Anatomy of the Hip Capsule and Pericapsular Structures: A Cadaveric Study
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Methods: Dissections were performed on eleven nonpaired, fresh-frozen cadaveric hips documenting capsular thickness, origins, insertions, and attachments to pericapsular structures including the abductors, rectus femoris, piriformis, short external rotators, and iliocapsularis muscles. Tendinous insertions of the surrounding pericapsular muscles were measured according to size and distance from reproducible osseous landmarks.

Results: The capsule is thickest near the acetabular origin at the posterosuperior and superior hemi-quadrants, and is thinnest near the femoral insertion in the posterior and posteroinferior hemi-quadrants. The iliocapsularis, indirect head of the rectus, conjoint, obturator externus, and gluteus minimus tendons all demonstrate consistent capsular contributions, while the piriformis does not have a capsular attachment. The interrelationship of these structures is complex, yet the surrounding layers of the capsule are confluent in predictable relationships. Osseous landmarks for tendinous attachments are defined and illustrated.

Clinical Relevance: Knowledge of the intricate relationship between the hip capsule and pericapsular structures presented here will be useful for surgeons as they perform the precise and specific capsular releases required during hip arthroscopy. Our anatomical findings contribute important qualitative data to help expound upon the recent literature regarding hip capsular anatomy and its intricate relationship to pericapsular structures.