

A Study To Evaluate Functional Outcome Of Uncemented Primary Total Hip Arthroplasty Operated At Our Center

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Abstract

Background: Total hip arthroplasty (THA) has evolved into a reliable and suitable surgical procedure to relieve pain and restore function among patients with damaged or degenerated hip joints and chronic pain. The purpose of this study was to evaluate outcome in patients after THA operated at our center.

Methods: 150 hips in 115 patients were operated at our center and were included in the study. These patients were evaluated with Harris Hip Score before and after surgery at 1, 3, 12 month and as well as final follow up after surgery.

Results: Out of total 115 patients, 89 were male and 26 were female. The mean age was 38 years in our series with more than 62% patients with less than 40 years. Functional outcome in our series as assessed by Harris Hip score was excellent in 90.5% and good in 9.5%.

Conclusion: THA is an excellent procedure to achieve painless, mobile, stable hip in cases with advanced hip problems.

Keywords: Total hip arthroplasty, Harris Hip Score, Osteoarthritis.

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Introduction

Total hip arthroplasty (THA) has evolved into a reliable and suitable surgical procedure to relieve pain and restore function among patients with damaged or degenerated hip joints [1-3]. Indication for a THA ranges from radiological evidence of joint damage, persistent pain, and/or functional disability that is not adequately relieved by non-surgical treatment to patients with primary osteoarthritis, fractures or rheumatoid arthritis [1,4-6].

The annual number of THA has risen steadily worldwide during the last decades. As the number of primary surgical interventions

grows, the number of revisions is expected to increase [7]. The outcome of a successful THA depends on numerous factors other than the surgery itself. The predictability of the outcomes of THR is excellent in the older age groups, whereas the longevity of the implant in young and active patients still remains unsatisfactory, with failure rates ranging from 20% to 42% [8-10]. We evaluated the outcome of all uncemented THA patients operated at our center to analysis our results and compare it with available literature.

Material and methods

A total of 180 hips were operated with total hip arthroplasty from January 2013 to August 2017 at our center. All patients with in age

group 20 to 70 years operated for uncemented THA who gave written informed consent were included in study. 30 hips were lost to follow up or did not give consent for the study and hence were excluded from the study, making the final cohort of 150 hips in our study.

In all patients a detailed history and thorough examination was done evaluating pain, tenderness, deformity, gait, range of motion, limb length discrepancy, neurovascular status etc. Pre operatively Harris Hip Score and SF-36 Score was also recorded. All patients was subjected to routine blood investigation, Chest X-ray, ECG, X-ray pelvis with both hips and lateral view of involved limb and pre-anesthetic fitness before surgery. Patients were operated spinal or epidural anesthesia in floppy lateral position by surgeons of almost same experience and expertise (fig 1). Postoperatively, all patients were subject to same rehabilitation protocol like active quadriceps exercises, knee and ankle exercises from second post-operative day, weight bearing with support on third day post-operative day and suture removal on 14th day. Regular follow ups were done and at final follow up functional assessment was done, using Harris Hip score.

Fig 1. Intraoperative photos showing position (a) acetabular (b) & femoral (c) implantation



Statistical analysis was done using Statistical Package of Social Science (SPSS Version 22; Chicago Inc., USA). Quantitative variables were compared using mean values and

qualitative variables using proportions. Significance level was fixed at $P < 0.05$.

Results

A total 150 hips in 115 patients were included in study out of which 89 were male and 26 were female. The mean age was 38 years (range 28 to 68 year). 88 % of our cases were less than 50 years and 62 % were less than even 40 years. 38 % of the cases have fixed deformity at the involved hip, among which fixed flexion deformity was commonest seen in 14% of cases. All the fixed deformities were corrected and none of the patients had fixed deformities postoperatively. The most common indication of THA was avascular necrosis of hip, seen in 66.7 % hips followed by rheumatoid and posttraumatic arthritis seen in 10 % each. The mean follow-up was 23 month (range 12 to 48 month)

The mean pre-op Harris Hip Score of 49 (range 28 to 78) improved to 95.07 (range 87 to 98) postoperatively at final follow up. This improved Harris Hip Score was seen as continuous improvement from pre op to regular subsequent visits and at final follow-up which was statistically significant ($p < 0.05$) (fig 2). Mean SF-36 score was reduced from 78.90 ± 6.71 (range 64 to 90) pre-operatively to 40.35 ± 3.67 (range 31 to 49) at final follow up which was statistically significant ($p < 0.05$) (fig 3).

