The Impact of Faulty Posture on Rotator Cuff Tears in the General Population

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Disclosures:

Introduction: Faulty posture is associated with various musculoskeletal pathologies. Rotator cuff tears are common and can be asymptomatic. We hypothesized that the prevalence of rotator cuff tears would be higher among individuals with poor posture, regardless of the presence of symptoms. This study therefore examined the relationship between faulty posture and rotator cuff tears in a sample of a general population.

Methods: Participants initially comprised 525 residents (193 men, 332 women; mean age, 61.9 years; range, 28-94 years) of a mountain village who participated in an annual health-check. Participants completed a background questionnaire, the Simple Shoulder Test to evaluate shoulder function, and a questionnaire on health-related quality of life. Physical examinations were also performed to evaluate shoulder function. Ultrasonographic examinations were performed to identify rotator cuff tears, and participants were grouped according to the presence or absence of tears. Posture was classified by two observers into four types (ideal alignment, kyphotic-lordotic posture, flat-back posture, or sway-back posture). Univariate analyses were performed to compare differences in background characteristics between groups, then multivariate analysis was performed to identify risk factors for rotator cuff tears.

Results: Final analysis was performed for 379 participants (135 men, 244 women; mean age, 62.0 years; range, 31-94 years) showing the same posture classification from both observers. Of these, 93 (24.5%) showed rotator cuff tear in one shoulder and 45 (11.9%) showed tears in both. Prevalence of rotator cuff tears was 2.9% with ideal alignment, 65.8% with kyphotic-lordotic posture, 54.3% with flat-back posture and 48.9% with sway-back posture. Logistic regression analysis identified increased age, abnormal posture and past pain as risk factors for rotator cuff tears.

Discussion: Postural abnormality represented an independent risk factor for symptomatic and asymptomatic rotator cuff tears. Current pain was not an independent predictor of rotator cuff tear, but past pain was.

Significance: These results may help define preventive measures for rotator cuff tears and in designing rehabilitation therapies for shoulder pathology.

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