Randomized Controlled Trial Comparing the Outcome of Lateral Versus Posterior Approach for Hemi-Replacement Arthroplasty for Neck of Femur Fracture

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Purpose: Currently, the 2 most commonly used approaches for hemi-replacement arthroplasty of hip are the lateral (Hardinge) approach and the posterior (Moore) approach. The posterior approach is claimed to result in better regain of function as there is less damage to the hip muscles specially the abductors, while the lateral approach has a lower risk of dislocation and better assessment of limb length discrepancy. The main objective of the study was to compare the functional outcome between lateral and posterior approaches for hemiarthroplasty for fracture neck of femur (31B1.1, 1.2, 1.3and 31B2.1, 2.2, 2.3) in adults.

Methods: 50 eligible patients with isolated traumatic displaced neck of femur fracture in adults, presenting during study period of 1 year, were randomized to undergo hemi-replacement arthroplasty either by lateral Hardinge approach (n = 25) with the patient in supine position or by posterior Moore approach (n = 25) with the patient in lateral position. Patients with multiple bone fracture/polytrauma, cognitive impairment, and nonambulatory before the trauma were excluded. Similar dose, duration, and route of prophylactic antibiotics were used for all. They were subjected to the same physiotherapy regime and were evaluated clinicoradiologically at 6 weeks, 3 months, 6 months, and 12 months.

Results: The functional outcome as measured by the Modified Harris Hip Score at 1 year was similar for the patients in both the groups (P>0.05). The hip pain as measured by visual analog scale (VAS) scores at subsequent follow-up visits were similar between them as well (P>0.05). The mean blood loss in lateral approach was 329.8 ± 56.41 mL as compared to 284.2 ± 52.69 mLin posterior approach (P = 0.005). The mean operative time was longer in lateral approach (70.2 ± 10.35 min) than in posterior approach (63 ± 17.32 min) (P = 0.08). The mean head size of the prosthesis used was 44.82 ± 2.99 mm and 44.6 ± 2.23 mm in lateral and posterior approaches, respectively. One patient in posterior approach group had dislocation at 5 weeks postoperatively, which was stable after closed reduction, 1 patient in each group had superficial surgical site infection which resolved on conservative therapy, and 1 patient in lateral approach group had iatrogenic proximal femur fracture during surgery that was managed with encirclase.

Conclusion: Our study showed that there was no significant difference between the 2 approaches for hemi-replacement arthroplasty in terms of mean operating time, hip pain, and functional outcomes.