

Survivorship Free of Total Knee Arthroplasty after Knee Arthroscopy in Patients 50 Years and Older

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INTRODUCTION: Multiple high-level studies have reported on the inefficacy of knee arthroscopy for degenerative knee osteoarthritis (OA). These studies have led to an increased reluctance to offer knee arthroscopy to older patients. The purpose of this study was to assess the arthroplasty-free survivorship of patients over 50 years of age who undergo knee arthroscopy and to assess whether this survivorship is affected by the diagnoses of knee OA or obesity at the time of arthroscopy.

METHODS: The New York Statewide Planning and Research Cooperative System (SPARCS) administrative database from 2010 to 2020 was queried to identify all patients who underwent outpatient knee arthroscopy using ICD-9, ICD-10, and CPT codes for knee arthroscopy. Patients were excluded if they were under the age of 50 at the time of arthroscopy. Demographic variables including obesity, patient age, sex, race, type of insurance, and Elixhauser Score were collected. Whether the patient eventually underwent total knee arthroplasty (TKA) was also recorded. Kaplan Meier survival analysis was used to assess arthroplasty-free survivorship. Subanalysis with Cox proportional hazards models assessing survivorship in the presence of a diagnosis of knee OA and obesity was also performed.

RESULTS: A total of 300,587 patients aged 50 years or older underwent knee arthroscopy over the period of the study. At time of arthroscopy, there were 261,118 without knee OA, and 39,469 patients with knee OA. Additionally, 282,344 patients were not obese, while 18,243 were obese. The initial survivorship rate in the early period following knee arthroscopy remains considerably high at 83.0% at the 5 year mark. However, at the 10-year mark, arthroplasty-free survivorship was only 66.6%. Patients with knee OA had significantly lower arthroplasty-free survivorship than those with knee OA, demonstrating a 73.4% survivorship at 5 years and 44.8% at 10 years vs. a 83.9% survival rate at 5 years, and a 68.1% survival rate at 10-years (HR: 1.77; 95% CI: 1.72-1.83; p < 0.001). Obesity also contributed to lower rates of arthroplasty-free survivorship, with an 83.3% survival rate at 5 years and a 67.1% survival rate at 10 years in non-obese patients compared to a 77.8% survival rate at 5 years and 57.5% survivorship at 10 years in obese patients (HR: 1.39, 95% CI: 1.34-1.45; p < 0.001).

DISCUSSION AND CONCLUSION: While the efficacy of knee arthroscopy of patients over 50 years of age has been challenged, there is a high rate of arthroplasty-free survivorship in the first 5 years. This effect deteriorates at the 10-year mark, suggesting that knee arthroscopy is often not a permanent solution in these patients, and many are eventually destined for TKA. Both knee OA and obesity exacerbate this trend and are risk factors for TKA following knee arthroscopy in patients 50 years and older.

