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Analytical study to find out the effect of subtrochanteric fractures on Iraqi elderly patients

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Abstract— *Objective: This study aims to find out the effect of subtrochanteric fractures on Iraqi elderly patients Materials and methods: A cross-sectional observational study was established for patients over 75 years of age who were admitted to different hospitals in Iraq with a hip fracture in the period 2018-2020. The clinical history of each patient was reviewed, and demographic data, medical history, comorbidities, age, admission status, surgery data, and presence of complications were extracted. Results: During the study period, 100 patients were analyzed; the mean age was 83.92 ± 5.5 for the Subtrochanteric group and 82.1 ± 4.99 for the Per trochanteric group Forty-eight patients were males, with 68.5% of the population, and 22 female patients, with 31.4%. For the Subtrochanteric group, the mean length of HS was 13.22 (±6.1), and for the Pertrochanteric group, the mean length of HS was 10.1 (±2.2) with a statistically significant relationship at 0.001 p-values. Conclusion: Age, increased risk of anesthesia, need for supplemental oxygen during the postoperative period, and length of hospital stay were the main independent factors for the presence of in-hospital complications*

Keywords— ***Per trochanteric, Subtrochanteric, WHO, VAP, mortality***

I. INTRODUCTION

Subtrochanteric fractures (Fc) are most common in orthopedic emergencies, most common in people over 65 years of age, with an average of 1.5 million fractures annually. Therefore, it is considered a public health problem, and it has implications in various health fields such as internal medicine, rehabilitation, psychiatry, and trauma. Worldwide, an estimated one million [1,2] The World Health Organization (WHO) has estimated that between 2000 and 2050, the expectations of people over 60 years of age who will have this condition will increase from 11% to 22%. In people over 80, it will quadruple [3,4]. At the present time, this problem should have greater political will due to the prevalence of this disease in our population, specifically in elderly patients, and if we take into account the last census that was conducted in Iraq in 2017, which shows that the number of elderly people reached 3 million Which means 11.9% of the total [5,6,7,8]. Similarly, the National Institute of Statistics and Informatics (INEI) reported in its latest technical report on the demographic status of the elderly that the rate of aging has increased from 5.7% to 12.4% in the past five decades. [9,10]

The problem of research are age, gender, and polypharmacy associated with hip fracture in hospitalized elderly in 2020. Research studies show that hip fracture is a public health problem that requires greater attention and policy action, given the high morbidity and mortality it causes, especially for the elderly

Therefore, it is important to know the relationship between age through this advanced study, gender, and polydrugs as associated risk factors for subtrochanteric fractures [11,12]

Based on the foregoing, this research aims to contribute statistical data to a bibliographic source that will improve

our databases related to the health to patients in Iraq to achieve greater efficiency and estimate the size of the problem in order to contribute to it.

II. MATERIAL AND METHOD

A cross-sectional study was conducted in Al-Furat Hospital, Baghdad Governorate - Iraq, where 100 patients were collected and included elderly patients over the age of 70 years to find out the effect of subtrochanteric fractures on Iraqi elderly patients from 2018 to 2020
. In this study, 100 patients were included who underwent the necessary analyzes to know the effect of subrotator fractures on elderly patients in Iraq.
This study was designed using the statistical analysis program IBM soft spss 22 and Microsoft Excel 2010.
The electronic record in the hospital was relied upon for the purpose of collecting information and demographic data about the disease, and written consent was taken from the patients for the purpose of data collection, which included age, sex, body mass index, fracture type, in addition to the patient's cognitive status.
Patients were evaluated based on the VAP of 10 degrees to know the amount of pain, meaning that the patient who gets 10 degrees indicates the lack of any ability to move, and through the use of the special (Viger scale) in the mental status questionnaire to patients for the purpose of assessing his knowledge Patients with this type of fracture
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III. RESULTS

