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= Abstract =

Fixation of Complex Acetabular Fractures Using Cerclage Cable Grip System(DALL-MILES)

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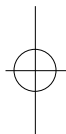
From 1996, in the 13 fractures of the acetabulum surgically treated in Kyung Pook National Hospital and Sae-Myung Orthopedics, cerclage grip system(DALL-MILES) have been used as reduction and fixation tool. Cerclage cable inserted through the greater sciatic notch to a point just cephalad to the anterior inferior spine was greatly helpful for both reduction and internal fixation of thirteen complex acetabular fractures. This technique is especially useful when the fracture line extend into the greater sciatic notch. This is true of high posterior column fractures that extend up into the upper part of the notch, transverse fractures that have an anterior or posterior limb that is high, and both column fractures through ilioinguinal approach with T-extension. Reduction was achieved to within 3mm in 11 cases and 6mm in 2 cases. This

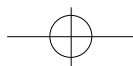
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reduction was maintained until union. The technique may contribute to fracture stabilization, but supplementary fixation was added in 12 patients with curved reconstruction plate over pelvic brim and posterior column in 1 patient.

Key Words : Acetabular fracture, Internal fixation, Cerclage cable

Table 5. Cerclage cable grip system(DALL-MILES).

[illegible]



1	indomethacin
1968	AAOS
(Table 3)	(ASIS)
Goodwin	notch)
	(Table 4)
	(greater sciatic ilioinguinal with T-extension

Table 1. Case analysis.

Cases	Sex	Age	Fracture Type	Approach	Initial gap(mm)	Postop. gap(mm)	Result (Goodwin)
1	F	67	Both column	ilioinguinal with T-extension	7	1	E
2	M	67	Ant. wall + post. hemitransverse Fx.	ilioinguinal with T-extension	8	3	G
3	M	50	Both column	ilioinguinal with T-extension	20	3	F
4	F	54	Ant. column + post. wall	K-L + ilioinguinal	5	2	G
5	M	48	Both column	ilioinguinal with T-extension	10	6	F
6	M	43	Both column	ilioinguinal with T-extension	4	3	G
7	M	46	Ant. wall + post. hemitransverse Fx.	ilioinguinal with T-extension	6	2	G
8	M	55	Ant. column + post. wall	ilioinguinal with T-extension	8	1	E
9	M	50	Both column	ilioinguinal with T-extension	11	1	G
10	M	39	Both column	ilioinguinal with T-extension	18	6	F
11	F	68	Ant. wall + post. hemitransverse Fx.	ilioinguinal with T-extension	9	1	E
12	M	52	Both column	ilioinguinal with T-extension	5	3	G
13	M	44	Both column	ilioinguinal with T-extension	6	2	G

Table 2. Classification of Acetabular Fracture (by Letournel).

Type of Fracture	No. of cases
Elementary fracture	
Posterior wall	
Posterior column	
Anterior wall	
Anterior column	
Transverse	
Associated fracture	
T-shape	
Transverse and posteriopr wall	2
Both column	8
Transverse and anterior column	3
Posterior column and posterior wall	
Total	13

Table 3. Criteria for Evaluating Results.

System of assessment suggested by American Academy of orthopedic surgeons (Goodwin,1968)
Excellent : Patients are free of pain, can walk as far as they with without assistant and have at least 75% range of motion
Good : Patients have only minimal pain andambulate independently with one or two cases. The range of motion is over 50%
Fair : Patients have moderate pain on weight bearing and can walk only short distance with assistance. The range of motion is less than 50%
Poor : Patient are confined to wheelchair with only minimal weight bearing

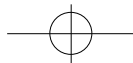


Table 4. Ilioinguinal approach with T-extension.



1.

67

5

, CT 3-D CT

4 ilioinguinal with T-extension
cerclage cable reconstruction plate
(good)

(Fig. 1).

2.

54

2

cerclage cable

corkscrew

grip system(DALL-
satinsky
grip

MILES)(Table 5)

(reconstruction plate)

cable

가

1).

Goodwin (Table 3)

3 , 7 , 3 ,
11 가 3mm

cable

2

가

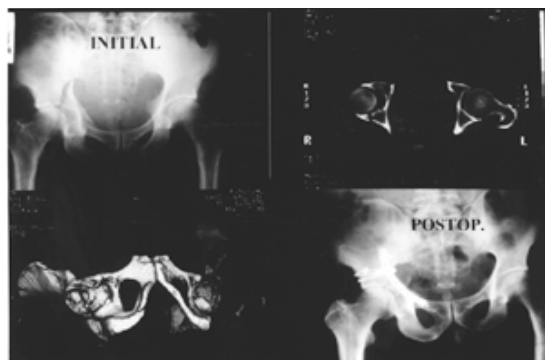
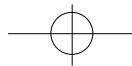


Fig 1. Example of an associated both-column fracture of the right acetabulum approached through an ilioinguinal with T-extension exposure. **Left top.** Initial anterior-posterior plain radiograph showing a right anterior wall plus associated posterior hemitransverse fracture. **Right top.** Preoperative C-T scan of right shows displacement of anterior fragment and relative incongruity. **Left bottom.** 3D C-T scan shows incongruity of hip joint. **Right bottom.** Postoperative anterior-posterior plain film shows the position of cerclage cable from above the AIIS through the greater sciatic notch, and anatomical reduction.



7

3,4,7)

anterior ilioinguinal approach

(good)

(Fig. 2).

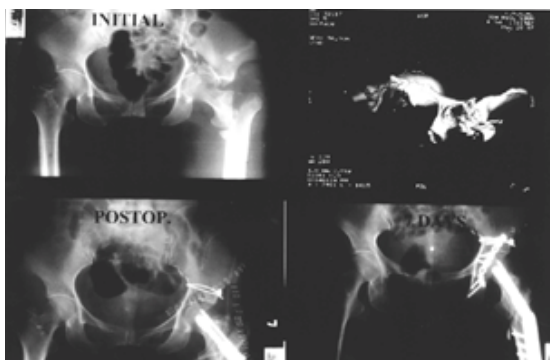


Fig 2. **Left top.** A 54 years female, had an anterior column plus associated posterior wall fracture with central dislocation of left hip and left femur intertrochanteric fracture. **Right top.** Preoperative 3D C-T scan shows displaced anterior column and posterior comminuted fragments. **Left bottom.** Cerclage cable was fixation through ilioinguinal with T-extension and open reduction internal fixation was done for intertrochanteric fracture. **Right bottom.** After 7days of first operation, open reduction and internal fixation of posterior wall fragment was done through Kocher-Langenbeck approach.

(Table 4)⁸⁾ ilioinguinal with T-extension

가

12

, 1

가

(acetabular dome)

cerclage wire cable grip
system(DALL-MILES) multifilament Vitallium
alloy

(iliopectic)

가

ilioinguinal with T-extension
cable

(level)

⁶⁾ Schopfer ⁶⁾

10mm

가

Schopfer ⁶⁾ cerclage wiring 1)

cable system 가
¹⁾ extended femoral

, Schopfer ⁶⁾ ilioinguinal

extensile exposure

ilioinguinal with T-extension

1

cable

가

. Matta ⁵⁾

가

가 ⁹⁾

dome 3mm



766 • / 12 4

(congruity)

cable system

11

3mm

37+

37+

가

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