

**OUTCOME OF FRACTURE NECK OF FEMUR
TREATED BY REPLACEMENT SURGERY IN
THE ELDERLY**

By

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ACKNOWLEDGMENT

To

My Dearest Father

Mr Alphonse Decruz (PPN)

and

My Loving Wife and Daughter

Sharon Jasmin and Ellysha Naomi

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ABSTRACT

ABSTRAK :

Pendahuluan

Dalam era yang baru ini, kita akan melihat peningkatan lingkungan hidup seseorang dan dengan itu bertambah populasi generasi tua .Kepatahan tulang yang berkait rapat dengan Osteoporosis akan meningkat juga dan dengan itu akan mengakibatkan jumlah peningkatan morbiditi dan kematian yang agak ketara . Jumlah insiden kepatahan tulang pinggul di Malaysia adalah 88 lelaki dan 218 wanita dalam 100,000. orang (NOF 2005)

Rawatan surgikal yang optima bagi kepatahan bahagian leher tulang pinggul untuk pesakit yang tua yang mempunyai osteoporosis masih ada banyak kontroversi .Pilihan yang ada termasuk pembedahaan ganti sendi (Hemiarthroplasti ,Bipolar Hemiarthroplasti dan Total Hip Arthroplasti) dan Internal Fixation (Screw fixation)

Kadar kematian adalah dalam lingkungan 14 %- 30% dalam tahun pertama pembedahaan .(Kenzora 1984) .Kontroversi sama ada untuk melakukan pembedahhan internal fixation atau ganti sendi timbul bagi pesakit yang berumur 65 tahun keatas. Keputusan ini bergantung kepada lingkungan masa hidup seseorang itu , kaitan dengan kesakitan kronik , kualiti tulang , tahap

fungsi kehidupan pada masa kejadian itu dan tahap fungsi yang dijangkakan bagi pesakit itu .

Kaedah dan Bahan

Satu kajian retrospektif untuk menganalisa apa yang telah jadi kepada pesakit yang mengalami kepatahan tulang pinggul selepas jatuh atau kemalangan dalam golongan pesakit tua lebih daripada 65 tahun daripada 1hb januari 2001 sehingga 31 hb disember 2005 yang telah menerima rawatan ganti sendi (Unipolar ,Bipolar Hemiarthroplasti) telah diadakan di Hospital Universiti Sains Malaysia

Kajian ini telah dilakukan melalui perjumpaan pesakit di Klinik Otopedik atau melalui panggilan telefon bertemubual dengan pesakit itu sendiri atau orang yang menjaganya dengan menggunakan Harris Hip Score (Apendik 2).Jumlah bilangan pesakit yang mengalami Osteoporosis juga dikaji siasat dengan menggunakan Singh Index (Apendik 3). Sebanyak 45 pesakit telah memenuhi kriteria kajian ini .

Analisis

Semua parameter telah dianalisis dengan SPSS versi 12.0.1 (2007). Data data yang didapati dari kajian ini telah melalui analisis diskriptif dari segi corak sosiodemografik.

Keputusan

Para pesakit berumur antara 65 hingga 89 tahun dengan purata 75.13 tahun. Kebanyakan pesakit adalah wanita 39 orang (86.7%) memberikan nisbah lelaki-perempuan sebanyak 1 dalam 6.

Prestasi fungsi keseluruhan , 7(15.6%) pesakit mendapat markah yang terbaik (90-100), 13(28.9%) mendapat markah baik (80--89), and 11(24.4%) mendapat markah yang sederhana (70-79), 3(6.7%) pesakit mendapat markah yang kurang memuaskan (60-69) dan 1 (2.2%) terdiri daripada golongan gagal (<60), 6 pesakit (22.2%) didapati tidak layak untuk pemberian markah ini .

Sebanyak 68.9 % pesakit mendapat markah keseluruhan yang memuaskan .Pesakit yang telah menjalani pembedahaan Bipolar mendapat markah yang baik dan mendapat fungsi seharian yang lebih baik dibandingkan dengan yang telah dibedah dengan Unipolar Hemiarthroplasti .11 dari jumlah 16 pesakit dapat kembali ke tahap sebelum kejadian kepatahan sebagai ambulator komuniti .

