



A Study on Austin Moore's Prosthesis: Pros and Cons

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Abstract

Fractures of neck femur is common fractures in elderly persons. It has always been a challenge for orthopaedic surgeons and it is associated with various medical co-morbidities. Unipolar prosthesis is still extensively used in developing countries in low demanding patients. This study was undertaken to evaluate the functional and radiological outcome of geriatric treated with Austin Moore's prosthesis.

Method: Geriatric patients with femoral neck fractures, managed with hemiarthroplasty using Austin Moore's prosthesis between March 2019 to March 2021 were included in this study. The patients were called up once and were analysed clinically using the Harris hip score. Radiological assessment was done on the Antero-Posterior & Lateral radiographs of the Hip to look for seating of collar of the prosthesis on the calcar, any degenerative change over the acetabulum, enlargement of the medullary canal, any degenerative change over the acetabulum, subsidence lack of ossification in the fenestration hole of prosthesis & osteolysis along the stem of prosthesis.

Results: 50 patients fulfilled the inclusion and exclusive criteria and were included in the study, out of which 7 expired and 3 patients didn't turn up for the follow-up. Remaining 40 Patients were included in this study. Mean duration of follow-up in our study was 2yrs. 70% Showed good condition while 4% showed poor Harris hip score. Radiologically 24 Patients showed prosthesis collar seating over calcar while 5 patients showed acetabulum changes, 06 had enlarged medullary canal, 05 patients showed osteolysis along the stem of prosthesis and 20 patients showed lack of ossification in the prosthesis fenestration hole. Though the unipolar Austin's Moore's prosthesis faces criticism for causing degenerative arthritis of hip, a year or two year after surgery. Majority of patients showed excellent to good results.

Keywords: Fracture neck of femur, Harris Hip Score, Hemiarthroplasty, Austin Moore's Prosthesis, Degenerative Arthritis, Calcar, Bi-Polar & THR.

Introduction

Orthopaedics surgeons often encounter elderly patients with fracture neck of femur which is usually associated various medical co-morbidities.

Owing to an increase in the prevalence of osteoporosis in elderly patients, the incidence and the problem following fracture neck femur are on a rise. The incidence of hip fractures differs

throughout the world. 1.5million of hip fracture occurs worldwide per year. In elderly, hemiarthroplasty is the preferred method of the treatment without prolonged recumbency.

Unipolar prosthesis like, Judet, Thompson and Austin Moore were extensively used in 1950's for the treatment of various hip morbidities & are still used in developing countries.

Complications of Austin Moore's Prosthesis -

Following are Complications-

- Persistent pain
- Protrusion-acetabuli due to which many surgeons opt for bipolar or total hip-replacement.
- It is noted that the motion of the head of prosthesis over the weight bearing surface of acetabulum leads to degenerative changes over the hip joint causing secondary osteoarthritis
- Painful hip range of motion.

The factors that are usually considered in choosing the type of prosthesis are

- The general medical condition of the patient,
- Age of the patient,
- The type of fracture,
- Availability of amenities in the health care delivery system,
- Socioeconomic status of the patient.

The study was aimed primarily to evaluate the functional and radiological outcome in old patients of femoral neck fractures managed with Austin Moore's prosthesis.

Material and Methods

This was retrospective study conducted in the Department of Orthopaedics. Elderly patients (>60yrs) of fracture of neck of femur managed with hemiarthroplasty using Austin Moore's prosthesis & were operated at our hospital between March 2019 to March 2021. Patients with Poly trauma, presently non ambulatory selected. The data pertaining to patients of fractured neck femur managed with hemiarthroplasty using the Austin Moore's prosthesis was recovered from the

medical record room of our hospital. The patients fulfilling the inclusion criteria were called up once after 2 years of surgery. For functional assessment Harris hip scoring system (**HHS**) was used, and for radiological assessment various parameters like seating of the collar of the prosthesis on the calcar, enlargement of the medullary canal, any degenerative changes over the acetabulum, osteolysis along the stem of prosthesis & lack of ossification in the fenestration hole of prosthesis. The Harris hip score (HHS) is a clinician-based outcome measurement in cases with hip pathology. It includes pain severity, function which is assessed by daily activities and gait, the absence of deformity (Adduction internal rotational, leg length discrepancy, hip flexion and range of motion).

Radiological Evaluation

1. Prosthetic implantation
2. The position of stem in varus or valgus.
3. Seating of the prosthesis collar on the calcar.
4. Presence of osteophytes over the acetabulum.
5. Any loosening of the Prosthesis.
6. Enlargement of the Medullary Canal.
7. Prosthesis femoral loosening.

Results

50 patients fulfilled the inclusion and exclusion criteria were recruited in the study & of these 7 expired and 3 patients didn't turn up for the follow-up. Remaining 40 Patients were included in this study. The mean follows up of patients (n=40) was 2 years. During radiological assessment seating of the prosthesis. Collar seating over calcar were 60% (n=24).

Discussion

In this study, out of 40 patients of fracture neck of femur, the average age was found to be 68.57 in which majority of patients were in the age group between 60-64 years (n=12) followed by 65-67 (n=08). There were 20 patients who were more than 70 years of age.

Radiological Evaluation

In our study the basis of radiological assessment of patients, we found that majority of patients 60% has seating of the collar of the prosthesis on the calcar while 10% patients showed degenerative changes over the acetabulum, 5% had enlarged medullary canal, 11% had varus pivoting 8% hip showed osteolysis along the stem of prosthesis. 64% of patients i.e.; majority were found to have a good Harris hip score followed by 20 % of patient showed fair and least i.e.; 3% of patients showed poor Harris hip score.

Conclusion

In the follow up, most of the patients showed excellent to good results while very few showed poor results. Although most of the patients had difficulty in squatting, which was considered as an essential requirement as per in the scenario. On the basis of our results, we conclude that the use of Austin Moore's prosthesis is a good treatment of choice in old age group with femoral neck fractures.

Hemiarthroplasty using Austin Moore's prosthesis is a known procedure among Indian Orthopaedics surgeons is because of following reasons –

- 1) Less time consuming,
- 2) Less expensive,
- 3) Easily available,
- 4) Is performed at a limited resource centre.

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