

# HIP FRACTURES IN 5 YEARS AT HUE UNIVERSITY HOSPITAL

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## Abstract

**Aim:** This study aimed to review the clinical findings and surgical intervention of the hip fracture at the Hue University Hospital in Vietnam. **Methods:** The data of proximal femoral fractures was collected retrospectively. All patients, in a period of 5 years, from Jan 2008 to December 2012, suffered either from intertrochanteric or femoral neck fractures. The numbers of patients were gathered separately for each year, by age groups (under 40, 40-49, 50-59, 60-69, 70-79, older) and by sex. We analyzed what kind of treatment options were used for the hip fracture. **Results:** (i) Of 224 patients (93 men and 131 women) studied, 71% patients are over 70 years old, 103 women and 56 men ( $p < 0.05$ ). For patients under 40 years, there were 1 woman and 11 men ( $p < 0.05$ ). There were 88 intertrochanteric and 136 femoral neck fractures. There was no significant difference in the two fractures between men and women. The numbers of hip fracture increased by each year, 29/224 cases in 2010, 63/224 cases in 2011, 76/224 cases in 2012; (ii) Treatment of 88 intertrochanteric fractures: 49 cases (55.7%) of dynamic hip screw (DHS), 14 cases of hemiarthroplasty (15.9%), 2 cases of total hip replacement (2.3%). Treatment of 136 femoral neck fractures: 48 cases of total replacement (35.3%), 43 cases of hemiarthroplasty (31.6%), 15 cases of screwing (11%); (iii) In cases of 40 patients (17.9%) hip fracture was managed conservatively, 23 were femoral neck fractures and 17 were intertrochanteric fractures. **Conclusions:** The results of this study demonstrate that hip fracture is growing challenge in Hue University Hospital. The conservative approach is still high in people who could not be operable due to severe medical conditions as well as for patients with economic difficulties. Over 70% of the hip fractures in people 70+ are caused by osteoporosis. The number of hip fracture is increasing in the following years, most likely due to the increase in the prevalence of osteoporosis. Early detection and prevention of osteoporosis should be addressed, particularly in high risk population. More aggressive surgical approach should be implemented in order to improve the quality of life in patients with hip fractures.

**Key words:** Hip fracture, surgical intervention.

## 1. BACKGROUND

Hip fractures (including femoral neck and intertrochanteric fractures) have severe consequences for many older people, and expenditures for their care are significant. Annually, more than 300,000 people in the United States fracture a hip. The great majority are age 50 and over, and half are age 80 and over. A hip fracture that occurs in the context of a low-energy trauma

constitutes a fragility fracture. It represents the most serious complication of osteoporosis and the most severe form of osteoporotic fracture. Survival and quality of life decrease significantly following hip fracture and five-year excess mortality increases by about 20%. Elderly patients with previous history of hip fracture are at very high risk of further fractures: a 2.5-fold increased risk of vertebral fracture and 2.3-fold risk of future hip fracture.

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## 2. AIM

This study aimed to review the clinical findings and surgical intervention of the hip fracture in 5 years at the Hue University Hospital in Vietnam, and to find the strategy for future hip fracture management and prevention.

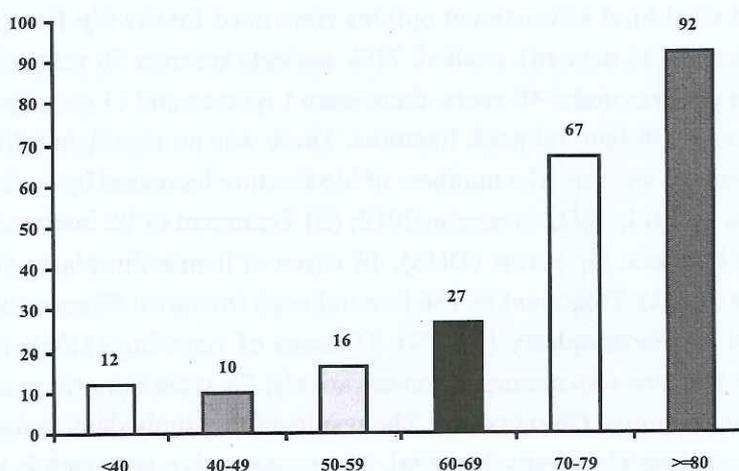
## 3. METHODS

The patient data was collected retrospectively. All patients, in a period of 5 years, from Jan 2008 to December 2012, suffered either from

intertrochanteric or femoral neck fractures. The numbers of patients are gathered separately for each year, as well as age groups (under 40, 40-49, 50-59, 60-69, 70-79, older). The study also separates males and females by the mentioned age-groups. We analyzed what kind of treatment options were used for the hip fracture, osteosynthesis, conversation, or replacement surgery were performed for hip fracture treatment. The other factors such as pre-operational comorbidities, the complications during hospital stay are also being parts of the study.

