The Clinical Value of the Histopathologic Interpretation of Arthroscopic Hip Shavings: What do we Learn?

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Background: The volume of hip arthroscopy has seen a dramatic rise in the last decade given the evolving indications and patient driven desire for less-invasive surgical treatment options of hip pathology. Previous studies have examined the clinical value of the routine examination of the pathologic findings from shoulder and knee arthroscopy, total hip and knee arthroplasty, lumbar discectomy, thumb arthroplasty, and in retrieved allografts. The purpose of our study was to examine the clinical value of the histopathologic interpretation of arthroscopic hip shavings which has not been determined to date. We hypothesized that this routine practice of pathology consultation was both expensive and ultimately would not affect the long-term care of the patient.

Methods: Between January 2008 and December 2011, 569 consecutive hip arthroscopies in 534 patients were performed by two orthopaedic surgeons at a single institution. Three cases were excluded as no surgical specimen was collected for analysis. We retrospectively reviewed the pre-operative and post-operative diagnoses, procedure performed, and pathology reports from these procedures to determine if the routine histopathologic interpretation of the arthroscopic shavings altered patient care. We then estimated the total cost in 2012 dollars of these analyses using 2012 Medicare reimbursement for Common Procedural Codes (CPT) 88304 (Level III Surgical pathology, gross and microscopic examination) and 88311 (Decalcification procedure).

Results: There were 372 females and 197 males with a mean age of forty-four (range sixteen to eighty-one). The primary intra-operative diagnoses were primarily labral tear, femoroacetabular impingement, iliopsoas tendinitis, and loose joint bodies. In 2/569 (0.004%), the histopathologic interpretation differed from the surgeon’s intra-operative diagnosis. One case demonstrated pigmented villonodular synovitis (PVNS) and another demonstrated focal chondroid metaplasia. No cases demonstrated neoplasia or acute inflammation. Patient care was directly affected in only one (0.002%) case. Medicare payments were used to estimate total cost. In 2012 dollars, the total cost for these 569 analyses was estimated at $70,600 for our institution.

Discussion: Hip arthroscopy has seen a marked increase in volume in the last ten year and an estimated 70,000 hip arthroscopies will be performed in 2013¹. Previous orthopaedic pathology studies have suggested the limited clinical value of the routine analysis of arthroscopic specimens, have questioned their cost, and suggested that hospital and state regulations governing this routine practice be addressed²⁻⁷,⁹. We defined clinical value similarly to previous studies, as both the cost of histopathologic analysis as well as diagnostic value of the procedure. Patient care was directly affected by one of the 569 analyses as the histopathologic report demonstrated evidence of pigmented villonodular synovitis that was identified as “synovitis” intra-operatively. That patient was monitored more frequently in the post-operative period, but has not required further intervention. Chondroid metaplasia can be seen in a variety of conditions, most notably synovial chondromatosis. Our patient did poorly post-arthroscopy and elected to undergo total hip arthroplasty and was subsequently lost to follow-up. Cost-
containment is ongoing in our current state of healthcare. Extrapolating cost projections with anticipated rise in surgical volume puts annual cost of this routine practice over 8.5 million dollars. Our findings are consistent with previous studies regarding the clinical value of routine pathologic referral for arthroscopic specimens.

Conclusions: The routine histopathologic analysis of arthroscopic hip specimens offers little clinical value, is costly, and mandatory regulations of such analysis should be re-examined so that histopathologic interpretation can be requested by the treating surgeon based on intra-operative findings.
References:


