ONLINE ISSN :3007-309X
PRINT ISSN :3007-3081

Journal of Medical & Health Science Review

FUNCTIONAL OUTCOME OF CEMENTED TOTAL HIP REPLACEMENT IN OVER 55 YEARS OLD PATIENT PRESENTING WITH FEMORAL NECK FRACTURE

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ARTICLE INFO

Keywords:
Hip replacement, Functional outcomes, Harris Hip Score (HHS), Preoperative evaluation, Postoperative evaluation

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ABSTRACT

Background: Because of their high rates of morbidity and death, displaced femoral neck fractures in older individuals provide a serious orthopedic issue. Improving patient outcomes and quality of life requires effective management of these fractures. When compared to alternative therapies, total hip arthroplasty (THA) is thought to be a favorable surgical procedure that offers better functional results and fewer complications.

Objective: The goal of total hip replacement is to ascertain the early functional result for older patients who have displaced femoral neck fractures.

Methods: From December 2024 to April 2025, sixty patients with displaced femoral neck fractures, ages 50 to 80, received complete hip replacements at , Gujranwala Teaching Hospital Gujranwala (GTH)as part of this descriptive study. Radiographs and several blood tests were part of the preoperative evaluations. Six months after surgery, the Harris Hip Score (HHS) was used to gauge functional results. SPSS version 26 was utilized for data analysis, and preoperative and postoperative HHS ratings were compared using the paired t-test; $P < 0.05$ was deemed significant.

Results: Results -- The sixty patients' average age was 65±9.08 years. At the six-month follow-up, the mean preoperative HHS of 72.55±10.5 had dramatically increased to 86.65±8.65 ($P = 0.0001$). and three individuals (5%), hip dislocations. Fifty-five patients (91.7%) showed no signs of problems.

Conclusion: For older patients with displaced femoral neck fractures, total hip arthroplasty is a successful operation that shows a low incidence of complications and notable improvements in functional results.

INTRODUCTION

A major orthopedic concern that primarily affects the elderly is displaced femoral neck fractures. Significant functional disability and unfavorable health consequences result from this fracture, which is typified by the displacement of shattered bone fragments in the upper portion of the thigh bone (1). Due to comorbidities, age-related decreases in bone density, and an increased risk of falls, the older population is especially vulnerable (3). These factors together make treating fractures more difficult. With estimates showing an increase in yearly incidence from 1.7 million to 6.3 million by 2050, femoral neck fractures represent a significant health risk on a global scale (4). Hip fracture risk is doubled by osteopenia, which is defined as a loss in bone mass at the hip of one standard deviation below the norm (5). A multidisciplinary strategy involving orthopedic surgery, geriatric medicine, rehabilitation, and social support is necessary for the effective therapy of displaced femoral neck fractures in older persons (6). Compared to alternative treatment options like internal fixation, total hip arthroplasty (THA) has a number of benefits, including as better long-term results, greater durability, and improved functional recovery. THA offers a complete solution to the problems caused by displaced femoral neck fractures in the elderly by addressing underlying osteoarthritic changes and lowering the risk of further hip-related problems (7,8). Even though THA is effective, in order to maximize results and reduce postoperative problems, it is essential to take into account patient-specific characteristics such comorbidities, bone quality, functional status, and surgical risk (9, 10). A team approach is required when making decisions for THA for older patients who have displaced femoral neck fractures. The need for THA as a successful therapy for these fractures is anticipated to grow as a result of changing demographics and longer life expectancies. In order to improve surgery results and the quality of life for this susceptible patient population, it is imperative that research, innovation, and collaborative care approaches continue. This study's goal was to assess the early functional results of total hip replacement in elderly patients above 55 year who had displaced femoral neck fractures in order to offer evidence-based recommendations for bettering patient care and results in this expanding population.

METHODS

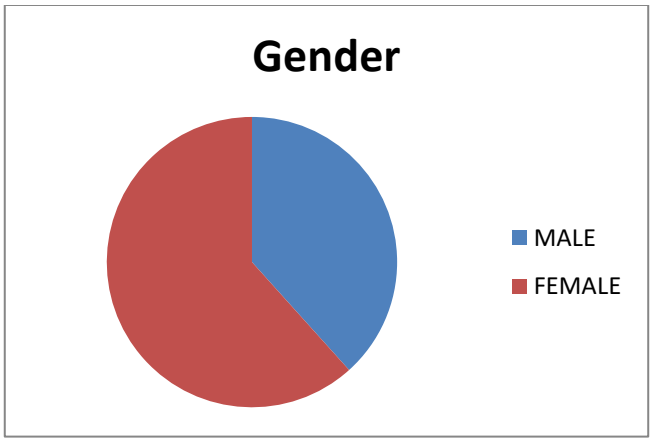
With ethical consent from the hospital, a descriptive study was carried out from December 2024 to April 2025at the Department of Orthopedics, Gujranwala Teaching Hospital Gujranwala (GTH). Sixty elderly patients of either gender, ages 50 to 80, who presented with displaced femoral neck

fractures were included in the study. All patients had a battery of preoperative evaluations before to surgery, which included bilateral hip radiographs, pelvic and chest radiographs, coagulation function tests, complete blood counts, and biochemical markers.

