
1994 6	2001 6	1
가 49	가	
30 mm(8~87 mm)	6 mm(0~24 mm)	
16 mm(0~56 mm)	4 mm (0~30 mm)	
17.7 mm(0~60 mm)	3.4 mm(0~30 mm)	3
3	가	1, 4, 2
가	1, 2, 1	가
5	2, 4	가
1994 6	2001 6	1
가 49	가	
30 mm(8~87 mm)	6 mm(0~24 mm)	
16 mm(0~56 mm)	4 mm (0~30 mm)	
17.7 mm(0~60 mm)	3.4 mm(0~30 mm)	3
3	가	1, 4, 2
가	1, 2, 1	가
5	2, 4	가

1994 6	2001 6	1	가
8~20%	49	18	
42%	75	40.1	가 28, 가 21
15)	12	89	
24	가 41		
6,10-14,17,18)	가 6	2	18
	9	6	6
	5	3	3
가	2		
1,2,5,7,22)	Tile ²¹⁾		
	B1 17, B2 11, B3 4		
	C1 16, C2		
	1 Young ²⁶⁾		
	21	15	
	12	1	

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가 14 , 가 13 , mm) , 16±
11 , 9 12.7 mm(0~56 mm) 4±4.8
2 . mm(0~30 mm)
(inlet view), (outlet view), 17.7 mm(0~60 mm) 3.4 mm(0~30 mm)
, 2.5 cm (inlet) 48
(Locked 1 30 mm
symphysis)가 , 가 C1 가
1 cm 가
가 가 가 15
, 가
26
Pfannelstiel 19 , ilioinguinal 13 20
, 28 , 3 3
, 가 4 30
19 , 14 , 5 , 가 16 가
21 , 7 3 가
48
(inlet view) 1
(outlet view) 가
10-14,16,17) , (excellent)가 30 ,
(good)가 16 , (poor) 3
10-12,14) , 1 , 4
, 2 , 1 ,
2 ,
Harris³⁾ 가 , 1 , 2 ,
, 가 , 3 , 5 2 , 1
, Harris³⁾ 2 3
(20 , 60) 3
4 3
, 1
5 2
(excellent), 1 cm
(good), 1 cm
(poor) 11,12,14)
8)
1,4,14,17,22)
30±
17.8 mm(8~87 mm) 6±5.1 mm(0~24 , B1 1 , B2 1 , C1 2

