

Impact of Perioperative Respiratory Infection on Patient Outcomes in Revision Hip Arthroplasty

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INTRODUCTION:

Perioperative optimization in Revision Total Hip Arthroplasty (THA) is an important consideration, although more difficult to manage based on the urgency of the revision etiology. Previous studies reported increased medical complications after primary THA in the setting of COVID-19, but were limited in scope and failed to consider other pathogens. We hypothesized that there would be increased, but similar, medical and surgical complications after Revision THA in COVID-19 and influenza patient cohorts.

METHODS:

The PearlDiver database was canvassed to identify patients undergoing revision THA between January 2010 and April 2023 with perioperative Upper Respiratory Infection (URI) (90 days pre or postop). Logistic regression was utilized to compare these groups in terms of medical and surgical complications. Our primary outcomes were medical complications (Deep Venous Thrombosis [DVT], Pulmonary Embolus [PE], Myocardial Infarction [MI], Pneumonia, Stroke, Renal Failure, Urinary Tract Infection [UTI], Heart Failure) and surgical complications (Anemia, Loosening, Seroma, Hematoma, Surgical Site Infection [SSI], and Revision).

RESULTS:

We identified 97,328 records; 1,467 had perioperative COVID-19, while 329 had perioperative Influenza. Postoperative COVID-19 was associated with higher rates of DVT (OR 6.14 95% CI 1.89-37.65) and Anemia (OR 1.79 [95% CI 1.19-2.77]) compared to Influenza. Preoperative COVID-19 was associated with similar rates of complications compared to Influenza. Postoperative infection with either pathogen was associated with higher rates of DVT, PE, Stroke, MI, UTI, Renal Failure, Heart Failure, Anemia, and superficial SSI. Preoperative infection with either pathogen was associated with increased rates of DVT, PE, superficial SSI, deep SSI, Seroma, Stroke, MI, UTI, Renal Failure, Heart Failure, and Anemia.

DISCUSSION AND CONCLUSION: Perioperative URI with influenza or COVID-19 is associated with increased medical and surgical complications in Revision THA. This association suggests a common causative pathway between the viral illnesses, and further study of the pathophysiology is warranted to identify ways to mitigate its effect.