

## Os acromiale: frequency, anatomy, and clinical implications

### References:

- . Sammarco, V. J. Os acromiale: frequency, anatomy, and clinical implications. *J Bone Joint Surg Am.* 2000 Mar; 82(3):394-400.
- Keywords: Acromion: \*abnormalities/ Adolescent/ Adult/ Aged/ Aged, 80 and over/ Cadaver/ Female/ Humans/ Male/ Middle Aged
- Abstract: **BACKGROUND:** Os acromiale is present when the anterior portion of the acromion has one or more separate ossicles. Its frequency has been documented, in radiographic and anatomical studies, to be between 1 and 15 percent. Reports of os acromiale associated with subacromial pathology have been cited to imply that this entity is a cause of subacromial impingement; however, no study has demonstrated an increased frequency of os acromiale in patients with shoulder pain compared with the frequency in the general population. Inconsistencies in the literature concerning anatomy, development, and frequency prompted the current anatomical study. The purpose of this study was to better define the frequency and anatomy of os acromiale in the general population. **METHODS:** Two thousand three hundred and sixty-seven scapular bones from 1198 human skeletons from the Hamann-Todd Osteological Collection were studied for evidence of os acromiale. The sample consisted of specimens from 1033 men and 165 women, 843 of whom had been white and 355, black. The mean age of the individuals at the time of death was 44.7 years (range, eighteen to eighty-nine years). The frequency of os acromiale was noted, and the specimens were measured. **RESULTS:** There were 128 cases of os acromiale in ninety-six (8.0 percent) of the 1198 skeletons, and the condition was bilateral in thirty-two (33.3 percent) of the ninety-six skeletons. In twenty cases, the free fragment had been lost but it was assumed that a fragment had been present because the acromion was truncated. Os acromiale was more frequent in blacks than in whites (13.2 compared with 5.8 percent;  $p < 0.001$ ) and in men than in women (8.5 compared with 4.9 percent;  $p = 0.09$ ). The mean proportional length of the free fragment was 0.42 compared with the overall length of the acromion. Care was taken to differentiate os acromiale from a normal immature acromion. Six skeletons demonstrated persistent acromial apophyses. All six cases were bilateral; seven fragments were fusing, and five were free. The oldest age at which a persistent normal apophysis was found was twenty-one years. The frequency of os acromiale in specimens from individuals who had been less than twenty-two years old was not significantly different from that in the remainder of the collection ( $p = 0.74$ ). Twenty-one scapulae had a distinct circumferential line that was suggestive of an acromial joint, but the distal and proximal portions were solidly fused. However, the findings on plain axillary radiographs of sixteen of these specimens were indistinguishable from those of specimens with os acromiale. **CONCLUSIONS:** An anatomical study, performed to better define the frequency and anatomy of os acromiale in the general population, showed that fused os acromiale, which has not been described previously, might be mistaken for a free ossicle in the clinical setting.