가

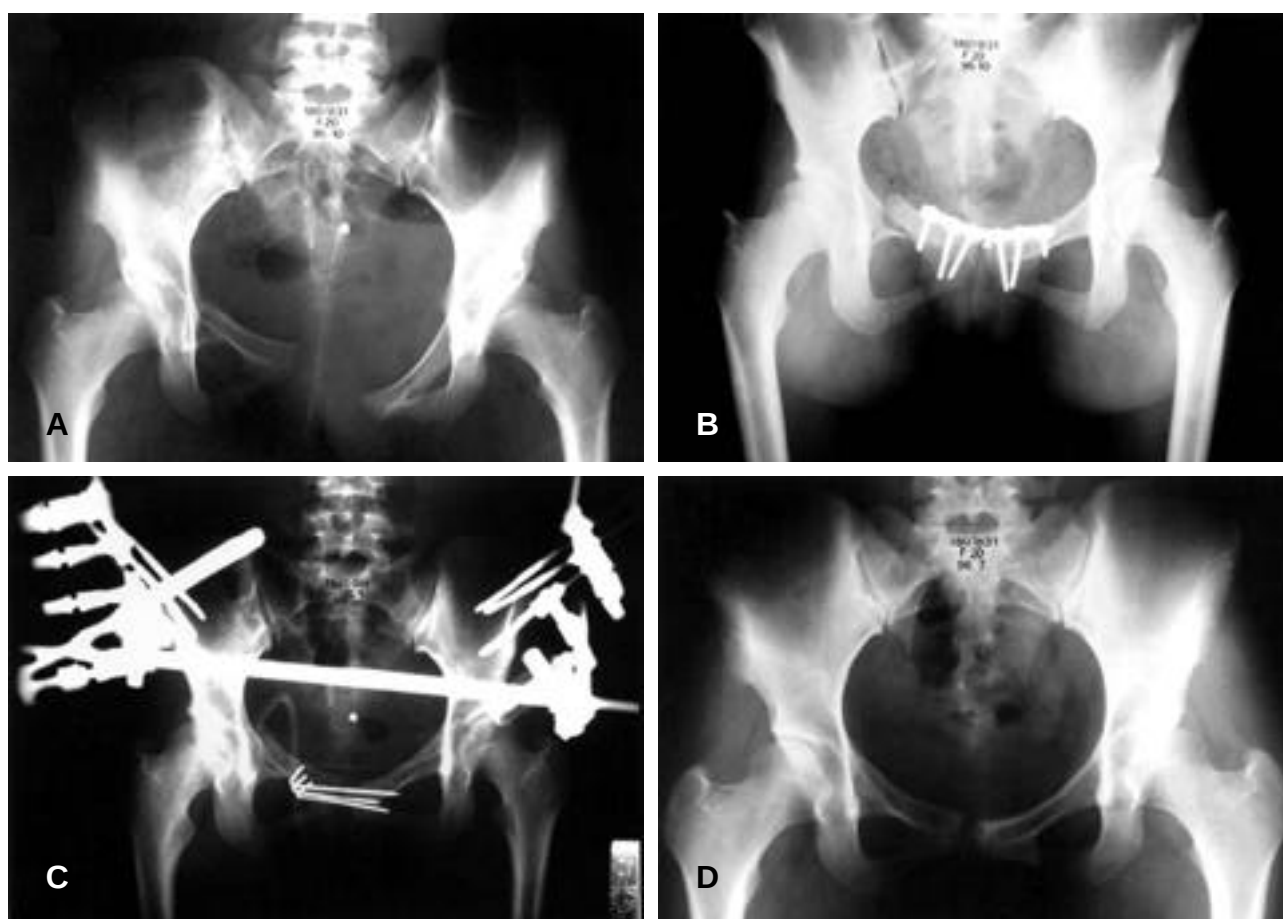
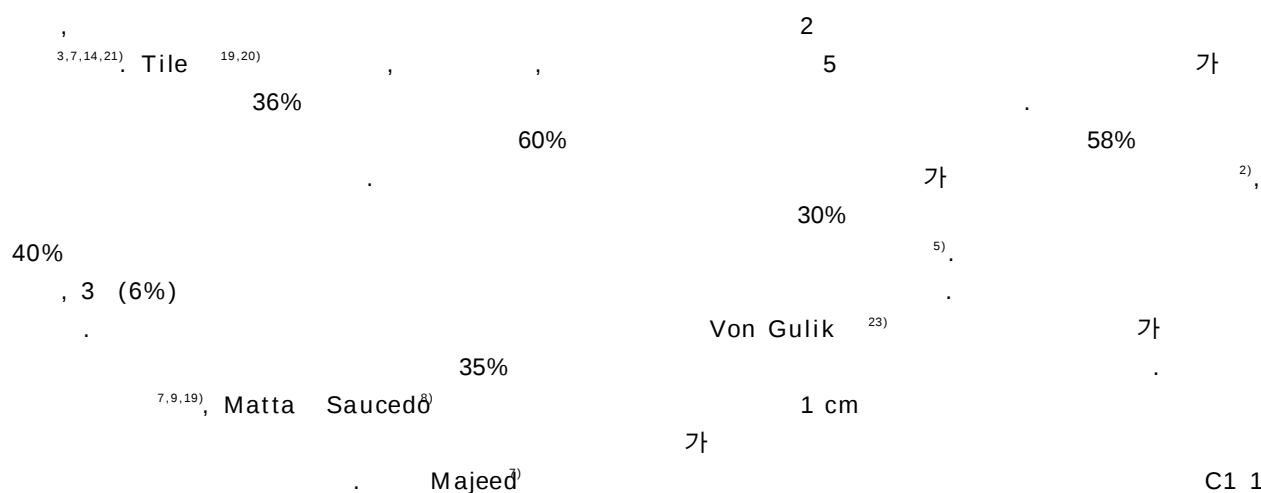