Pesakit yang berjalan tanpa bantuan sebelum kepatahan didapati mendapat fungsi yang lebih baik banding dengan pesakit yang memerlukan bantuan untuk berjalan sebelum kepatahan. Hanya separuh (50 %) pesakit dapat kembali ke tahap ambulatori sebelum kepatahan tersebut sebagai ambulator komuniti .

Tahap Osteoporosis dikaji dengan menggunakan Singh Index 33 pesakit (73.3%) telah jatuh dalam lingkungan osteoporosis yang ketara dengan Gred 1 (2), Gred 2 (9) ,gred 3 (22) pesakit . Dalam bulan yang pertama 2 (4.4 %) pesakit telah meninggal dunia dan seterusnya 7 (15.6 %) pesakit telah meninggal dunia dalam tahun pertama selepas pembedahaan

Kesimpulan

Mengenai prestasi fungsi keseluruhan pembedahaan ,Pesakit ,yang dibedah dengan Bipolar Hemiarthroplasti menunjukkan prestasi yang lebih baik dengan peratusan 68.75% adalah dalam lingkungan terbaik dan baik banding dengan unipolar hemiarthroplasti.11 dari 16 kes bipolar kembali ke status asal mereka iaitu ambulator komuniti .

Terdapat kaitan antara incident kepatahan tulang pinggul dan Osteoporosis. Dalam kajian ini 73.3% pesakit menunjukkan bahawa mereka mengalami osteoporosis yang ketara .Ini memberi pandangan atau sokongan kepada pilihan pembedahaan ganti sendi untuk kes kes Garden jenis 3 dan 4

Peratusan kadar kematian dalam kajian ini adalah 15.6 % dalam tahun pertama selepas pembedahaan .Ini adalah dalam lingkungan yang boleh diterima jika dibandingkan dengan kajian kajian lain yang mempunyai kadar kematian setinggi 30 %.

ABSTRACT :

Introduction

In the new millennium we expect to see significant increase in life expectancy, hence an increase in elderly population. Osteoporotic related fractures such as femoral neck fractures are expected to be on the rise in incidence and carry significant morbidity and mortality .The incidence of hip fracture in Malaysia is 88 and 218 per 100,000 men and women respectively (NOF, 2005).

The optimal surgical treatment of displaced femoral neck fractures in elderly with Osteoporosis remains controversial. Surgical options include prosthetic replacement (arthroplasty) and internal fixation. Arthroplasty options include hemiarthroplasty, bipolar arthroplasty, and total hip arthroplasty.

The mortality rate ranged from 14% - 30% in the first year(Kenzora 1984). The decision of whether to internally fix or replace a displaced femoral neck fracture is based on life expectancy, the presence of chronic disease, bone quality, and level of function at the time of fracture, as well as on expected function.

Materials and Methods

A retrospective study to assess the outcome of traumatic fracture neck of femur in the elderly aged above 65 years, from 1st January 2001 to 31st December 2005 treated by replacement arthroplasty (Unipolar or Bipolar Hemiarthroplasty), was conducted in Hospital Universiti Sains Malaysia. Outcome was scored via follow up at Orthopaedic clinic or telephone interview from the patient or primary care giver using the Harris Hip score (Appendix 2). Prevalence of Osteoporosis in these patients was also reviewed using Singh Index (Appendix 3). There were 45 cases of traumatic neck of femur fracture treated with hemiarthroplasty or Bipolar Hemiarthroplasty that met the criteria for this study

Analysis

All parameter was analysed using SPSS Version 12.0 .1(2007). All data obtained from this study underwent descriptive analysis with regards to sociodemographic pattern.

Results

The mean age was 75.13 years (range, 65 to 89 years). There were 39 women (86.7%) and 6 men (13.3%). Out of these 45 patients, 15 (50 %) had returned to their pre-morbid ambulatory status.