A transgluteal lateral route was used for the surgical treatment in each patient. A cobalt chrome femoral head of the proper size was implanted after a cemented collarless polished tapered femoral component was placed. This femoral head articulated with an acetabular component made entirely of polyethylene cement. Hemispherical templates, which come in 2 mm increments, were used to measure the femoral head size intraoperatively. With an emphasis on early mobilization, rehabilitation medicine doctors were important in helping patients enhance their joint mobility and muscular endurance after surgery. " Six hours after surgery, ankle pump exercises and isometric quadriceps contractions were started. One day later, there were exercises for knee flexion and straight leg elevation, and two days later, walker training. Oral bisphosphonates were administered to all patients as an antiresorptive treatment. At six months, the Harris Hip Score (HHS), a thorough 100-point scoring system, was used to assess the functional outcomes. Range of motion, pain, function, and lack of deformity are all evaluated by this system (11). Version 26 of SPSS was used for data analysis. $P \leq 0.05$ was used as the threshold for statistical significance when comparing the preoperative and postoperative HHS scores using a paired t-test.

RESULTS

The average age of the sixty patients in the research was sixty. Female patients were more common than male patients, according to the gender distribution, indicating that displaced femoral neck fractures are more common in women GRAPH 1. Thirty-nine (65%) of the patients had left-side fractures, whereas 21 (35%) had right-side fractures. The Harris Hip Score (HHS) was used to evaluate the results six months after surgery. Following complete hip replacement, the preoperative HHS of 72.55±10.49 dramatically improved to 86.65±8.65 ($P = 0.0001$). TABLE 1



GRAPH 1

Table 1: Comparison of preoperative and postoperative Harris Hip Score (HHS) score

Harris Hip Score (HHS).	Mean	N	Std Deviation	P value
Preoperative	72.55	60	12.34	0.0001
HSS at 6 months	86.65	60	7.44	

DISCUSSION

Given their high rates of death and morbidity among senior citizens, hip fractures pose a serious threat to medical practice. Hip fractures are predicted to become increasingly common as life expectancy rises and osteoporosis becomes more widespread. Femoral neck fractures that go untreated can cause a number of comorbidities and eventually lead to mortality, which emphasizes the need for surgery to address these injuries in elderly individuals. Although there is ongoing discussion on the best course of treatment, several studies have shown that total hip arthroplasty (THA) provides better functional results and fewer revision surgery rates than hemiarthroplasty (HA). As the senior population grows more active and self-sufficient, THA is expected to be used increasingly frequently for the treatment of femoral neck fractures (12, 13).

The mean age of the sixty patients in this study was 62 years, and there were more female patients than male patients. These results are consistent with a prior study that found that patients were mostly male and that the mean age was 62.37±5.918 years (14). At the six-month follow-up, the study's mean Harris Hip Score (HHS) rose considerably from 72.55±10.49 at baseline to 86.95±8.65 (P = 0.0001). This improvement is in line with results from a different study that showed a noteworthy rise in HHS scores six days, six weeks, and six months after THA (14). Additionally, our findings are supported by a comparative research of THA and HA in older

patients with displaced femoral neck fractures, which found that the THA group had significantly higher postoperative HHS scores (15). At one year after surgery, a randomized controlled experiment likewise showed that the THA group had noticeably higher HHS scores than the HA group (13). Only one patients in this study experienced infections following surgery, and two individuals experienced hip dislocations. These results are similar to those of the previously stated study, which found that most patients had no problems and that just 2.4% of them had hip dislocations and infections (14,16). The credibility of the results is enhanced by the study's strengths, which include a clearly defined patient group and a systematic approach to both the surgical process and postoperative rehabilitation. However, the short follow-up period and comparatively small sample size may not have captured long-term problems and outcomes. Larger cohorts and longer follow-up studies are required to confirm these results and offer more thorough understanding of the long-term advantages and disadvantages of THA in older patients with displaced femoral neck fractures (17–19). The usefulness of THA in enhancing functional results and reducing complications in older patients with displaced femoral neck fractures is demonstrated by this study. Continuous research and innovation in surgical procedures and postoperative care are crucial to improving patient outcomes and the quality of life for this susceptible population, as the need for THA is growing as the population ages (20).

CONCLUSION

In older patients with displaced femoral neck fractures, total hip arthroplasty is a successful solution that shows a low incidence of postoperative complications and dramatically improves functional outcomes as determined by the Harris Hip Score. The procedure's potential to improve this vulnerable population's quality of life is demonstrated by the excellent outcomes. To optimize advantages and reduce dangers, the study's conclusions highlight the need for thorough preoperative evaluations and careful postoperative care. In addition to highlighting the necessity of continued research and innovation to further improve surgical techniques and postoperative rehabilitation protocols, these findings support the wider adoption of total hip arthroplasty in eligible elderly patients, guaranteeing long-term improvements in patient care and outcomes.

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