Fig. 1. Radiographs and photograph of a 26 year old woman. (A) Her pelvic injuries include a wide fracture and separation of the symphysis pubis. (B) A satisfactory reduction is achieved by open reduction and internal fixation of the symphyseal separation. (C) Internal fixator is removed and external fixator with K-wire fixation was applied because of deep infection on operative site. (D) Internal fixator was removed and external fixator with K-wire fixation was applied. (E) Follow up radiograph shows healed symphyseal separation.

가 14 C1 15 cm
 2 1 cm
 Matta Tornetta⁸⁾ 2.8%
 8)
 가
 가 가
 Pfannenstiel
 1
 K-
 (Fig. 1).
 가
 가
 5
 5
 6,8)
 가
 Matta⁸⁾ 50%
 12)
 가
 Kellam⁴⁾
 25%
 1
 3
 C
 가

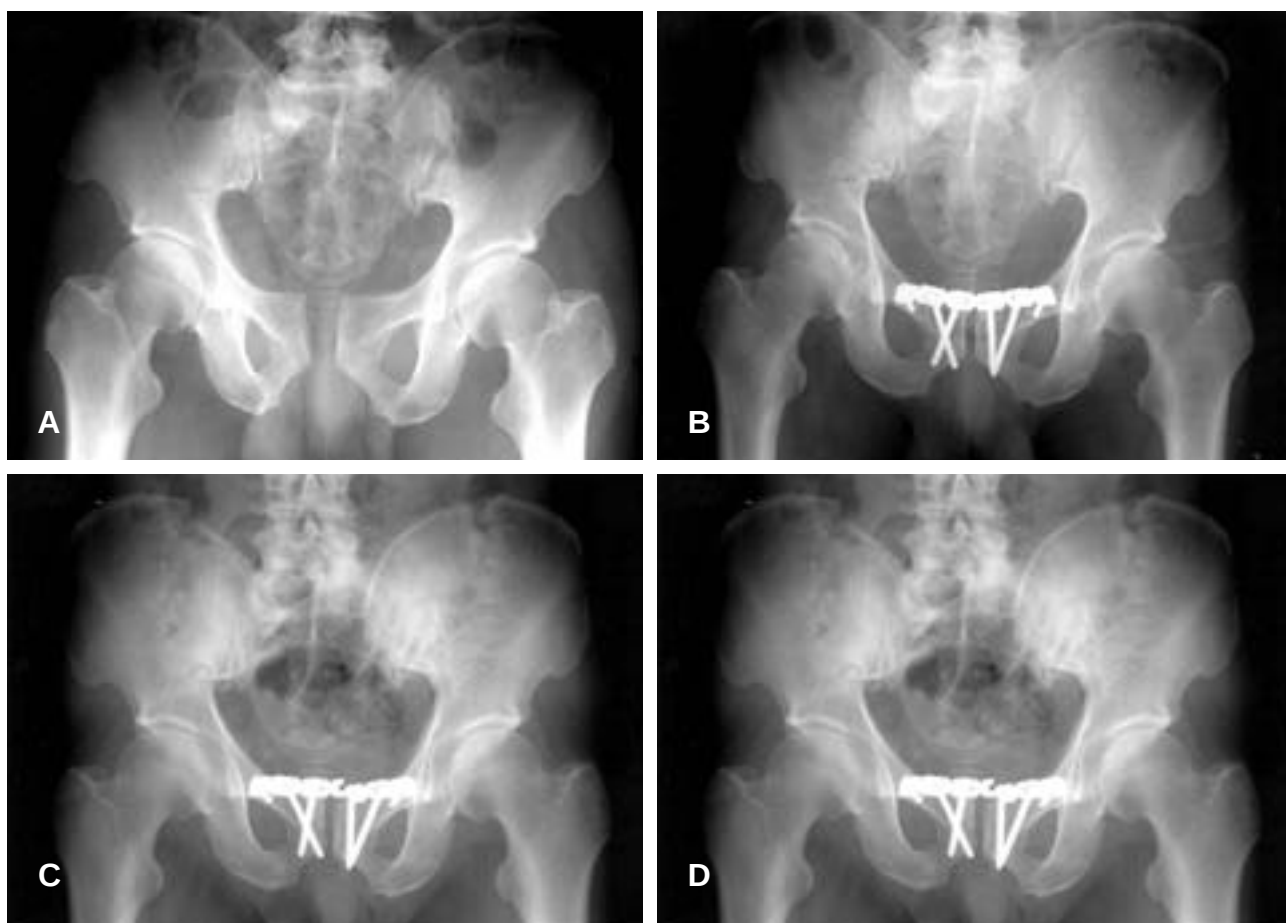


Fig. 2. Radiographs of a 51-year-old-man. (A) His pelvic injuries include a wide symphyseal separation. (B) A satisfactory reduction is achieved by open reduction and internal fixation of the symphyseal separation. (C) 1 year follow-up radiographic reveals fatigue fracture of the plate. (D) Follow up radiograph shows healed symphyseal separation after removal of the plate.

9)

가

가 2 가
(tension band wire)
Varga ²⁴⁾

가

가

가

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Table 1. Complications of operative treated in unstable pelvis bone fractures

Age	Sex	Tile class	Anterior complication	Posterior complication	Results
40	Male	B3	Screw loosening		No problem
58	Female	C1	Malunion	Malunion	Symptomatic
33	Female	C1		L5 nerve root irritation	Recovered
20	Female	B1	Postop infection		Revision with external fixation
62	Female	B1	Fatigue fracture of plate		No problem
40	Male	B2	Malunion		Symptomatic
68	Female	B2	Fixation failure	Fixation failure	No revision
22	Female	C1		Fatigue fracture of plate	No problem
32	Female	C1		L5 nerve root irritation	Recovered
63	Female	C1	Fixation failure		Revision with refixation
42	Female	C1		Fatigue fracture of plate	No problem
44	Female	C1		Postop. infection	Symptomatic
60	Male	C1		Malunion	Symptomatic
59	Male	B1	Fixation failure		Revision with refixation