Functional Outcome , 7(15.6%) patients obtained a Harris Hip Score of excellent (90-100), 13(28.9%) obtained a score of good (80--89), and 11(24.4%) obtained a score of fair (70-79) ,3(6.7%) obtained a score of poor (60-69) and 1 (2.2%) obtained scores of failed (<60),6 represented (22.2%) patients who were not amenable for scoring. A total of 68.9 % of patients had a cumulative fair HHS score, which represented good functional outcome .Patients who had Bipolar replacement had better functional outcome .11 out of 16 patients returned to their pre-morbid status of being community ambulators and fared well in the Harris Hip Scores .

Patients who were walking independently before trauma had a better outcome than those who needed aid to walk. Only half (50%) of the patients who were initially community ambulators returned to their pre-morbid status .

The degree of Osteoporosis was assessed using the Singh index . 33 patients (73.3%) had significant established osteoporosis with Grade 1 (2 patients),Grade 2 (9 patients) grade 3 (22 patients) respectively. Within 1

month of surgery , 2 (4.4 %) patients had died and subsequently 7 (15.6%) had died after 1 year post operatively.

Conclusion

The functional outcome of Hemiarthroplasty was 68.9% of patients obtaining good results which is acceptable and among these cases patients who underwent Bipolar Hemiarthroplasty showed better outcome with 68.75% having excellent to good outcome as compared to Unipolar Hemiarthroplasty . 11 out of 16 cases had returned to their pre-morbid status as community ambulators . Post operative functional outcome in terms of ambulation showed 50 % of patients returning back to their pre-morbid ambulatory status

There was a definite correlation between the incidence of fracture neck of femur and Osteoporosis. In this study, 73.3 % of patients showed evidence of established Osteoporosis. This would support the decision to choose Replacement Arthroplasty rather than Internal fixation in Garden type 3 and 4.

The mortality rate in this study was 15.6 % within the first year of operation which is within an acceptable range as compared to other studies which rates was as high as 30 % .

CHAPTER 1

INTRODUCTION

1. INTRODUCTION :

Fracture neck of femur consist of the majority of the fractures occurring around the hip .It curtails a large group of elderly and frail patients which as we all know is on the rise as the gediatric populations increases with time. Many debate and controversies surround neck of femur fractures,especially intracapsular type.

There are several options in terms of treatment with each having its advantage and disadvantages.The main controversy lies in the decision making for the surgeon,whether to internally fix the fracture or to do a prosthetic replacement.There are certain considerations that are to be addressed like the quality of the bone , the age of the patient , the premorbid ambulatory status of the patient , assossiated medical illness , the type of fracture and classification before the decision is made.



However even with the these considerations and optimal treatment offered , the outcome is still not in favour for a portion of these patients.From previous studies the mortality rate after 1 year is 14%-30%.(Kenzora, 1984). Most of these patients do not return to their premorbid ambulatory status which reflects of their functional outcome.

Given these serious consequences, it is vital to detect and appropriately treat patients with hip fracture. This study looks upon the functional outcome of

these fractures using the most common functional outcome measure that is the Harris Hip Score with special regards to prevalence of osteoporosis in these fractures and mortality rate that eventually takes place in some percentage of these patients.

The significance of osteoporosis is another factor that needs to be addressed in these patients are also reviewed which would shed some light as to the choice of treatment and outcome in these patients

CHAPTER 2

**LITERATURE
REVIEW**

2. LITERATURE REVIEW

2.1.0 Outcome of Neck of Femur Fracture treated by replacement surgery in the elderly

2.1.1 General

In the new millennium we expect to see significant increase in life expectancy, hence an increase in elderly population. Osteoporotic related fractures such as femoral neck fractures are expected to be on the rise in incidence and carry significant morbidity and mortality .Femoral neck fractures is the most common location for a hip fracture, accounting for 45% to 53% of all hip fractures(Robinson, 1995).The femoral neck is the region of the femur bounded by the femoral head proximally and the greater and lesser trochanters distally.

The prognosis for each of the three major categories of hip fractures is entirely different. Intertrochanteric fractures usually unite if reduction and fixation are properly done, and, although malunions may be a problem, late complications are rare. A wide area of bone is involved, most of which is cancellous, and both fragments are well supplied with blood. Fractures of the neck of the femur are intracapsular with comparatively little cancellous bone with a periosteum that is thin or absent.