Long-term functional outcomes after repair of rotator cuff tears correlated with atrophy of the supraspinatus muscles on magnetic resonance images

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Abstract

We determined the relationship between atrophy of the supraspinatus muscle and functional outcomes in 27 patients with full-thickness rotator cuff tears who underwent arthroscopic acromioplasty and mini-open cuff repair. Before surgery, all underwent a physical examination and magnetic resonance imaging of the involved shoulder. Using image-processing software, we measured the cross-sectional area of the total supraspinatus muscle (including regions of fatty degeneration and atrophy) and of the atrophic supraspinatus muscle on sagittal oblique images obtained about 20 mm proximal to the glenoid surface. The atrophic-to-total ratio (A/T ratio) of these areas was then calculated. We assessed functional outcomes by the Constant and Murley functional score at long-term follow-up. The correlation between the A/T ratios and the functional ratings was statistically analyzed. The results demonstrated a significant positive correlation between A/T ratios of the supraspinatus muscle and functional outcomes.