52	Male	B1	Screw loosening		No problem
31	Male	C1		Fatigue fracture of plate	No problem
25	Female	C1	Malunion		Symptomatic
20	Female	B2	Fixation failure		Refixation

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Complication of the Operative Treatment in Unstable Pelvic Bone Fractures

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Purpose: This study analyzed the postoperative complications in a series of unstable pelvic bone fractures treated surgically.

Material and Methods: 49 cases treated by operative treatment in unstable pelvic fractures from June 1994, to June 2001 were retrospectively reviewed. The radiological results were evaluated according to the residual displacement and leg length discrepancy. The clinical results were evaluated according to the level of pain and functional disabilities, and the postoperative complications were analyzed.

Results: The average of anterior pelvic ring displacement improved from a mean preoperative value of 30 mm(8~87 mm), to a mean postoperative value of 6 mm(0~24 mm), that of the posterior pelvic ring displacement improved from 16 mm(0~56 mm), to 4 mm(0~30 mm). The average leg length discrepancy of 17.7 mm(0~60 mm) preoperatively, decreased to 3.4 mm(0~30 mm) postoperatively. Three cases had moderate pain and 3 cases had a moderate limping. Postoperative complications of the anterior pelvis included infection(1 case), malunion(2 cases), and fixation failure(4 cases). The postoperative complications of the posterior pelvis included infection(1 case), malunion (2 cases), and fixation failure(1 case). Fatigue fracture of the plate(4 cases) and the 5th lumbar nerve injuries(2 cases) did not affect the final outcome.

Conclusions: It is recommend that the precise surgical technique and appropriate approach are essential. In addition, an anatomical reduction should be made in unstable pelvic bone fractures in order to minimize the postoperative complications associated with the surgical treatment.

Key Words: Pelvic fracture, Operative treatment, Complication