

RESULTS OF OPERATIVE MANAGEMENT OF FRACTURE ACETABULUM



Medical Science

KEYWORDS:

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INTRODUCTION

- * Acetabulum and pelvic fracture constitute only 2% of all fracture but they are associated with significant morbidity and mortality because of associated injury
- * Acetabulum fracture is a life altering injury
- * Commonly occurs in young, active and productive members of the society
- * Incidence increases with increase in high velocity vehicles
- * Major challenge for orthopaedic surgeon to reduce and fix it because of
 1. complicated anatomy
 2. associated life threatening injury
 3. severe comminution
 4. intra op and post op complications

Increasing incidence in elderly pt. because of increase in life span of person

AIM OF THE STUDY

- * Analyse types of fracture
- * Compare Results of operative technique and quality of reduction (Anatomical reduction <2mm displacement of articular surface)
- * access Early and late complications related to technique and implant
- * Access Post-operative range of motion
- * Access the time of surgery
- * Access functional outcome by Harris hip score and Merle D'Aubigne score.

MATERIALS AND METHODS

- * We undertook study of 20 patients operated in our institute during period of 3 years from 2013 to 2015 operated by different experienced surgeons Inclusion_criteria All cases of displaced fracture acetabulum Age group 20 to 60 years Isolated acetabulum fracture without pelvic bone fracture Acetabulum fracture with fragment incarceration within the joint Exclusion_criteria
 - * Associated pelvic injury
 - * Medically ill and unfit patients
 - * Age less than 20 years and more than 60 years
 - * Open fractures
 - * Non displaced and conservatively managed patients
 - * Duration of >3 weeks
 - * Pt with unhealthy skin condition over incision site
 - * Both column fracture with comminution and secondary congruence managed conservatively

PRE-OP PLANNING:

- * Vitaly stabilize, wait for 3 to 7 days
- * Planning of surgery and approach with use of X rays and CT scan
- * Pre bending of plate (3.5mm reconstruction plate, Y plate) with the use of pelvis model
- * Keep ready cross-matched blood

- * Shaving, scrub wash and pre op antibiotic and tranexamic acid given

INTRA-OP PLANNING:

- * On table beta scrub wash, antibiotic and tranexamic acid given
- * Sterile model of pelvic bone kept ready
- * Fracture site opened with chosen approach (preferred approach
 - A Iliioinguinal and
 - B kocher langenbeck)
- * Provisional fixation by – K wires
- * Definitive fixation by
 1. 3.5mm reconstruction plate
 2. Y-plate
 3. cancellous screw with washer

Reduction and implants checked under ITV

POST-OP PLANNING:

- * Broad spectrum i.v. Antibiotics >>>> 3 days
- * Epidural opioid or i.v. Tramadol for pain relief
- * Hemoglobin level maintained >9-10 gm% by blood transfusion
- * Tab. Indomethacin 25mg TDS started post operatively >>>> 6 weeks
- * Mobilisation depend on fracture fixation good fixation >>> mobilise as soon as pain allows Lower limb stockings for DVT prophylaxis

PHYSIOTHERAPY PROTOCOL:

- * Simple posterior wall and uncomplicated # >>> mobilise early
- * Complicated # >>> traction till pain subside (2-3 weeks) than mobilised gradually

PHYSIOTHERAPY PROTOCOL:

day 1 – static quadriceps ex.
ankle mobilisation
day 2-7 – knee bending,
limited range of motion ex
dynamic quadriceps exercise
day 7 onward – toe touch weight bearing with
walker
hip flexion-abduction
extension ex

POST-OPERATIVE PLANNING :

- * stitch removal >>> 14-15 days
- * follow up with X rays >>> every month till union seen
- * Full weight bearing >>> only after radiological union seen (12-14 weeks)

