Coracoid tip position on frontal radiographs of the shoulder: a predictor of common shoulder pathologies?

The coracoacromial arch is a static anterior-superior stabilizer of the humeral head. Thus coracoacromial arch inclination, which varies depending on coracoid tip position, may be related to shoulder pathologies. Therefore, we retrospectively analysed coracoid tip positions in the true anterior posterior view of different shoulder pathologies: reference shoulders (n=27), shoulders with rotator cuff tear (supraspinatus tear n=29; subscapularis tear n=21) and shoulders with anterior glenohumeral instability (traumatic n=17; atraumatic n=14). In supraspinatus tear shoulders, the coracoid tip projected onto inferior glenoid half in 86% of cases (type I coracoid), extending more inferiorly compared with reference group (p=0.0002) or subscapularis tear shoulders (p<0.0001). In contrast, 78% of cases with subscapularis tear show the coracoid tip projected onto the superior glenoid half (type II coracoid). Atraumatic glenohumeral instabilities had a more superior coracoid tip position than traumatic instabilities (p=0.04), but no differences were observed on basis of coracoid type or in comparison with normal controls. We conclude that coracoid tip position is highly variable. Since type I coracoids are predominant in shoulders with supraspinatus tears and type II coracoids in shoulders with subscapularis tears, coracoid tip position may thus provide a simple diagnostic complement for a probable
site of rotator cuff tears.