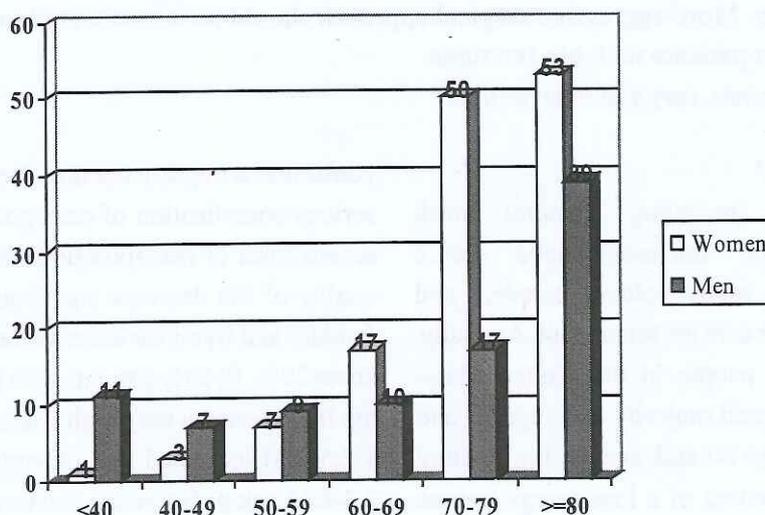
## 4. RESULTS

### 4.1. Age



The great majority of these fractures (71 percent) occurred in people age 70 and over, and most occurred in very old people: 41.1 percent occurred in people age 80 and over. As the Vietnam population ages and the number of very old people increases, the number of hip fractures will also increase.

### 4.2. Gender



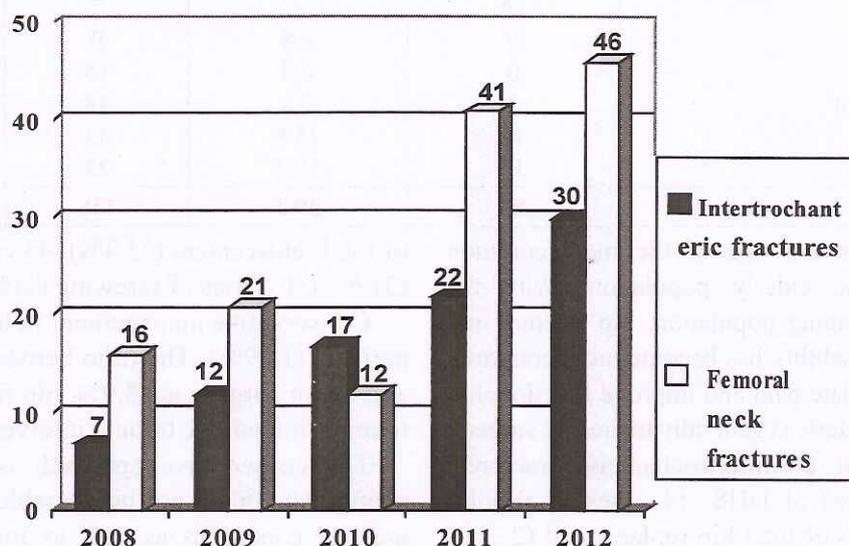
The data of 224 patients was from a 5-year period, 103 women and 56 men patients are over 70 years old ( $p < 0.05$ ).

### 4.3. Fracture location

Year	Fracture location	Intertrochanteric fractures		Femoral neck fractures	
		n	%	n	%
<40		5	5.7	7	5.1
40-49		3	3.4	7	5.1
50-59		7	8.0	9	6.6
60-69		8	9.1	19	14.0
70-79		23	26.1	44	32.4
≥ 80		42	47.7	50	36.8
<b>Total</b>		<b>88</b>	<b>39.3</b>	<b>136</b>	<b>60.7</b>

