

Surgical Technique for Subscapularis-Sparing Anatomic Total Shoulder Arthroplasty

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Traditional techniques for anatomic total shoulder arthroplasty (TSA) require a release of the subscapularis tendon in the form of a peel, tenotomy, or lesser tuberosity osteotomy to achieve adequate exposure of the glenoid face and humeral head. The subscapularis tendon must then be repaired anatomically and heal at its native length to ensure a satisfactory and durable outcome for the patient. This requires careful surgical technique, additional OR time, and a period of post-operative immobilization. Failure of subscapularis tendon healing may also lead to a deterioration in function, persistent pain, and ultimately a cause for potential revision surgery following anatomic TSA. Surgical techniques to spare the insertion of the subscapularis tendon in anatomic TSA have evolved but there are few in the published literature owing to the challenges in achieving adequate exposure and limitations in conventional prosthesis design and instrumentation. This video describes a surgical technique and representative case study of a subscapularis-sparing anatomic TSA with the aim to address several of the technical challenges commonly faced during the procedure. These include 1) gaining exposure through the familiar deltopectoral approach, 2) developing the inferior and superior windows about the subscapularis to resect the inferior humeral neck osteophytes and perform an anatomic head resection, and 3) placing retractors to facilitate perpendicular access to the glenoid face and delivering the osteotomized humeral surface to achieve adequate exposure for component implantation. This video also highlights several features of a prosthesis and its instrumentation that facilitates accurate component placement and allows for reproducible exposure through a subscapularis-sparing approach.