Table 1- Clinical demographic results of patients

	Per trochanteric	Subtrochanteric	P value
Age	**82.1 ± 4.99**	**83.92±5.5**	**0.88**
BMI	**29.2±4.4**	**28.3±4.1**	**0.65**
SEX			
Male, N	**19**	**48**	**0.1**
Female, N	**11**	**22**	**0.05**
ASA	**3.1±1.1**	**2.90±0.88**	**0.001**
comorbidities			
Heart disease, N	**8**	**29**	**0.77**
Metabolic bone disease	**6**	**15**	**0.98**
arthritis	**7**	**16**	**0.22**
Other, N	**9**	**10**	**0.76**
Pre-FX mobility	**4.11 ± 1.99**	**3.55 ± 2.63**	**<0.001**
Osteoprotective treatment pre-FX	**6.1%**	**8.2%**	**0.08**
Anti-resorptive	**4.4%**	**6.9%**	**0.001**
osteogenesis	**0.38**	**0.93**	**0.001**
Focus fracture opening, n (%)			
yes	**--**	**20**	
No	**--**	**50**	

Table 2- Outcomes results according to Orthopaedic complication

	Pertrochanteric	Sub trochanteric	P-value
Surgical delay (days)	**5 (0–7)**	**8 (0–14)**	**0.001**
Surgery time (min)	**66 (±27.2)**	**88 (±26.6)**	**0.001**
Hospital stays (days)	**10.1 (±2.2)**	**13.22 (±6.1)**	**0.001**

Union (months)	**5.3 (±1.77)**	**7.1 (±3.07)**	**0.076**
Death in the first year (yes), n (%)	**1 (3.33)**	**8 (11.4%)**	**0.933**
Type of anaesthesia			
General	**3.5%**	**7%**	**0.87**
Other	**96.5%**	**93%**	**0.66**

Table 3- Logistic regression analysis of sub-trochanteric patients

	OR (95% CI)	**P value**
Age	**4.33 (2.22-8.23)**	**0.001**
Sex	**1.11 (0.88-1.77))**	**0.55**
Anti-resorptive	**1.2 (0.6-1.4)**	**0.88**
osteogenesis	**1.5 (0.7-2.2)**	**0.03**
ASA	**1.1 (0.8-1.44)**	**0.05**
Osteoprotective treatment pre-FX	**2.4 (1.4-3.1)**	**0.001**
Hospital stays (days)	**3.3(1.7-5.9)**	**0.001**

Table 4- Complications of patients

Variable	**No.**
complications	**43**
delirium	**12**
Anemia	**9**
infectious	**6**
Renal and electrolyte disturbances	**8**
cardiovascular	**4**
thromboembolic	**4**

IV. DISCUSSION

In this study, 100 patients were collected and distributed into two groups (Subtrochanteric for 70 patients) (and Per trochanteric for 30 patients).

Distributed patients according to sex were 48 male patients, with 68.5% of the population, and 22 female patients, with 31.4% of the population.

A significant difference was observed in the ASA rates, where it was mean + sd (2.90 ± 0.88 for the Subtrochanteric group, but for the Per trochanteric group, it was mean + sd (3.1 ± 1.1).

In recent years, more importance has been given to the management of elderly patients with Subtrochanteric, separating their treatment from only the surgical procedure and transferring it to comprehensive management carried out throughout the recovery period and even during the postoperative period. This has led to the establishment of units specialized in the management of this type of patient. Proper implementation of established management protocols by multidisciplinary groups leads to lower mortality and the presence of complications in the Per trochanteric group [13,14,15,16]. Because of this reduction in negative outcomes, this model of care has become one of the most widely used in geriatric units worldwide. In Iraq, 85% of geriatric services that manage patients with fractures do so under this model of care. Despite the evidence available in our country, models of orthopedic care are only now beginning to be implemented, with only a few centers with multidisciplinary groups being developed for this.

Elderly people with Subtrochanteric have a higher number of comorbidities, high medication use, multiple geriatric syndromes, and risk of complications. With regard to concomitant factors, it was found that presenting a certain degree of functional dependence on admission, having a high anesthetic risk, requiring supplemental oxygen during the postoperative period, and offering a length of hospital stay were independent factors for the presence of in-hospital complications

V- CONCLUSION

This study refers to a comparison between extra capsular fractures in patients aged 75 to 90 years and noted that there is a significant change in the mortality rate in Sub trochanteric of elderly patients.

Addition, a high rate of morbidity, mortality, and morbidity was observed in the Sub trochanteric patients' group, in addition to the occurrence of complications that spread more for 43 patients, and through logistic regression, we find that the most dangerous factors are the age of the patient in addition to the type of anaesthesia used

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