



Study Of Functional Outcome In Total Hiparthroplasty For Displaced Neck Of Femur Fracture In Elderly Age Group Individual

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Abstract

Introduction Total hip Arthroplasty is a surgical procedure aimed to relieve the pain associated with hip joint pathology, and to maintain stability and mobility of the hip joint.The incidence of neck of femur fracture is increasing in elderly age group which

contributes to the main injury causing mortality and morbidity.

Materials & Methods Its a Prospective Study conducted in a tertiary care hospital where 20 patients were available fwith their previous operative records, x ray films and follow up papers.Then digital x-ray of hip joint with AP view was done. Then the functional assessment outcome was made using Harris Hip scoring system

Results The functional outcome of total hip arthroplasty for fracture neck of femur was graded excellent, good, fair and poor according to the Harris Hip score. In our studies Harriship score 91-100 (Excellent), 81-89(good). Our results were comparable with other studies

Conclusion Total hip arthroplasty in elderly patients with traumatic fracture neck of femur has better functional outcome in terms of pain free life and returning back to their normal activities and in turn for the society

Keywords: NIL

Introduction

Total hip Arthroplasty is a surgical procedure aimed to relieve the pain associated with hip joint pathology, and to maintain stability and mobility of the hip joint.The incidence of neck of femur fracture is increasing in elderly age group which contributes to the main injury causing mortality and morbidity. Due to increased incidence of osteoporosis and increased longevity of the individual, the fracture is encountered more commonly⁽¹⁾.

The Total hip arthroplasty field is a ever evolving one. Philip Wiles in England is thought to have done the first THA in 1938.Then this procedure was further developed by Mc Kee and Farrar. In 1960 Sir John Charnley created artificial hip joint design by using biomechanical principle of hip joint functions⁽²⁾. He also quoted 55 years ago “Neither surgeons nor engineers will ever make an artificial hip joint which will last for more than 30 years”. Charnley’s basic concept continues to be valid⁽²⁾.

Materials and Methods

Its a prospective study of 20 patients with fracture neck of femur admitted in a tertiary care centre from December 2018 to July 2020. All patient of age >45 irrespective of sex with displaced neck of femur fracture were included in the study. Those patients with congenital deformity of hip, unable to walk, patient aged less than 45 years, patient with other associated femur fracture and patients with pathological fracture were excluded from the study.

20 patients were available for follow up with their previous operative records, x ray films and follow up papers. All these patients underwent standard laboratory and clinical evaluation which includes briefly about their age, sex, address, routine investigation and their clinical history which was done preoperatively. Then digital x-ray of hip joint with AP view was done. The aim of the study was to study the functional outcome of the patients.

Discussion

Patient's clinical history and examination was done. The nature of injury, vascularity of the limb, ambulatory status of patient was assessed. In radiological assessment the radiograph of pelvis with bilateral hip AP was done for all patients to evaluate the structural integrity of the acetabulum, to determine the size of acetabulum and femoral canal bone stock of acetabulum. Then template was done for femur and acetabular components. The anteversion and cup size of acetabulum was determined. For the femoral side, using a template, stem size of the femur, vertical and horizontal offset was determined. The main objective of the pre-op planning was to obtain the restoration of abductor moment arm, centre of rotation of femoral head located in anatomical position and to restore the limb length⁽³⁾.

The hip is abducted postoperatively to approximately 15 degrees while the patient is recovering from anesthetic drug using triangular pillow to maintain the hip in abduction.

After 24 hours, post-operative x-rays are taken. Then the patient were started static quadriceps exercises, ankle and knee mobilization. Postoperative dressing was done on day two and then gait training was started using a walker with weight bearing to tolerance based on the prosthesis. Drain was removed

post operatively 24 to 48 hours after surgery and drain tip was sent for culture sensitivity.

Deep vein thrombosis prophylaxis was given for first five days after surgery in the form of low molecular weight heparin. After the suture removal patient was discharged and reviewed after two week.

The following instruction were given to the patients on discharge not to sit cross legged, to avoid using Indian toilet and not to cross the lower limb across midline of the bed.

Results

Follow up was done at 1 month, 3 months, 6 month and after 1 year and then at yearly interval. Patient was followed up for a minimum of six months. Medical history and physical examination is done during each visit. The range of movement and deformity were measured using goniometer⁽³⁾. Then functional outcome was evaluated by using Modified Harris Hip Score. In this score, each question is awarded a certain number of points for a total of 100 points. If the score is 90-100 it shows excellent results, 80-90 being good, 70-79 being fair, and 60-69 being poor, and below 60 a failed⁽⁵⁾. The radiograph was used to compare with the one taken at the time of the last follow up in order to determine total wear, the annual wear rate, fixation and the presence, location and extent of osteolysis.

This study involves patients above 45 years of age. The eldest patient to undergo total hip arthroplasty was 78 years. Our study shows female preponderance with females being 12 in number and male being 8 in number similar to Seth *et al*⁽⁶⁾ studies.

Left side was most commonly affected than the right side there was 11 patient with left side fracture and 9 patient with right side fracture.

On radiological examination, there were 13 patients with subcapital fracture and 7 patients with transcervical fracture. Seventy percentage of the patient suffered fracture following household fall and 30 percentage suffered fracture after being involved in RTA. Seventy percentage of the patient suffered fracture following household fall and 30 percentage suffered fracture after being involved in RTA akin to Shah *et al*⁽⁵⁾

Out of 20 patients 18 patients walks without support and only two patients use cane for very long walk.

The functional outcome of total hip arthroplasty for fracture neck of femur was graded excellent, good, fair and poor according to the Harris Hip score. In our studies Harris hip score 91-100 (Excellent), 81-89(good)⁽³⁾.

The observation made regarding the leg -length discrepancy is shown in table chart. It was ranging from 0.5-1.5 cm.

LEG LENGTH DISCREPANCY	FREQUENCY	PERCENTAGE
NIL	8	40
0.5	4	20
1.0	8	40
1.5	0	0
Total	20	100

Conclusion

Fracture neck of femur is an unsolved enigma for an orthopedic surgeon. Various results were obtained with various modalities of the treatment which will include hemiarthroplasty, total hip replacement and osteosynthesis. Since osteosynthesis is not a very good idea for elderly patient a secondary procedure may be required. So prosthetic replacement has been popular among the choices. In this, total hip arthroplasty for displaced neck of femur fracture is advocated as the benefit of this procedure outweighs the risk rate.

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