

Relationship between Rotator Cuff Tears and Acromial Coverage of the Humeral Head on the Axial Plane

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Abstract

Purpose: Many authors have described the relationship between the radiographic morphology of the acromion and rotator cuff disease, but few studies have evaluated the relationship on the axial plane. We hypothesized that high acromial coverage of the humeral head or excessive lateral or anterior extension of the acromion would be an independent predictor of rotator cuff disease. This study aimed to clarify the relationship between rotator cuff tears and acromial coverage of the humeral head on the axial plane.

Methods: Fifty shoulders were evaluated for acromial coverage of the humeral head on axial three-dimensional computed tomography images. The shoulders were divided into two groups: group F ($n=25$; mean age, 60.48 years; range, 49–73 years) with full-thickness rotator cuff tears, and group C ($n=25$; mean age, 58.96 years; range, 40–79 years) with intact cuffs as a control group. The acromial coverage of the humeral head was analyzed to determine the difference between the groups.

Results: There was no significant difference between the groups in the acromial coverage of the humeral head.

Conclusions: High acromial coverage of the humeral head on the axial plane did not appear to be associated with full-thickness tearing of the rotator cuff.

Key words: Rotator cuff tear, Acromial morphology, Acromial coverage, Radiography, Three-dimensional computed tomography