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Research Article

Functional Outcomes of Total Knee Replacement in Obese and Non-Obese Patients: A Retrospective Comparative Study

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Abstract

Obesity is a growing global health concern and is frequently associated with osteoarthritis of the knee. Total knee arthroplasty (TKA) is the definitive surgical treatment for end-stage osteoarthritis; however, the influence of obesity on postoperative functional outcomes remains controversial. A retrospective study was conducted over a 12-month period involving 50 patients with end-stage osteoarthritis who underwent primary total knee arthroplasty. Patients were divided into obese (n=25) and non-obese (n=25) groups. Functional outcomes were evaluated using the Oxford Knee Score (OKSS), SF-36 score, and range of motion. Both groups showed significant improvement, though non-obese patients demonstrated better functional outcomes and range of motion at 3 months. Total knee arthroplasty significantly improves outcomes in both groups, though obesity may negatively influence recovery and hospital stay.

Introduction

Osteoarthritis of the knee is a major cause of disability worldwide. Total knee arthroplasty has become the gold standard treatment for advanced knee arthritis. The rising prevalence of obesity has raised concerns regarding its impact on postoperative outcomes following TKA. Obesity may influence implant survival, complications, and postoperative functional recovery. This study aims to compare functional outcomes of total knee replacement in obese and non-obese patients.

Materials and Methods

A retrospective comparative study was conducted at Max Super Speciality Hospital, Vaishali over a period of 12 months. Fifty patients undergoing primary total knee arthroplasty were included. Patients were divided into obese (BMI ≥30 kg/m²) and non-obese (BMI < 30 kg/m²) groups with 25 patients in each group. Functional outcomes were assessed using Oxford Knee Society Score, SF-36 score, and range of motion. Patients were followed up at 2 weeks, 6 weeks, and 3 months postoperatively. Postoperative complications and hospital stay were also recorded.

Results

Both groups showed significant improvement in functional scores following surgery. Mean improvement in OKSS at 3 months was higher in non-obese patients (30.76 ± 2.24) compared to obese patients (26.32 ± 8.37; p=0.0006). Final range of motion was also significantly better in the non-obese group (115.4 ± 1.37° vs 109.9 ± 8.11°, $p < 0.0001$). Postoperative complications were more frequent in obese patients (28% vs 12%). Mean hospital stay was longer in obese patients (8.52 ± 1.48 days vs 7.28 ± 1.28 days).

Conclusion

Total knee arthroplasty significantly improves functional outcomes in patients with end-stage osteoarthritis. Although obese patients demonstrate comparatively lower functional improvement and longer hospital stay, satisfactory outcomes can still be achieved. Proper preoperative counselling regarding the impact of obesity on surgical outcomes is recommended.