

TO CO RELATE THE QUALITY OF RECONSTRUCTION WITH THE AFFECTED HIP FUNCTION AND QUALITY OF LIFE IN PATIENTS UNDERGOING THA POST ACETABULUM FRACTURE

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Abstract

Background: Hip fractures rank in the top ten of all impairments worldwide in terms of loss in disabilityadjusted years for people 50+ years old

Methods: The study was carried as a retrospective study, from February 2013 to July 2014. After getting the approval from the Ethics Committee of the Institute (Annexure I) and the consent from the patients the study was conducted on 49 patients who underwent Total Hip Arthroplasty after fracture acetabulum.

Results: The mental scores were significantly higher in the group where safe range of inclination was achieved. Therefore the quality of life is dependent on the safe range of inclination.

Conclusion: We found that the patients who were treated with ORIF following the fracture acetabulum had better physical and mental scores.

Keywords: Hip, Physic, Mental Arthroplasty, Reconstruction

Introduction

Hip fractures rank in the top ten of all impairments worldwide in terms of loss in disabilityadjusted years for people 50+ years old.¹ The absolute number of hip fracture hospitalizations in the United States is currently about 310,000,² and this number is expected to continue to rise due to increased life spans and an aging baby boom generation.

Ninety percent of hip fractures result from a simple fall;³ therefore, efforts to prevent hip fractures are unlikely to have a substantial impact on hip fracture incidence.⁴ The consequences for hip fractures in elderly individuals are significant in terms of lives lost and the associated negative impacts on hip fracture patients' functioning and quality of life.⁵ One year mortality for patients after a hip fracture is approximately 20 percent, with men, patients older than 75 years, and nursing home patients at higher risk.⁶ However, it is not clear how much of that mortality is due to the fracture and its sequelae and how much to the underlying frailty that may predispose a person to a fracture. Morbidity associated with hip fractures may include serious complications, such as deep vein thrombosis and postoperative infection, muscular deconditioning, pain, and loss of mobility.

Materials and Methods

PATIENT SELECTION:

The study was carried as a retrospective study, from February 2013 to July 2014. After getting the approval

from the Ethics Committee of the Institute (Annexure I) and the consent from the patients the study was conducted on 49 patients who underwent Total Hip Arthroplasty after fracture acetabulum.

INCLUSION CRITERIA

Patients who had undergone total hip arthroplasty in the past 7 years following fracture of the acetabulum, by a single surgeon.

EXCLUSION CRITERIA:

1. Debilitating medical or surgical illness or generalized illness or co morbidities leading to restriction of physical activities.
2. Any associated foot, ankle, knee injury or disease likely to affect the overall functional outcome.
3. Associated spine injury.
4. Any neurological or psychiatric ailments interfering with the assessment of general health of the case.
5. THA done more than 7 years ago.

GROUPS

Patients were divided into

1. Four groups based on the diagnosis.
2. Two groups on the basis of treatment received after fracture acetabulum
3. Three groups based on the indication of THA
4. Two groups based on the surgical intervention.

Detailed history of the patients was taken for the aetiology of the primary disease. All the patients included in the

study underwent complete clinical and radiological evaluation.

Results

A total of 49 patients with 49 hips with Total hip Arthroplasty were followed as per the predefined inclusion and exclusion. All the patients were included in the study after informed consent. The patients were recruited through the outpatient department of orthopaedics, PGIMER. An independent observer, other than the surgeon

who operated, evaluated all these patients at the follow up. The patients were divided into various groups depending on the type of fracture, the indication for the THA and the type hip replacement done.

The quality of life scores were found better in the group where the cup inclination was restored within the "safe range" than the group of patients in whom the inclination was out of range.

NPar Tests

Table 1:

INCLINATION		N	Mean	Std. Deviation	Minimum	Maximum	-p-value
PCS	Safe range	28	50.04	9.520	25	57	0.086
	Out of range	18	45.23	10.327	22	57	
MCS	Safe range	28	58.04	4.454	46	64	0.039
	Out of range	18	53.27	7.710	35	61	

*Statistically the physical scores were not significant in the two groups. The mental scores were significantly higher in the group where safe range of inclination was achieved. Therefore the quality of life is dependent on the safe range of inclination.

VERTICAL OFFSET

On evaluation for the SF-12 score, it is clear that the patients who were treated with ORIF following the fracture acetabulum had better physical and mental scores in both acceptable and the un-acceptable groups.

Table 2:

Ratio PO Vertical	Treatment		N	Mean	Std. Deviation	Minimum	Maximum	p-value
Acceptable	PCS	Operative	22	47.66	10.571	25	57	.597
		Non Operative	9	46.96	12.836	22	57	
	MCS	Operative	22	57.06	4.964	46	64	.658
		Non Operative	9	56.38	8.287	35	61	
non Acceptable	PCS	Operative	7	52.47	7.057	41	57	.081
		Non Operative	9	45.44	8.611	37	57	
	MCS	Operative	7	56.63	6.890	46	61	.240
		Non Operative	9	52.52	6.815	44	61	

*Statistically there was no significant difference in the quality of life in patients in where acceptable vertical offset was restored within 20% of the opposite side and those where it was out of range.

HORIZONTAL OFFSET

On evaluation for the SF-12 score, it is clear that the patients who were treated with ORIF following the fracture acetabulum had better physical and mental scores in both acceptable and the un-acceptable groups.

Table 3:

HOFFSET	Treatment		N	Mean	Std. Deviation	Minimum	Maximum	p-value
Acceptable	PCS	Operative	15	49.77	10.086	25	57	0.972
		Non Operative	7	48.83	9.588	37	57	
	MCS	Operative	15	56.97	5.961	46	64	0.386
		Non Operative	7	55.83	6.141	47	61	
non Acceptable	PCS	Operative	14	47.80	10.062	27	57	0.680
		Non Operative	11	44.53	11.362	22	57	
	MCS	Operative	14	56.95	4.851	46	61	0.621
		Non Operative	11	53.57	8.601	35	61	

*Statistically there was no significant difference in the quality of life in patients in where acceptable horizontal offset was restored within 20% of the opposite side and those where it was out of range

Discussion

Total hip arthroplasty is a common, one of the most successful and cost-effective procedures in Orthopaedics. It remains the treatment of choice for long-term pain relief and restoration of function for patients with pathologies of hip. In recent time, we have seen a constant rise in the post traumatic hip as the indication for hip arthroplasty. Planning a THA after fracture acetabulum poses a number of challenges to the surgeon.

There are very few studies in the world on total hip arthroplasty following acetabulum fracture. There has been no study or evaluation on this very important topic in our population. Similarly, there has been no study in the world using hip functional and quality of life scores to evaluate the patients after THA following acetabulum fracture.

In the present study, ORIF was done in 31 (63%) patients and only 18 (37%) patients were managed non-operatively. Our data is comparable with the study by Oujjie et al; moreover we are having a larger number of patients. In the Romness and Lewallen and Huo et al studies, proportionally a larger number of patients were treated non-operatively following the fracture acetabulum^{7,8}. Our approach in the management of fracture acetabulum was based on the guidelines advocated by Matta and Judet and Letournel.

Conclusion

We found that the patients who were treated with ORIF following the fracture acetabulum had better physical and mental scores.

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