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ASSESSMENT OF INTERTROCHANTERIC FRACTURES: A CROSS-SECTIONAL PROSPECTIVE STUDY

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ABSTRACT

Background: Fracture of hip has always been a subject for research for various researchers, various studies had been conducted to evaluate the newer operative and management approaches to provide a better quality of life to patients. Fracture of hip includes two types of distinct anatomical variants: among them one is fractures of the intertrochanteric region and another one is fractures of the femoral neck. **Material & Methods:** The present cross-sectional prospective study was conducted at department of orthopedics of our tertiary care hospital. The study duration was of one year from January 2018 to December 2018. A sample size of 50 was calculated at 95% confidence interval at 5 % acceptable margin of error. Patients of more than 18 years of age with intertrochanteric fractures were enrolled for the study. **Results:** Trivial trauma was the most common mode of injury which was accounts for fracture in 36 (72%) patients which was followed by road traffic accidents accounts for fracture in 14 (28%) patients. Among the patients operated with intramedullary hip screw 69% were had fracture due to trivial trauma while 31% cases had fracture due to RTA. Majority of patients 31 (62%) had fractures of right sided hip bone. Out of the total patients, majority of patients 29 (58%) had type II intertrochanteric hip fractures which was followed by type III among 10 (20%) patients and type I in 8 (16%) patients and type IV in 3 (6%) patients. **Conclusion:** We concluded from the present study that male was encountered more than females with an age group of more than 60 years of age. Most common mode of injury was trivial trauma which was followed by road traffic accidents. Right side hip bone fracture was the most common with majority of them were type II.

Key words: Intertrochanteric fractures, Hip Joint, domestic fall.

INTRODUCTION

The Fracture of hip has always been a subject for research for various researchers, various studies had been conducted to evaluate the newer operative and management approaches to provide a better quality of life to patients (1). Fracture of hip includes two types of distinct anatomical variants: among them one is fractures of the intertrochanteric region and another one is fractures of the femoral neck. Both of these fractures occur in almost approximately equal proportions and almost covers more than 90% of total hip fractures (2). However, on basis of anatomy of hip bone and its bony composition it was reported that fracture rates are different for each hip bone site. On the basis of site wise distribution and bony composition it was found that intertrochanteric region reported to have trabecular bone (50%) on the other

hand femoral neck region reported to have trabecular bone (25%) (3). The most common site for intertrochanteric fractures is between the greater trochanters and lesser trochanters, however they are extracapsular fractures, hence typically they do not reported to have healing complications which is frequently seen in femoral neck fractures (4).

The hip joint is a ball and socket type joint; therefore, pressure forces of weight bearing are transmitted directly to the femur head and neck at an angulation of 165-170 degrees. The neck femur makes angle of 120-130 degrees with its long axis of the shaft and the neck. These angulations allows the hip joint to swing and move with greater mobility (5). The plane of forces also in relation with trabeculae which is in medial aspect of femoral neck and superior-medial to the femoral head. These impeding forces expand the cartilaginous epiphyseal plate (6). We conducted the present study to assess the clinical profile of patients with Intertrochanteric Fractures of Hip.

MATERIALS & METHODS

The present cross-sectional prospective study was conducted at department of orthopedics of Preksha Hospital & Chetna Ivf Research Centre and Manidhari Hospital & Maloo Neuro Centre, Jodhpur. The study duration was of one year from January 2018 to December 2018. A sample size of 50 was calculated at 95% confidence interval at 5 % acceptable margin of error. Patients of more than 18 years of age with intertrochanteric fractures were enrolled for the study. Clearance from Institutional Ethics Committee was taken before start of study. Written informed consent was taken from each study participant.

Detailed clinical history with general physical and clinical examination was done for each patient and recorded in the proforma prepared for this study. After treatment patients were being followed-up for for clinical outcome and radiological evaluation, regularly at 6^{th} weeks, 12^{th} weeks, 6^{th} months and 12^{th} months till the fracture union occur and after that once yearly. Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05.

