

# TISSUES FROM HIP & KNEE REPLACEMENT SURGERY: PATHOLOGY OR DISPOSAL?

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## Background

Our current practice requires that tissues removed during hip and knee arthroplasty be sent for pathologic examination. However, the literature demonstrates that pathologic examination rarely provides more information than the clinical or radiological diagnosis, nor does it alter clinical management. Ceasing unnecessary analysis would therefore allow pathology resources to be directed to more appropriate tests, treatments or procedures. To confirm findings from the literature, and to facilitate change management, we undertook a review of our local data.

## Methods

We retrospectively reviewed 819 hip and knee arthroplasty cases performed at a high volume arthroplasty teaching hospital between March and December of 2013. Clinical diagnosis based on information contained in the pathology requisition form and radiology report was compared to the final pathology report. The comparisons were classified into three categories: concordant (same diagnoses), discrepant (different diagnoses without alterations in management) and discordant (different diagnoses resulting in change in management).

## Results

The discordant rate amongst all 819 cases was 0.0% [95% CI 0.0 – 0.5%], meaning that the pathology diagnosis did not change management in any of the patients. The discrepant rate in the 347 elective hip arthroplasty cases was 1.2% [95% CI 0.5-2.9%]. Of the 4 discrepant hip cases, the pathology report did not make mention of avascular necrosis diagnosed on x-ray in 3 cases, and in the remaining case did not make mention of degenerative arthritis diagnosed on x-ray. The discrepant rate in the 428 knee arthroplasty cases was 2.8% [95% CI 1.6 – 4.8%]. Of the 12 discrepant cases, 7 pathology reports diagnosed calcium pyrophosphate deposition and not degenerative arthritis, 2 mentioned only synovitis, 2 only mentioned no evidence of malignancy, and 1 indicated degenerative changes and not rheumatoid arthritis. The discrepant rate in the hip fracture cases was 38%; none of the 17 discrepant pathology reports made mention of the fracture. There were 2 cases of previously diagnosed carcinoma with radiological evidence of metastases to the hip, these were confirmed with the pathological examination.

## Discussion

Our study confirms that sending routine tissue from hip and knee arthroplasty cases for pathological examination does not change management. In the province of Manitoba, approximately 3000 primary hip and knee replacement cases are performed annually; the cost of pathological examination of each case is approximately \$60. This translates into \$180,000 in health care resources that can be redirected to provide appropriate test, treatments or procedures. Work has started to share this information with orthopaedic surgeons, incorporate these findings into provincial arthroplasty care guidelines, change operating room procedures so that these tissues go directly to disposal, and explore ways to redirect these resources into increased hip and knee replacement surgery volumes.