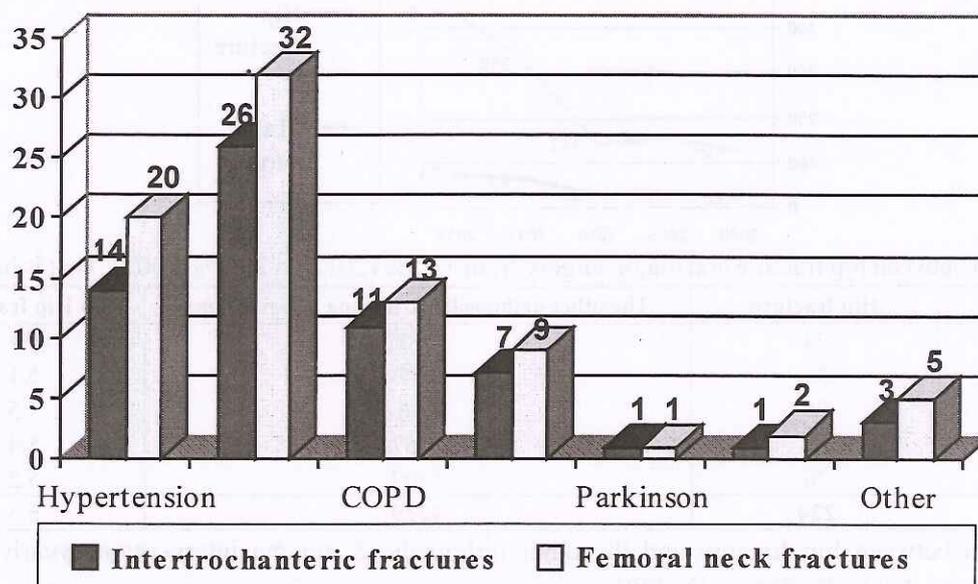
There were 88 intertrochanteric and 136 femoral neck fractures. There was no significant difference in the two fractures between men and women.

### 4.4. Numbers separately for every year



The numbers of hip fracture increased by each year, 29/224 cases in 2010, 63/224 cases in 2011, 76/224 cases in 2012.

### 4.5. Preoperative comorbidities



Preoperative comorbidities: heart diseases 58 cases (25.9%), hypertension 34 cases (15.2%), COPD 24 cases (10.7%), diabetes 16 cases (7.1%). Pre-existing medical problems are often the facilitating factors for fractures and important determinants for morbidity, mortality, and final outcome in patients with hip fracture. Cardiopulmonary and neurological disorders are the most frequent medical diseases in these elderly hip fracture patients. The presence of ischemic heart disease, heart failure, cardiac

arrhythmia, hypertension, chronic obstructive airways disease, pneumonia, or cerebrovascular disease confer the most risk for complications and difficulties during anesthesia, surgery, immediate postoperative recovery, and rehabilitation. Other major diseases include diabetes, cataract, dementia, depression. Adopting a multidisciplinary approach to management with consequent attention to these conditions during the perioperative period may reduce postoperative complications and mortality.

#### 4.6. Treatment

Fracture location Treatment	Intertrochanteric fractures		Femoral neck fractures	
	n	%	n	%
DHS	49	55.7	7	5.2
Plate	6	6.8	0	0.0
Screw	0	0.0	15	11.0
Total replacement	2	2.3	48	35.3
Bipolar	14	15.9	43	31.6
Conservative	17	19.3	23	16.9
<b>Total</b>	<b>88</b>	<b>39.3</b>	<b>136</b>	<b>60.7</b>

Hip fractures are one of the most common fractures in the elderly population. With the increase in the aging population, hip fracture and its associated disability has become more common. In order to alleviate pain and improve function, hip fracture in the elderly is generally treated by surgery.

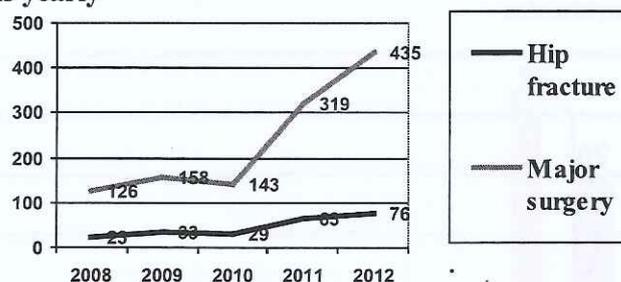
Treatment of 88 intertrochanteric fractures: 49 cases (55.7%) of DHS, 14 cases of Bipolar (15.9%), 2 cases of total hip replacement (2.3%). Treatment of 136 femoral neck fractures: 48 cases

of total replacement (35.3%), 43 cases of Bipolar (31.6%), 15 cases of screwing (11%).

