

## THE ASSESSMENT OF FUNCTIONAL OUTCOME OF CONSERVATIVE MANAGEMENT OF ACETABULAR FRACTURES AT TERTIARY CARE HOSPITAL

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### ABSTRACT

**Background:** Acetabular fractures are the consequence of high-speed injury including 18% of all pelvic fractures. Anatomical and compatible decrease of the acetabular break is the best quality level in the administration of the acetabular cracks. In the distributed writing both moderate and employable administrations have been examined having points of interest and hindrances of both the modalities of treatment. **Material & Methods:** The present retrospective study was conducted at the Department of orthopedics at our tertiary care hospital. The study group of 50 patients, consisted of mainly patients from different parts of Rajasthan and also some from the states like Gujarat and Madhya Pradesh. **Results:** The study included 50 patients with the average age of 42.7 years with 32 patients (64 %) male and 18 patients (36%) female patients with the average BMI 26.1 kg/m<sup>2</sup>. The mechanism of injury was commonly RTA in 37 (74%) of patients and 13 (26%) fell from a height. Based on the X-rays and CT scan patients had fractures involving 16 (32%) posterior wall 4 (8%) posterior column, 5 (10%) anterior column, 4 (8 %) transverse, 2 (4%) posterior column with posterior wall, 5 (10%) transverse with posterior wall, 4 (8 %) T-shaped, 1 (2%) anterior column with posterior Hemi-transverse, and 9 (18%) involved bi-columnar fractures. The average duration of skeletal traction was 5.8 weeks and the average follow up was 5.7 years with the minimum follow up of 3 years and a maximum of 8 years. Functional outcome score showed good to excellent results in 82%, fair to satisfactory results in 14-16%, 2-4% had a poor result in the patient analyzed with both Harris Hip Score, Merle d'Aubigne, and Postel score. 41 (82%) patients were able to sit cross-legged, 46 (92%) had returned to regular work and 4 (8%) patients changed their occupation to desk jobs. **Conclusion:** Acetabular fractures can be dealt with minimalistically with great to magnificent outcomes. Joint congruency must be kept up particularly in a weight-bearing arch and checked with sequential x beams during the treatment with a foothold and early scope of development of the hip joint, proprioceptive exercise, muscle reinforcing with reformist stride preparing will give great to fantastic Functional and clinical result.

**Keyword:** Acetabular fractures, Functional outcome, Conservative.

### INTRODUCTION

Acetabular fractures are a consequence of high-speed injury including 18% of all pelvic fractures. (1,2) Anatomical and compatible decrease of the acetabular break is the best quality level in the administration of the acetabular cracks. In the distributed writing both moderate and employable

administrations have been examined having points of interest and hindrances of both the modalities of treatment. (2-4)

The nature of the decrease and kind of crack decides the useful result in the acetabular breaks. Dislodged

cracks are best treated carefully by open decrease and inward obsession. Traditionalist strategy for treatment by shut decrease and keeping up the concentric decrease with the skeletal footing is as yet the backbone of treatment in creating countries. (3,4)

Acetabular breaks cause degenerative changes in the hip bone socket and femoral head causing brokenness of the hip because of modification in the biomechanics prompting optional arthrosis. (5) Hence, the present study was conducted to assess the functional outcome of conservative management of acetabular fractures at tertiary care hospitals.

## **MATERIALS & METHODS**

The present retrospective study was conducted at the Department of orthopedics at our tertiary care hospital. The study duration was from July 2019 to June 2020. The study group of 50 patients, consisted of mainly patients from different parts of Rajasthan and also some from the states like Gujarat and Madhya Pradesh. In view of Jud et al grouping, the X-beams and CT examines were classified. (6) The patients with related pelvic ring cracks were avoided from the investigation. The consideration models were patients having more than 3mm intra-articular dislodging on the x beams and with a base follow-up of 5 years.

Patients were overseen minimalistically after shut decrease under sedation whenever related to disengagement and followed by distal femur or proximal tibial longitudinal skeletal foothold. Related focal disengagement was treated with a standard horizontal foothold. The span of foothold was 6 two months with 10-20% of the body weight. X-beam of the pelvis with both hip joint AP see with footing was done each week. Continuously scope of development with the foothold was begun from the fourth week onwards alongside a stepwise decrease of the footing weight. During the administration patients were treated with in-bed practice treatment and utilized a water sleeping pad to forestall bedsores, DVT prophylaxis began, chest physiotherapy, motivator spirometry, and intermittent mental evaluation and guiding were done to persuade the patients to keep up inspirational viewpoint.

