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Association Between Labral Ossification and Sacroiliac Joint Disease: A Link to an Autoimmune Etiology

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Summary:
SI joint abnormalities are more prevalent in patients with FAI associated with labral ossification (LO) than in a matched control group without LO; suggesting there may be an autoimmune link to LO.

Abstract:
Introduction

Labral ossification has been identified as an adult acquired form of pincer impingement. The etiology of this process is unknown. There is a predilection for middle-age females, although it is likely that various subgroups exist with different etiologies. An autoimmune process is one possibility, and sacroiliac joint disease is associated with autoimmune disorders, most specifically ankylosing spondylitis. Therefore, a search was made to evaluate whether there was a correlation between labral ossification and SI joint disease.

Methods

A group of 52 patients (56 hips) with labral ossification has been previously reported. In order to determine whether there was a correlation between SI joint disease and labral ossification, the CT scans of this group with labral ossification were reviewed assessing the SI joint, and compared to an age, gender, and FAI type-matched control cohort. The SI joints were graded according to the modified NY criteria. The evaluator was blinded as to whether the scan was from a patient in the study or control group to eliminate potential bias in interpreting the status of the SI joint. The influence of independent variables of gender and age (those over and under the average age) was evaluated.

Results

28 patients (29 hips) previously identified as having labral ossification had a CT scan available for evaluation of the ipsilateral SI joint and were included as the labral ossification cohort (LO). There were 17 females and 12 males, with average 45 years, six Pincer type FAI and 23 combined Cam and Pincer FAI. The control group (n=29) was comprised of 17 females and 12 males with average 45 years, and FAI subtype 5 Pincer and 24 combined.

Grade 3 SI joint abnormalities were significantly more prevalent in the LO cohort (28%) compared to the controls (7%) (p=.037), and grade 0-1 changes (relatively normal SI joints) were significantly less common in patients with labral ossification (38%) than controls (72%) (p=.008).

Sub-analysis of the patients based on age demonstrated that 35% of the LO cohort<45yrs had ipsilateral Grade 3 SI joint abnormalities, while none of the control patients <45yrs had grade 3 changes (p=.041). Analysis based on gender revealed that 42% of the males with labral ossification had Grade 3 changes, compared to 8% of the male controls (p=.155). Eighteen percent of the LO cohort females had Grade 3 changes compared to 6% of the female

controls (p=.601).

Conclusions

Patients with acquired FAI due to labral ossification are more likely to have SI joint pathology than patients with FAI not involving labral ossification. These differences were greatest among males and also among patients less than 45 years of age. The etiology of labral ossification has been unknown. SI joint disease is associated with autoimmune disorders such as ankylosing spondylitis; and the increased prevalence of SI disease in these patients with labral ossification suggests a connection with an autoimmune etiology. The variable prevalence among different subgroups also suggests that these patients with labral ossification may represent a heterogeneous population with differing etiologies among the subgroups. This study is an important step in better discerning the cause of labral ossification; which will prove to be essential in determining how best to treat patients with this disorder. The surface is just being scratched.