

## **Periprosthetic Joint Infections: Is an Ipsilateral Uninfected Total Joint Arthroplasty at Risk?**

Harold I. Salmons<sup>1</sup>, Daniel Christoph Karczewski, Prabin Thapa, Nicholas Bedard<sup>2</sup>, Daniel J Berry<sup>2</sup>, Matthew Philip Abdel<sup>2</sup>  
<sup>1</sup>Orthopedic Surgery, Mayo Clinic, <sup>2</sup>Mayo Clinic

**INTRODUCTION:** Periprosthetic joint infections (PJI) of a total hip arthroplasty (THA) or total knee arthroplasty (TKA) may occur in the setting of an uninfected ipsilateral prosthetic joint. However, the risk to that uninfected ipsilateral joint is unknown. We analyzed the survivorship free from PJI in THAs and TKAs following treatment of an ipsilateral knee or hip PJI, respectively.

**METHODS:** Using our institutional total joint registry, we identified 205 patients who underwent treatment for PJI (123 THAs, 83 TKAs) between 2000 and 2019. All had a clinically uninfected ipsilateral TKA (123) or THA (83) at the time of their other joint PJI. The mean age was 70 years, 47% were female, and the mean BMI was 32 kg/m<sup>2</sup>. Index procedures primarily consisted of two-stage exchange (61%) and debridement, antibiotics, and implant retention (DAIR; 25%). Kaplan-Meier survivorship analyses were performed. Mean follow up was 6 years.

**RESULTS:** The 5-year survivorships free of PJI in the ipsilateral in situ THAs and TKAs were 97% and 99%, respectively. Three PJIs occurred (2 THAs and 1 TKA), all over 1 year from the index ipsilateral PJI. One of the 2 newly infected ipsilateral THAs resulted when the corresponding TKA failed to have source control (same organism as at index two-stage exchange). The other hip PJI was an acute hematogenous PJI with a different organism than at index DAIR. The new knee PJI developed after its corresponding THA had recurrence of its PJI (same organism as at index two-stage exchange).

**DISCUSSION AND CONCLUSION:** When diagnosed with PJI in a single joint, the risk of PJI in an ipsilateral prosthetic joint within 5 years was low (1-3% risk). In the rare event of an ipsilateral infection, all occurred greater than one year from the index PJI, and 2 of 3 were with the same organism when source infection control failed.