

Effects of Subscapularis Repair in the Reverse Total Shoulder Arthroplasty: Difference in Those with Intact or Poor Subscapularis Tendon

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INTRODUCTION: Numerous studies have shown that repair of the subscapularis (SBS) tendon with reverse total shoulder arthroplasty (rTSA) in patients with rotator cuff tears contributes to joint reaction force and stability. However, the effect of preoperative fatty infiltration of the SBS (SBS-FI) on the outcome of [subsequent repair with rTSA](#) remains unknown

METHODS: We studied 161 patients who underwent rTSA with SBS repair and completed at least two years of follow-up. The mean age of subjects was 74.5 years (range, 65–95 years). The mean follow-up period was 45.3±22.4 months (range, 24–136 months). Subjects were divided into three groups according to the FI in the upper and lower portions of the SBS: group A, with intact upper and lower portions (n=85), group B, with intact lower portions (n=44), and group C, with infiltrated upper and lower portions (n=32).

RESULTS: Preoperative FI significantly varied among the three groups: group A (1.18±0.6), group B (2.95±0.56), and group C (4.0±0.00) (p<.001). The variation in preoperative SBS-FI was shown to not affect the following variables two years after surgery: pain (p=.541), American Shoulder and Elbow Surgeons (ASES) score (p=.663), range of motion (ROM) (forward flexion (FF), abduction (Abd), external rotation (ER), internal rotation (IR), all p >0.05), and muscle power (FF, Abd, ER, IR, all p > 0.05). Activities of daily living (ADL) showed a more positive trend in group A than in groups B and C. Notably, *toileting* was possible two years after surgery in 81% of patients in group A, 68% in group B, and 72% in group C, although without significance (p=.220). The incidence of complications was seven cases of acromial fracture (8%), three cases of instability (3%), and six cases of scapular notching (7%) in group A; four cases of acromial fracture (9%), no case of instability, and four cases of scapular notching (9%) in group B; and only a single case of scapular notching (3%) in group C, with no other complications (p=.733).

DISCUSSION AND CONCLUSION: Postoperative variables including pain, ASES score, RoM, and muscle strength showed no significant variation based on differences in SBS quality before rTSA. Notably, in the case of favorable preoperative SBS quality, the level of functional IR after surgery was higher, and the incidence of postoperative complications (acromial fracture and scapular notching) was also higher. Thus, care should be taken when deciding whether to perform SBS repair, even in cases of favorable preoperative SBS quality.