Do Breast Cancer Patients Have Increased Risk of Complications after Primary THA and TKA?

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INTRODUCTION: Patients with a breast cancer history can have compromised bone health and increased venous thromboembolism (VTE) risk that could impact results of primary total hip arthroplasty (THA) or total knee arthroplasty (TKA). This study evaluated implant survivorship, complications, and clinical outcomes of those with breast cancer history after primary THA and TKA.

METHODS: Our total joint registry identified patients with breast cancer history undergoing primary THA (n=423) and TKA (n=540). Patients were 1:1 matched based upon age, sex, BMI, procedure (hip or knee), and surgical year to non-breast cancer controls. Breast cancer patients were further analyzed according to metastatic disease history and ongoing hormonal therapy (HT). Implant survivorship and complications were assessed via Kaplan-Meier methods. Clinical outcomes were evaluated via Harris hip scores (HHS) or Knee Society scores (KSS). Mean follow-up was 6 years.

RESULTS: Breast cancer and non-breast cancer patients had similar 5-year implant survivorship free from any reoperation or any revision after THA ($p \geq 0.4$) and TKA ($p \geq 0.3$). Breast cancer patients demonstrated significantly lower survivorship free of any complication after THA (91% vs. 96%, respectively; HR=2, p=0.02). Specifically, the rate of intraoperative fracture was 2.4% versus 1.4% and venous thromboembolism (VTE) was 1.4% versus 0.5% for breast cancer and controls after THA, respectively. Those with metastatic breast cancer history and on HT trended towards the highest risk of VTE (HR=4.4, p=0.1). No significant difference was noted in any complication after TKA in breast cancer patients or subgroups ($p>0.3$). Both breast and non-breast cancer patients experienced similar improvements in HHSs (p=0.5) and KSSs (p=0.2).

DISCUSSION AND CONCLUSION: Patients with history of breast cancer have similar implant survivorship and clinical outcomes after primary THA and TKA. However, there was a 2-fold increased risk of any complication after THA with the highest risk of VTE in patients with metastatic disease history and on hormonal therapy.