

# Ninety-Day Complications among Revision Total Hip Arthroplasty Patients Diagnosed with COVID-19 Postoperatively

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## INTRODUCTION:

The COVID-19 pandemic introduced a new set of challenges for the arthroplasty community, including the management of patients diagnosed with COVID following revision total hip arthroplasty (rTHA) and its potential impact on postoperative recovery. Therefore, this study sought to characterize the risks of postoperative COVID-19 infection among rTHA patients.

## METHODS:

A healthcare database was queried for patients who underwent rTHA between 2018-2021 and had a COVID diagnosis within 90 days after revision arthroplasty. Two additional cohorts were also identified: rTHA patients without a 90-day COVID diagnosis, and COVID+ patients who did not undergo rTHA. Patients with a COVID diagnosis at any time prior to surgery were excluded. Controlling for sex, age, payer status, and comorbidities, 1:10 propensity-score matching and multivariable logistic regressions were utilized to compare 90-day postoperative complications between groups.

## RESULTS:

A total of 4,049 patients underwent rTHA in the specified timeframe. Of which, 41 had a postoperative COVID+ diagnosis within 90 days. These patients were matched to both 410 rTHA/COVID- patients, as well as to 410 COVID+ patients who did not undergo rTHA. Compared to rTHA/COVID- patients, the rTHA/COVID+ cohort had significantly higher rates of pneumonia (OR 5.06, p=0.02), pulmonary embolism (PE) (OR 8.36, p=0.04), and deep venous thrombosis (DVT) (OR 10.3, p=0.03). Furthermore, the rTHA/COVID+ cohort had higher rates of PE (OR 6.96, p=0.03), DVT (OR 6.96, p=0.03), and 90-day readmissions (OR 3.71, p=0.004) compared to COVID+ patients without rTHA. Time to diagnosis of thromboembolic event for the rTHA/COVID+ patients was not statistically significant when compared to COVID+ alone patients (13.5 days SE 13.5 vs. 7.5 days SE 3.6, p=0.34).

## DISCUSSION AND CONCLUSION:

rTHA patients diagnosed with COVID-19 postoperatively were associated with significantly increased rates of thromboembolic events and pneumonia. Risk mitigation efforts would suggest extending the prophylactic anticoagulation period for rTHA patients who are diagnosed with postoperative COVID.