OBSERVATION AND RESULTS

age	No. Of patients
20-29	02
30-39	07
40-49	08
50-59	03

TABLE 1: AGE DISTRIBUTION

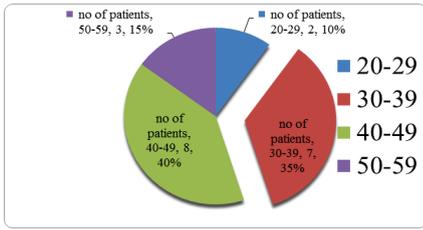


TABLE 2: MODE OF INJURY

Mode of injury	No. Of patients
Fall from height	02
Road traffic accident	18

TABLE 3: FRACTURE INCIDENCE

Fracture type	No. Of patients
ELEMENTARY FRACTURES	
Posterior wall	5 (25%)
Posterior column	0
Anterior wall	0
Anterior column	1 (5%)
Transverse	4 (20%)
ASSOCIATED FRACTURE	
T-shaped	2 (10%)
Posterior wall + posterior column	0
Transverse + posterior wall	3 (15%)
Anterior and posterior hemi transverse	1 (5%)
Both column	4 (20%)

TABLE 4: OPERATIVE APPROCHES FOR EACH # TYPE

Fracture type	Kocher-langenbeck approach	Ilioinguinal approach
ELEMENTARY FRACTURE (35%) (15%)		
Posterior wall	5	0
Posterior column	0	0
Anterior wall	0	0
Anterior column	0	1
Transverse	2	2
ASSOCIATED FRACTURE (25%) (25%)		
T-shaped	1	1
Posterior Wall-Posterior Column	0	0
Transverse-Posterior wall	3	0
Anterior wall with Posterior hemi transverse	0	1
Both column	1	3

TABLE 5: OPERATIVE OUTCOME OF OUR STUDY BY MERLE_DAUBIGNE_SCALE

No. Of patients	Score	Result
08	18	Excellent
10	15-17	Good
1	13-14	Fair
1	<13	poor

TABLE 6: OPERATIVE OUTCOME OF OUR STUDY BY HARRIS_HIP_SCORE

No. of patients	Score	Result
15	90 to 100	Excellent
03	80 to 90	Good
01	70 to 80	Reasonable
01	<70	Poor

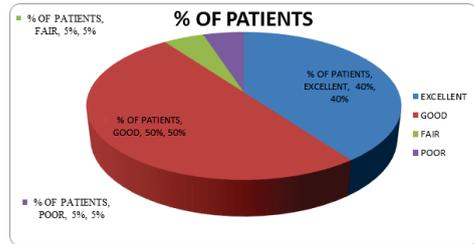
TABLE 10: DISTRIBUTION OF CLINICAL RESULTS ACCORDING TO FRACTURE TYPE

Fracture type	Excellent	Good	Fair	Poor
ELEMENTARY FRACTURE				
Posterior wall	2	2		1
Posterior column				
Anterior wall				
Anterior column	1			
Transverse	1	2		
ASSOCIATED FRACTURE				
T-shaped	1	1		
Posterior Wall-Posterior Column				
Transverse-Posterior wall	1	2		1
Anterior wall with Posterior hemi transverse		1		
Both Column	2	2		

TABLE 11: COMPLICATIONS

Complication	No. of Patients
Nerve palsy	1
Infection	1
AVN	0
Heterotopic ossification	1
Bed sore	0

FINAL_OUTCOMES



SUMMARY AND CONCLUSION

- # The most common cause injury is road traffic accidents and occur in young and active men.
- # The most common type fracture pattern is posterior wall and then transverse with posterior wall.
- # The best time for surgery is within 10 days. Kocher Langenbeck approach gives good result for posterior wall involvement
- # Ilioinguinal approach is excellent for anterior column and anterior wall – posterior hemi transverse fracture.
- # The quality of reduction is strongly associated with clinical result.
- # The use of prebent reconstruction plates helps in anatomical reduction of fracture
- # Poor outcomes related to posterior wall fracture
- # Complication of Nerve palsy seen only in 1 patient which also partially recovered

18 month followup



2 years follow up

