Osteoporosis May Not Be an Absolute Contraindication for Cementless Total Knee Arthroplasty

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INTRODUCTION:
Cementless total knee arthroplasty (TKA) has received growing interest, particularly in younger populations, due to potential long-term survivability and improved bone preservation. Poor bone stock, as seen in osteoporosis, is considered a contraindication for this technique. This study evaluated whether younger patients with osteoporosis undergoing cementless TKA demonstrate similar 1) implant-related complications, 2) medical complications, 3) readmission rates, and 4) 3-year implant survivability.
METHODS: A retrospective query of a national administrative claims database was performed between 2010 and 2022 for patients who have a diagnosis of osteoporosis and underwent primary TKA. Patients who were less than or equal to 75 years old and underwent uncemented TKA were propensity score matched to controls based on age, gender, obesity, and Charleston Comorbidity Index (CCI), which produced 7,923 patients (1,321 uncemented, 6,602 cemented). Multivariate logistical regressions were used to evaluate the following outcomes: 90-day and 2-year implant-related complications, 90-day post-operative medical complications, and 90-day readmissions. Kaplan-Meier survival analysis was conducted to assess 3-year all-cause revision implant survivability.
RESULTS: There were no statistically significant differences in implant-related complications, medical complications, readmissions, and lengths of stay between cementless and cemented TKA groups. Kaplan-Meier analysis demonstrated statistically similar 3-year survivability between cohorts (cemented = 97.6%, CI 96.6-98.5; cementless = 97.2%, CI 96.7-97.7; $p = 0.472$).
DISCUSSION AND CONCLUSION: Patients with osteoporosis have equivalent medical and implant-related complications as well as 3-year implant survival following cementless TKA compared with a cemented technique. Our results support cementless TKA as a viable option for younger patients regardless of prior diagnosis of osteoporosis. Intraoperative decisions regarding bone quality are still necessary to discriminate between those who are candidates for cementless TKA with those who are not.