ORIGINAL ARTICLE

Functional Outcome in Elderly Patients after Hip Surgery

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INTRODUCTION

The incidence of hip fracture is increasing due to the ageing population. The worldwide annual number of hip fracture is estimated to rise form 1.7 million in 1990 to 6.3 million in 2050[1].

Most of hip fracture are associated with increase mortality and morbidity that usually result in costly hospitalization and lengthy rehabilitation rehabilitation procedure. Most of the patients are unable to achieve to their pre-fracture living situation and complete functional recovery[2].

Our focus was proximal femur fracture in elderly population. Fracture of proximal femur remains one of the most common and potentially devastating injuries with significant morbidity and mortality among the elderly population.

The present study was conducted to evaluate ambulatory capability and functional outcome in elderly patients who sustained a proximal femur fracture and underwent surgical intervention.

Key words: Elderly patients, proximal hip fracture, Post-operative functional outcome.

PURPOSE OF THE STUDY

We conducted observational study at Abbasi Shaheed hospital to evaluate functional outcome in elderly patients aged 50 years and above, who were surgically managed.

The variables used for the assessment of functional outcome includes;

Pre fracture ambulatory status,

Post fracture ambulatory status,

(Independent walker, need some walking aid, bedridden)

MATERIALS AND METHODS

From April 2010 to Jan 2011, we prospectively registered all the patients with proximal femur fracture in orthopedic department at Abbasi Shaheed Hospital. Inclusion criterial for patients selection were age 52 years and above of either sex. Isolatedsub trochanteric fracture, suspected pathological fracture and patients with other associated injuries, patients with previous ipsilateral or contralateral proximal femur fracture were excluded from study.

After the patients selection, computer generated sheet (Annex-1) issued at the time of admission. The annex sheet has two parts.

The Part A of the questionnaire predominantly includes patients' data like age, sex, occupation, residence, contact number and any addiction history.

The Part B of the questionnaire includes type of the fracture, fracture side, date of injury, mode of injury, date of surgery, type of treatment either internal fixation or prosthesis replacement and pre-fracture form of living (alone or with someone). The operability was evaluated according to the classification of the American Society of Anesthesiologists (ASA).

The pre-operative and post-operative locomotors abilities of the patients were evaluated and record for mobility score of Parker and Palmer. The functional capacity was studied with patients able to walk inside house, patients able to walk outside house and patients able to go for shopping, to a restaurant and able to visit family. These tasks were assessed using a four step level: level 1 = managing independently, level 2 = managing alone with an assistive device, level 3 = managing with the help of another person and level 4 = not managing at all[3]. The patient's functional capacities and their places of residence were studied preoperatively and recorded postoperatively at two weeks, six weeks, six month and one year. The statistical analyses were performed using test, the paired t test and the chi-squared test.

RESULTS

From April 2010 to Jan 2011, 82 patients were implanted related procedure perform due to proximal femur fracture in Abbasi Shaheed Hospital. 25 patients out of 82 were excluded from

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my study due to death of 22 patients within a year and 3 patients were lost to follow up.

Out of 57 patients; 36 (63.2%) were male and 21(36.8%) were female. There were 10 patients with intracapsular fracture and 47 pateitns with extra capsular fracture. Prior to surgery, 57 patients were mobile without any device (pre-operative score 9) but after one year, post mobility score was 6.93 as shown in table no 2. None of the patients were confined to bed before the fracture.

The functional capacity of the patients did not resume to the level they had prior to the fracture. The total functional capacity of the patients who survived the year is 6.9 (which was significan p value 0.00) than before the fracture is 9 as shown table no 2.

There was significant difference between the function capacity of males and females. The mean functional capacity of males was 7.72 and females 5.57 which was a significant diference (P value 0.00) It shows that females need more assistance than males as shown table no 1.

Increasing age has been associated with poorer functional recovery, poorer walking status, and an increaseing rate of postoperative complications after surgery for the treatment of a hip fracture. In our result there was significant difference between the functional capacity of younger age group (age between 52-65 years) and older age group (age 66 and beyond) which has p value 0.00 as shown in table no. 3.

In our study there was no significant difference in functional outcome of which intracapsular and extracapsular fracture may be due to the small sample size as shown in table no 4.

