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Paper #119

# Utility of MRI to Predict Severity and Location of Pathology at Arthroscopy in Patients with Femoroacetabular Impingement

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**Summary**:
MRI is capable of detecting and grading soft tissue damage in FAI patients when utilizing a consistent anatomic landmark to improve localization of pathology.

**Abstract**:

## Purpose

The purpose of this study was to investigate the degree of agreement between magnetic resonance imaging (MRI) and arthroscopy for evaluation of pathology in patients with femoroacetabular impingement (FAI).

## Methods

Pre-operative MRI was assessed by a fellowship trained musculoskeletal radiologist in 24 hips (26±6 years) undergoing hip arthroscopy for FAI. Blinded intraoperative videos were reviewed by a fellowship trained surgeon blinded to the radiologist's findings. Images were evaluated for ligamentum teres tear, anterior inferior iliac spine (AIIS) morphology, cartilage score (Outerbridge, ALAD), and labral score (Beck). Location was reported using a clock face methodology with 12:00 corresponding to direct superior. Gwet's agreement coefficients (AC) between MRI and arthroscopy evaluations were calculated following an initial scoring, as well as after subsequent reevaluation of MRIs utilizing the indirect head of the rectus femoris as an anatomic reference point for demarcation of the 12:00 position.

## Results

The initial evaluation demonstrated moderate to near perfect agreement for most variables; however, agreement for labral tears using a clock-face assessment was highly variable. The reevaluation of MR images using the indirect head of the rectus as an anatomical landmark demonstrated an overall improved agreement at nearly all locations for position-dependent variables (24/27, 88.9%) with respect to both chondral and labral pathology.

## Conclusion

Excellent to near perfect agreement between MRI and arthroscopic evaluation of chondral and labral pathology in FAI is found when using an anatomic landmark to establish the 12:00 position. These results indicate that the non-invasive technique of MRI is capable of detecting and grading soft tissue damage in FAI patients when utilizing a

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consistent anatomic landmark to improve localization of pathology.