tile

가

가

가

3

2 19
Langenbeck

Kocher-

가

가

가

가

가

1 mm

가

13,16)

13,14)

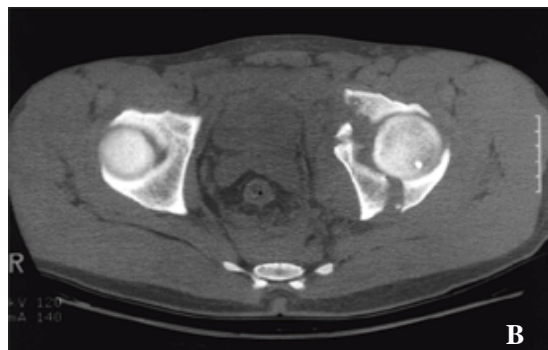
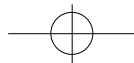
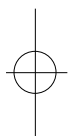


Fig 2. 40-year-old patient with both column fracture of the acetabulum (A),(B) Preoperative radiograph and CT, (C) Postoperative radiograph



(iliac wing), (obturator foramen) , 7 3 CT
 CT Letournel Judet ²⁾, Ilioinguinal 1
 가 , 가 가 2 2 ,
 , 가 9 가 2 가 1
 9). 가 1
 Westerborn, Stewart Milford, 2
 Rowe lowell, AO .
 Letournel Judet²⁾ 가 1 2 ,
 , 14 가 - 9 가 1 5 , 2 1
 7 9,10 , , - Mayo¹⁰⁾
 Matta Ilioinguinal , Matta ^{6,7,9)}
 3mm
 , , , - ,
 Kocher-Langenbeck
 . Letournel Judet . Pennal¹³⁾
 가 , , , - ,
 T- , ,

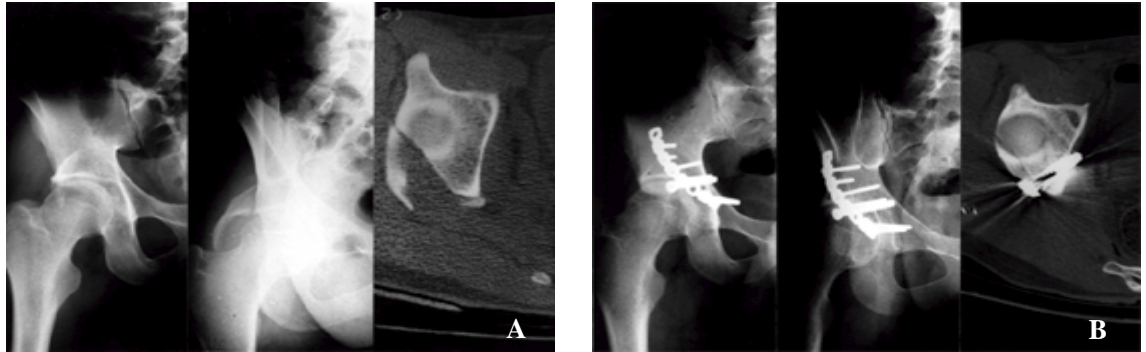
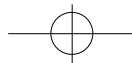


Fig 3. 19-year-old patient with posterior wall fracture of the acetabulum (A) Preoperative & (B) Postoperative radiograph and CT

[illegible]