Table 1: Male and Female Ratio

Male (n-36)	Female (n-21)	P value	95% confidenceinterval of the difference
7.72 Std Dev. 1.64	5.57 Std Dev 2.5	0.00	1.03-3.26

Table 2: Pre-Operative and Post-Operative Status. Paired Sample Statistics

Pre-Operative score (mean)	Post-operative score (mean)	Mean Difference	P value	95% confidenceinterval of the Difference
9.00	6.93	2.07 Std de 2.259	0.00	1.4-2.6

Table 3: Post Operative Mobility Score between younger and older age group.
(Younger age b/w 52-65 years & older age 66 and above).

Younger Age (n-35)	Older Age (n-22)	Mean Difference	P Value 95% confidenceinterval of the Difference
7.77 St dev 1.68	5.59 St dev 2.44	2.18	0.00(1.08-3.2)

Table 4: Intracapsular & Extracapsular Fracture

Intracapsular Fracture (n-10)	Extracapsular Fracture (n-47)	Mean Difference	P Value	95% Confidence Interval of the Difference
6.8 Std dev 1.932	6.9 Std dev 2.340	-0.15	0.84	-1.74-1.433

DISCUSSION

Proximal femur fracture is a devastating type of injury, due to its significant types of morbidity and mortality issues. Frequent association of prevalent medical and surgical co-morbid conditions in this geriatric population make patients management complex. A multi-disciplinary type of approach is warranted for these fractures.

Elderly Hip Fracture

Type of fracture & Management. (Orthopedic team).

Pre-Operative optimization. (Medicine & Anesthesia).
Post-op Rehabilitation. (Physiotherapy).
Post-op Social Network. (Family members & others).

Each of the memberneeds to play an aggressive role if a predicted functional outcome is to be expected.

Many factors influence the recovery after the hip fracture: pre-fracture health, mental and functional status including muscle power of the good limb[4], Type of surgery, fracture type, surgical complication, self-efficacy beliefs, depressive symptoms, number of medications, hip pain[5], urinary incontinence and chronic diseases[6].

The main aim of this multidisciplinary management is to restore the functional capacity of these patients to the same level they had prior to the fracture. The one year mortality rate after hip fracture is high. In previous Finnish studies, this rate varied between 18% to 28%[7]. The lowest mortality rate was found 6.2% in a review of the literature[8]. The next low mortality rate 12% was reported by Cedar et al[9]. And the highest mortality rate 50% was reported by Beals[10].

In present study 28.8% of the patients died within one year of the fracture. It is difficult to compare the mortality rates from different studies especially from different countries, because the back ground variables differ regarding patient's age, gender, and health status, walking ability, activity of daily living, post op care and post op rehabilitation.

Hip fracture is generally associated with a higher mortality rate in men than in women[11]. However in this study there was no significant differences in this respect.

Several studies have found that recovery following hip fracture is usually complete within 6 months[12]. In our study after one year, functional outcomes of our patients were generally poor compared to the pre-fracture situation. None of the patients resumed to the level they had prior to the fracture.

Advancing age has been associated with increased mortality after the hip fracture[13]. In the present study extreme age group is associated with higher mortality rate and decrease functional capacity.

Barnes study[14] had high ratio 7:1 of female and male participants, with other studies reporting ratio of 2.4 to 4.0 to 1.0 in favor of female subject[15]. Perhaps the reason why women sustain more hip fracture than men is that they have higher rate of osteoporosis. In our study there was no significant difference between men and women but it's significantly difference between the functional capacities of male and female that men as female need for more assistance than male for rehabilitation a shown table no 1.

CONCLUSION

Proximal femur fracture in an elderly population is a serious type of orthopedic injury. The surrounding of this skeletal trauma is exceedingly complex and impossible to control. Management of such an injury comes into the domains of medicine, rehabilitation, psychiatry, social systems, medical economics and may be some unknown factors.

It is essential to understand the nature of injury, the potential impact on the patient's level of functioning and the secondary impact on the patient's relatives. The primary goal of management is to return the patient to his or her pre-injury level. For most patients, this goal is best achieved by operative management, followed by early mobilization. A satisfactory outcome however, depends on something, much more than the fracture surgery. Physician must realize the complex problems associated with geriatric population and develop treatment plans that address all the factors that may affect the outcome. It is possible that new and better treatment for osteoporosis will result in decreased incidence of hip fractures in the future. For now, however, we must address the epidemic of hip fracture at individual and collective level.

ACKNOWLEDGEMENT

We specially thanks Dr. Zafer Fatimid Associate Professor in Community Medicine Aga Khan University for his assistance in the statistical analysis and research design of this study and also thanks to my wife Dr. Syeda Kiran Abbas who help me for compiling the results.

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