When the foothold was off patient were exposed to post-usable recovery including tilt-table proprioceptive exercise, muscle fortifying activity, and non-weight bearing strolling for 4 a month and a half. This was trailed by reformist weight-bearing from toe-contact to full weight-bearing before the finish of 8-12 weeks. Patients were followed up at a half year, 1 year, 2 years, and toward the finish of 5 years for practical assessment and evaluation with the clinical result scores Merle d'Aubigne and Postel score and Harris Hip Score.8,9 The test of significance was utilized to decide the measurable centrality of the information by applying the chi-square test.

## **RESULTS**

In the present study, we enrolled 50 patients, consisted of mainly patients from different parts of Rajasthan and also some from the states like Gujarat and Madhya Pradesh. The study included 50 patients with an average age of 42.7 years with 32 patients (64 %) male and 18 patients (36%) female patients with an average BMI of 26.1 kg/m<sup>2</sup>. The mechanism of injury was commonly RTA in 37 (74%) of patients and 13 (26%) fell from a height. Based on the X-rays and CT scan patients had fractures involving 16 (32%) posterior wall 4 (8%) posterior column, 5 (10%) anterior column, 4 (8 %) transverse, 2 (4%) posterior column with posterior wall, 5 (10%) transverse with posterior wall, 4 (8 %) T-shaped, 1 (2%) anterior column with posterior Hemi-transverse, and 9 (18%) involved bi-columnar fractures. The average duration of skeletal traction was 5.8 weeks and the average follow up was 5.7 years with the minimum follow up of 3 years and a maximum of 8 years (Table 1)

Complications during the treatment had 9 (18%) patients with grade 1 and 2 bedsores who were further treated with an application of moisture-barrier ointment and sore gradually treated over a week. There were 4 (8%) patients who had a restricted range of joint movement and were treated with physiotherapy. Rest patients have attained a functional range of movement. There were 4 (8%) patients who developed pin tract infection in whom 3 (6%) were fully treated with oral antibiotics with daily dressing. And in 1 patient the skeletal traction

was treated with intravenous antibiotics, along with an adequate wash and buck's traction. 3 (6%) patients had reported avascular necrosis of the head of the femur by the end of two years. There were cases reported with deep vein thrombosis and any other systemic complications seen (Table 2).

**Table 1: Distribution of study subjects according to the study parameters.**

<b>Age</b>	Mean 42.7 Years
<b>Sex</b>	
Male	32 patients (64 %)
Female-	18 patients (36%)
<b>Body Mass Index(kg/m2)</b>	Mean -26.1 kg/m2
<b>Mechanism of injury</b>	
Road Traffic accident	37 (74%)
Fall from height	13 (26%)
<b>The average duration of Skeletal traction</b>	5.8 weeks
<b>Average follow-up</b>	5.7 years

**Table 2: Complications due to conservative management wise distribution of study subjects**

<b>Complications due to conservative management</b>	<b>Number and percentage of patients</b>
<b>Bedsore</b>	Grade 1- 4 (10.25%)
Grade 1	5 (10%)
Grade 2	4 (8%)
<b>Joint stiffness</b>	4 (8%)
<b>Pin tract infection</b>	4 (8%)
<b>Avascular necrosis of head of the femur</b>	3 (6%)

Functional outcome score showed good to excellent results in 82%, fair to satisfactory results in 14-16%, 2-4% had a poor result in the patient analyzed with Harris Hip Score, Merle d'Aubigne, and Postel score. 41 (82%) patients were able to sit cross-legged, 46 (92%) had returned to regular work and 4 (8%) patients changed their occupation to desk jobs (Table 3).