RESULTS

In present study, we enrolled 50 patients of intertrochanteric fractures. On the basis of demographic data, out of 50 patients, majority of patients in the study 16 (32%) were in the age group of 60–70 years which was followed by 11 (22%) patients in the age group of 50-60 years. 9 (18%) patients were in the age group of 40-50 years and more than 70 years of age respectively. 5 (10%) patients were in the age group of 30-40 years. The average age of the study participants was 54.82± 8.9 years. On the basis of gender, out of 50 patients, majority of patients in the study 31 (62%) were males. Majority of the females were in the 60-70 years of age group. The ratio of males to female in the present study was 1.63:1. (Table 1)

Table 1: Distribution of study participants according to age and gender

parameters		No of patients (%)
Age in years	**30-40**	5 (10%)
	40-50	9 (18%)
	50-60	11 (22%)
	60-70	16 (32%)
	>70	9 (18%)
Gender	**Male**	31 (62%)
	Female	19 (38%)

In the present study, trivial trauma was the most common mode of injury which was accounts for fracture in 36 (72%) patients. Trivial trauma was commonly reported in patients of age group of 60–70 years. Road traffic accidents was the most common mode of injury which was accounts for fracture in 14 (28%) patients. RTA was commonly reported in patients of age group of 30–40 years. Among the patients operated with intramedullary hip screw 69% were had fracture due to trivial trauma while 31% cases had fracture due to RTA. Majority of patients 31 (62%) had fractures of right sided hip bone. Out of the total patients, majority of patients 29 (58%) had type II intertrochanteric hip fractures which was followed by

type III among 10 (20%) patients and type I in 8 (16%) patients and type IV in 3 (6%) patients. (Table 2)

Table 2: Distribution study participants according to various parameters.

parameters		No of patients (%)
Mode of injury	**Trivial**	36 (72%)
	Road traffic accidents	14 (28%)
Side involved	**Right**	31 (62%)
	Left	19 (38%)
Type of fracture	**Type I**	8 (16%)
	Type II	29 (58%)
	Type III	10 (20%)
	Type IV	3 (6%)

DISCUSSION

In present study, we enrolled 50 patients of intertrochanteric fractures. On the basis of demographic data, out of 50 patients, majority of patients in the study 16 (32%) were in the age group of 60–70 years which was followed by 11 (22%) patients in the age group of 50-60 years. 9 (18%) patients were in the age group of 40-50 years and more than 70 years of age respectively. 5 (10%) patients were in the age group of 30-40 years. The average age of the study participants was 54.82± 8.9 years. On the basis of gender, out of 50 patients, majority of patients in the study 31 (62%) were males. Majority of the females were in the 60-70 years of age group. The ratio of males to female in the present study was 1.63:1. Similar results were reported in a study conducted by Miedel R among 217 patients of hip fracture and found that incidence of fracture was higher among old age and most common etiology reported was domestic falls (7). Similar results were reported in a study conducted by Daniachi D among 113 patients of hip fracture and found that incidence of fracture was higher among old age and most common etiology reported was low energy trauma. Mean duration of hospitalization was 13 days with 7% of mortality. Out of the total patients with hip fracture most common type was intertrochanteric (8).

In the present study, trivial trauma was the most common mode of injury which was accounts for fracture in 36 (72%) patients. Trivial trauma was commonly reported in patients of age group of 60–70 years. Road traffic accidents was the most common mode of injury which was accounts for fracture in 14 (28%) patients. RTA was commonly reported in patients of age group of 30–40 years. Among the patients operated with intramedullary hip screw 69% were had fracture due to trivial trauma while 31% cases had fracture due to RTA. Majority of patients 31 (62%) had fractures of right sided hip bone. Out of the total patients, majority of patients 29 (58%) had type II intertrochanteric hip fractures which was followed by type III among 10 (20%) patients and type I in 8 (16%) patients and type IV in 3 (6%) patients. Similar results were reported in a study conducted by Hayes W among patients of hip fracture and found that the incidence of fracture was higher among old age and most common etiology reported was domestic falls and fall related injuries. They reported that hip fractures were result in considerable burden on quality of life of the patient (9).

Similar results were reported in a study conducted by Kumar G among 45 patients of intertrochanteric hip fracture and found that male was encountered more than females with an age group of more than 60 years of age. They found better post-operative outcome in the terms of weight bearing and joint mobilization among 78% of cases during the follow-up period. Similar to the present study they found the most common type of fracture was type II. They reported mortality rate of 6% (10). Similar results were reported in a study conducted by Dasari S among 50 patients of hip fracture and found male was encountered more than females with an age group of more than 60 years of age. Similar to present study they reported most common mode of injury was trivial trauma. They also reported right sided hip bone was most commonly involved. Similar to the present study they found the most common type of fracture was type II (11).

CONCLUSION

We concluded from the present study that male was encountered more than females with an age group of more than 60 years of age. Most common mode of injury was trivial trauma which was followed by road traffic accidents. Right side hip bone fracture was the most common with majority of them were type II.

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