Complication was found only in 4 (2.67 %) patients, with dislocation in one and superficial infection in 3 patients. More than 1 cm limb length discrepancy was seen in 25(16.7%) patients with overall mean discrepancy of 0.24 cm (range 0 to 3cm).

Fig 2. Mean Harris Hip score at follow-up visits

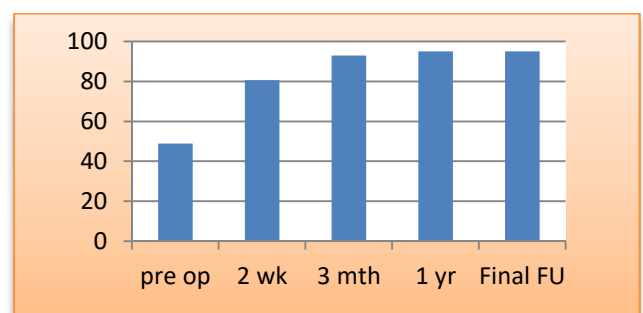
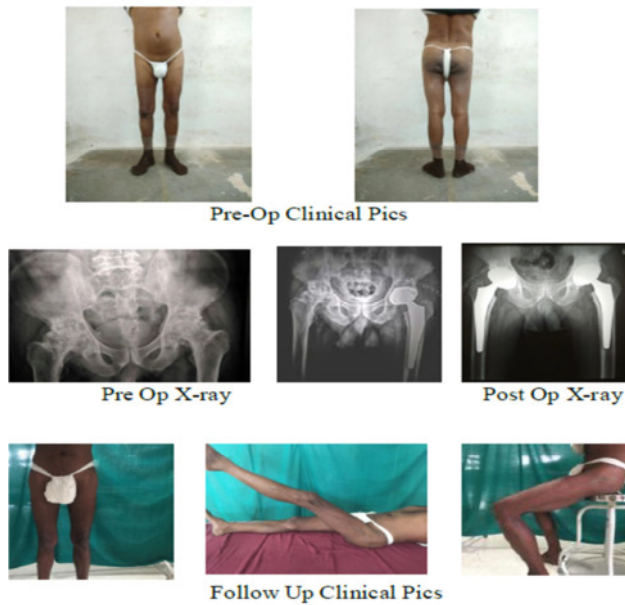


Fig 3. Case of bilateral AVN hip with THA done

Discussion

Despite the exceedingly high rate of success of THA in both short and long term follow up studies; numerous potential complications resulted from this type of reconstructive surgery [2-4]. With the advancements in implant designs, materials, fixation techniques, modern operation theatre facilities etc, the outcome of THA have improved significantly [5-8]. We evaluated functional of THA in 150 hips operated at our center by Harris Hip Score.

THA is no longer confined to elder patients with an increasing number of patients now belong to much younger population. The mean age in our series of 38 years, was much younger than previous studies compared to mean age of 59 (range 55 to 69 years) in reported literature [7-11]. This may also be attributed because more than half of the patients who underwent THA had avascular necrosis, which occurs in young, whereas primary degenerative osteoarthritis which is typical seen in elderly population was primary indication of THA in reported series. Most common indication in our series of avascular necrosis of femur head (66%) was different

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from known reported series which show primary arthritis of hip as main indication needing THA, because primary degenerative osteoarthritis is not seen in this part of the country [7-12].

Harris Hip Score has been widely used as a gold standard tool for the clinical evaluation of patients following THA [9-14]. In our series, the mean pre-op Harris Hip Score improved from 49 to 95.07 at final follow-up, which is seen as statistically significant increment at each follow-up. The higher pre-op harris hip score due to the fact that cases in our study population presented with their complains at a later stage of the disease. The results obtained in our series are similar to those published series [7-14]. The lower incidence of complications like infection and dislocation in our series is due to fact that we followed the protocol strictly for asepsis and component position.

SF - 36 score has been widely used as a quality of life questionnaire for clinical evaluation of patients about their health. In our series mean SF - 36 score was 78 preoperatively and 40 postoperatively. Overall our study shows that outcome of THA done at our center has 90.5 % excellent and 9.5% good results specially in younger age group patients in short term follow-up. But longer studies are needed, especially in younger age group to evaluate the longevity and feasibility of THA in younger patients.

Conclusion

THA continues to be an excellent procedure to achieve painless, mobile, stable hip in cases with advanced hip problems. Proper clinical evaluation, appropriate measures to correct deformity, adherence to protocols and proper rehabilitation is essential to achieve excellent functional outcome.

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