**Table 3: Distribution of study subjects according to the functional outcome score.**

<b>Outcome</b>	<b>Harris hip Score</b>	<b>Merle d'Aubigne and postel score</b>
<b>Excellent</b>	18	12
<b>Good</b>	23	29
<b>Fair</b>	08	07
<b>Poor</b>	01	02
<b>Total</b>	50	50

## DISCUSSION

Acetabular cracks are unpredictable wounds to treat and require extraordinary abilities in dealing with the break as it includes significant weight-bearing joint of the body. With propels in the administration of the acetabular break, the inconveniences associated with the treatment have decreased significantly. (5) In the present study, we enrolled 50 patients with the average age of 42.7 years with 32 patients (64 %) male and 18 patients (36%) female patients with the average BMI 26.1 kg/m2. The mechanism of injury was commonly RTA in 37 (74%) of patients and 13 (26%) fell from a height. Based on the X-rays and CT scan patients had fractures involving 16 (32%) posterior wall 4 (8%) posterior column, 5 (10%) anterior column, 4 (8 %) transverse, 2 (4%) posterior column with posterior wall, 5 (10%) transverse with posterior wall, 4 (8 %) T-shaped, 1 (2%) anterior column with posterior Hemi-transverse, and 9 (18%) involved bi-columnar fractures. The average duration of skeletal traction was 5.8 weeks and the average follow up was 5.7 years with the minimum follow up of 3 years and a maximum of 8 years Controversy exists concerning which is the best treatment methodology of choice. (7) Sen et al directed a drawn-out investigation on 32 patients with dislodged acetabular cracks with in excess of 3 mm removal including the weight-bearing vault without an insecure pelvic break with 56.3% reducibility were dealt with minimalistically had great to superb useful outcomes in 83.3% with great to a brilliant radiological evaluation in half of the cases.(2)

Complications during the treatment had 9 (18%) patients with grade 1 and 2 bedsores who were

further treated with application of moisture-barrier ointment and sore gradually treated over a week's time. There were 4 (8%) patients who had a restricted range of joint movement and were treated with physiotherapy. Rest patients have attained a functional range of movement. There were 4 (8%) patients who developed pin tract infection in whom 3 (6%) were fully treated with oral antibiotics with daily dressing. And in 1 patient the skeletal traction was treated with intravenous antibiotics, along with an adequate wash and buck's traction. 3 (6%) patients had reported avascular necrosis of the head of the femur by the end of two years. There were cases reported with deep vein thrombosis and any other systemic complications seen Magala et al investigated 140 patients and presumed that for undislocated acetabular breaks and negligibly uprooted cracks moderate treatment is the strategy for decision with great to astounding outcomes and good outcomes were seen in uprooted breaks with a high danger for medical procedure who were overseen traditionalist treatment.(3,10) Magu et al led a review concentrate with 69 patients who had 71 uprooted acetabular breaks overseen minimalistically with the normal follow-up of 4.34 years had great or fantastic outcomes in 45 patients with great harmonious decrease and closed the part of non-usable administration of acetabular crack with compatible reduction.(4)

Lovrić et al led a review investigation of 103 patients and looked at the utilitarian status of hip joint after careful and traditionalist treatment of acetabular breaks and presumed that the outcomes acquired both the strategies were similarly viable and had comparative practical status.5 Amaravati et al assessed 68 instances of acetabular breaks with the normal follow up three years indicated that 30 cases out of 46 cases treated moderately and 12 out of 22 cases treated precisely had accomplished great to phenomenal outcomes respectively.7 A review investigation of 57 patients treated moderately by Heeg et al with a normal follow up of 7.9 years exhibited generally speaking acceptable useful outcomes in 75% of cases in patients in whom the joint congruency was maintained.11 In our examination functional outcome score showed good

to excellent results in 82%, fair to satisfactory results in 14-16%, 2-4% had a poor result in the patient analyzed with both Harris Hip Score, Merle d'Aubigne, and Postel score. 41 (82%) patients were able to sit cross-legged, 46 (92%) had returned to regular work and 4 (8%) patients changed their occupation to desk jobs

## CONCLUSION

We concluded from the present study that Acetabular fractures can be dealt with minimalistically with great to magnificent outcomes. Joint congruency must be kept up particularly in the weight-bearing arch and checked with sequential x beams during the treatment with a foothold and early scope of development of the hip joint, proprioceptive exercise, muscle reinforcing with reformist stride preparing will give great to fantastic Functional and clinical result.

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