

Risk Factors for Trochanteric Bursitis following Total Hip Arthroplasty: A Comprehensive Radiographic Analysis

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INTRODUCTION:

Trochanteric bursitis (TB) is a common complication following total hip arthroplasty (THA) characterized by lateral hip pain localized over the greater trochanter. Studies place the prevalence following THA surgery between 3% and 17% of cases. While increased offset is a potential risk factor, there is minimal published data to support this assertion. In this study, radiographic measurements, comorbidities, and patient characteristics were examined as risk factors and predictors of trochanteric bursitis.

METHODS:

All patients having undergone THA at a single academic tertiary care center from 2005-2022 were reviewed for the study. Using physician progress notes, patients were screened for the presence of trochanteric bursitis. Exclusion criteria included less than one-year follow up, avascular necrosis (AVN), or fracture. All patients meeting criteria underwent manual radiographic measurements of acetabular offset, femoral offset, total offset, and leg length from pre- and post-procedure AP pelvis X-rays, with scaling using femoral cortical diameter to account for imaging magnification variations. Univariable and multivariable Cox proportional hazard models were used to estimate the risk of TB over time for each of the patient characteristics, comorbidities, and radiographic measures.

RESULTS:

In total, 103 of 1,094 (9.4%) patients developed trochanteric bursitis, with a median (Q1, Q3) time to the presentation of 41.8 weeks (25.5, 66.9) post-surgery. In univariable models, only sex was found to be associated with increased TB risk, with female patients exhibiting a 1.79 times higher risk of developing TB compared to males (HR: 1.79 (1.16, 2.76), $p = 0.009$). Changes in acetabular offset, femoral offset, total offset, and leg length between pre- and post-surgery radiographs were not associated with an increased risk of developing TB in the univariate nor the multivariate models. Further, various offset thresholds were evaluated and there was no amount of offset where an increased risk of TB was identified.

DISCUSSION AND CONCLUSION:

This study found no relationship between femoral, acetabular, or total offset and trochanteric bursitis following THA. These findings suggest that surgeons may consider adding offset for increased prosthetic stability in high-risk cases. However, given this is a retrospective study, the authors are not advocating for routine use of increased offset. This study did identify a solitary risk factor of female sex with a 1.79 times increased risk of TB. Therefore, it is important for female patients to be counseled on their increased risk.