Conservative management in hip fracture: 40 patients (17.9%). The ratio between hip fracture and major surgery is 18.9%, hip fracture and the other orthopedic & trauma interventions is 5.3%.

The conservative approach is still high in people who could not be operable due to severe medical conditions as well as for patients with economic difficulties.

#### 4.7. The ratio between hip fracture and major surgery, hip fracture and the other orthopedic & trauma interventions yearly

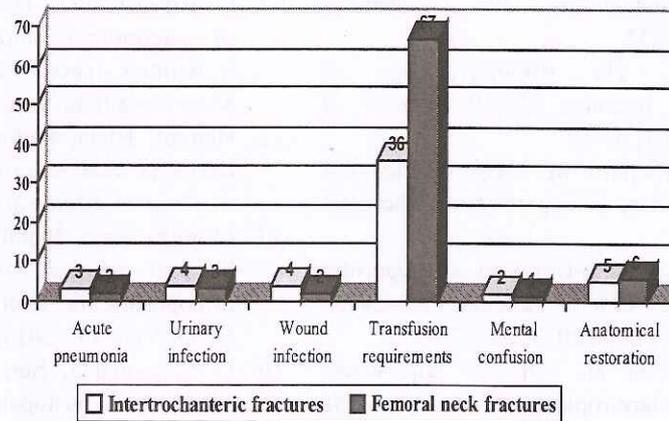


The ratio between hip fracture and major surgery from 17.5% (2012) to 20.8% (2009). That is high ratio.

Year	Hip fracture	The other orthopedic & trauma interventions	% Hip fracture
2008	23	512	4.4
2009	33	645	5.1
2010	29	636	4.5
2011	63	1067	5.4
2012	76	1369	5.2
<b>Total</b>	<b>224</b>	<b>4229</b>	<b>5.3</b>

The ratio between hip fracture and the other orthopedic & trauma interventions yearly at Hue University from 4.4% (2008) to 5.4% (2011).

#### 4.8. Postoperative complications



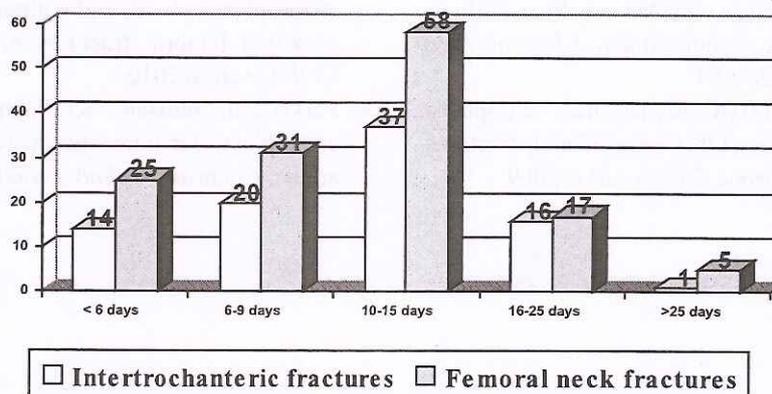
Postoperative complications: transfusion requirements 103/184 cases (55.9%), anatomical restoration 11 cases (5.9%), urinary tract infection 7 cases (3.8%), wound infection 6 cases (3.2%), mental confusion 3 cases (1.6%).

Anatomical restoration : shortening of the leg

(of more than 2 cm), external rotation deformity (of more than 20 degrees).

Superficial wound infection (infection of the wound in which there is no evidence that the infection extends to the site of the implant).

#### 4.9. The hospital length of stay



The average hospital length of stay (LOS) for the patients was  $11.84 \pm 25.9$  days. All patients received systemic rehabilitation of limb function after surgery to recover the ability to independently get in and out of bed, move to and from a place of eating, handle bathroom visits, and walk with a walking aid at home.

#### 5. CONCLUSIONS

The results of this study demonstrate that hip fracture is one of the challenges in Hue medical university hospital. The increased number of hip fracture is higher in the following years, most likely due to the increase in the prevalence of osteoporosis. Over 70% of the hip fracture in

people 70+ are caused by osteoporosis. Early detection and prevention of osteoporosis should be addressed, particularly in high risk population. Everyone with high risks of osteoporosis should attempt to modify their lifestyle, diet... to minimize their risk of fracture. In addition to drug therapy, exercise, and Calcium it is important to understand the household safety to prevent fall. The conservative approach is still high in people who could not be operable due to severe medical conditions as well as for patients with economic difficulties. Of these, quality of life, fracture care, pain control, financial support should be assisted by health professionals and public health.

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