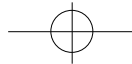


가

가

REFERENCES

- 1) **Goulet JA, Rouleau JP, Mason DJ and Goldstein SA** : Comminuted fracture of the posterior wall of the acetabulum. A biomechanical evaluation of fixation methods. *J Bone and Joint Surg*, 76-A: 1457-1463, 1994.
- 2) **Judet, R., Judet, J. and Letournel, E.** : Fractures of the Acetabulum ; classification and surgical approaches for open reduction *J. Bone and Joint Surg.*, 46-A : 1615-1646, 1964
- 3) **Kim YT, Lee SH, Hwang WY, Kim KY** : Surgical Treatment of Displaced Acetabular Fractures. *J. of Korean Orthop. Assoc.* 29(5):1428-1437, 1994.
- 4) **Kim WY, Sung JH, Park JH, Chung JW, Kim JY** : Open Reduction and Internal Fixation of Fractures of the Acetabulum. *J. of Korean Orthop. Assoc.* 31(1):110-118, 1996
- 5) **Letournel E** : Acetabulum fractures. *Clin Orthop*, 151 : 81-106, 1980.
- 6) **Matta JM, Anderson LM, Epstein HC and Hendricks P** : Fractures of the acetabulum. *Clin Orthop*, 205:230-240, 1986
- 7) **Matta JM, Menhne DK and Roffi R** : Fracture of acetabulum, *Clin Orthop*, 205:241-250, 1986
- 8) **Matta JM, Merrit PO** : Displaced acetabular fractures. *Clin Orthop* 230:83-97, 1988
- 9) **Matta JM** : Fractures of the Acetabulum: Accuracy of Reduction and Clinical Results in Patients Managed Operatively within three weeks after the Injury. *J Bone Joint Surg*, 78-A : 1632-1645, 1996
- 10) **Mayo KA** : Open reduction and internal fixation of fractures of the acetabulum: Results in 163 Fractures. *Clin Orthop*, 305:31-37, 1994
- 11) **Mayo KA** : Fractures of the Acetabulum. *Orthop Clin North Am*, 18:43-57, 1987.
- 12) **Merle D 'Aubigne R, Cauchoix J, Ramadier JV:** **Evaluation:** chifree de la fonction de la hanche. Application a l 'etude des resultats des operations mobilisatries de la hanche. *Rev Orthop* 35:541-548, 1949.
- 13) **Pennal GF, Davidson J, Garside H and Plewes J** : Results of treatment of acetabular fractures. *Clin Orthop*, 151:115-122, 1980
- 14) **Tile, M.** : Fractures of the pelvis and Acetabulum, 2nd ED. pp. 259-304, Philadelphia, *Williams & Wilkins.*, 1995.
- 15) **V.A. de Ridder, S. de Lange, L. Kingma, M. Hogervorst** : Results of 75 Consecutive Patients With An Acetabular Fracture. *Clin Orthop* 305 : 53-57, 1994
- 16) **Yoon YS, Park BM, Han DY** : A Clinical Study on the Acetabular Fracture. *J. of Koren Orthop. Assoc.* 17(2):333-344, 1982



Abstract

Operative Treatment of Acetabular Fractures

Jong-Oh Kim M.D., Yo-Hun Yun M.D., Dong-Wook Kim M.D.
Young-Do Koh M.D. Jae-Doo Yoo M.D. Hyoung-Jin Jeong M.D.,
Yi-Kyoung Shin M.D.

Department of Orthopedic Surgery, Ewha Women 's University, Seoul, Korea

Purpose : We reviewed 47 cases of acetabular fractures which was treated operatively, to review the clinical results of operative treatment of acetabular fractures considering the experience of a surgeon, to assess the relationship between the quality of the operative reduction and the clinical results.

Materials and Methods : We reviewed 47 cases of acetabular fractures which was treated operatively from September 1993 to December 1999 and follow up more than 1 year. And we analyzed retrospectively the data in the aspect of the relationships between the radiologic evaluation of the reduction and the clinical results, and we reviewed the initial 20 cases as a group I and the later 27 cases as a group II to compare the differences of clinical results of the two groups.

Results : In the accuracy of reduction, anatomical reductions were 4 hips in the group I and 13 in the group II, satisfactory 7 hips in the group I and 9 hips in the group II, unsatisfactory 9 hips in the group I and 5 hips in the group II. We assess the over-all clinical result with the criteria of Merle d 'Aubigne and Postel. In the group I, 20 hips, the clinical result was excellent for 3 hips(15%), good for 6 hips(30%), fair for 5 hips(25%), and poor for 6(30%) hips. In the group II, 27 hips, the clinical result was excellent for 11 hips(41%), good for 8 hips(30%), fair for 5 hips(18%), and poor for 3(11%).

Conclusion : The accuracy of reduction was closely related to the clinical results. And the more a surgeon getting experienced, the better accurate reduction and clinical results were possible.

Key Words : Acetabular fracture, Operative treatment, Accuracy of reduction, Experience of a Surgeon

Address reprint requests to _____

Jong-Oh Kim

Department of Orthopaedic Surgery, Ewha Womans University

Mokdong Hospital 911-1, Mok-Dong, Yangcheon-Ku, Seoul 158-710, Korea

Te l: 82-2-650-5276

Fax : 82-2-642-0349

E-mail: prinsyk@hanmail.net