The Radiographic Effects of Lunotriquetral Coalition on Scapholunate Articulation

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Introduction: Radiographic widening in the scapholunate (SL) joint due to lunotriquetral (LT) coalition has historically been viewed as normal due to reported false positives of SL dissociation/widening in patients with LT coalition. Minimal further investigations have been reported on these findings.

Methods: Scapholunate interval, angle, third CMC joint space, and ligamentous measurements on CT, MRI, and X-ray imaging were compared for those with and without LT coalition. A multilevel one-way ANOVA was used to analyze CT SL angle versus X-ray SL angle and was compared to the control group. These comparisons were also performed for SL intervals and repeated for MRI imaging versus X-ray imaging. A t-test was completed to compare volar and dorsal ligament widths measured on MRI for the lunotriquetral and normal groups.

Results: On X-ray and CT, no difference was measured in SL interval, angle, and third CMC joint space between those with and without LT coalition, but SL angle was higher in those without LT coalition on CT. On MRI, no difference was measured in SL angle, but SL interval was smaller in those without LT coalition. SL interval compared to third CMC joint space was smaller for all cohorts on MRI and CT.

Conclusions: X-ray, CT, and MRI imaging of SL interval widening was not seen above normal radiographic parameters in the setting of LT coalition. Therefore, radiographic parameters of SL dissociation/widening should not change with LT coalition. The third CMC joint space was smaller compared to the SL interval and should not alone be used for radiographic diagnosis of SL dissociation.