ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

12th Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

Paper #65

The Accuracy of Preoperative HAGL Lesion Diagnosis

Toshinobu Omiya, MD, JAPAN
Hiroyuki Sugaya, MD, JAPAN
Norimasa Takahashi, MD, JAPAN
Keisuke Matsuki, MD, PhD, JAPAN
Morihito Tokai, MD, JAPAN
Yusuke Ueda, MD, JAPAN
Shota Hoshika, MD, JAPAN
Hiroshige Hamada, MD, JAPAN
Takeshi Morioka, MD, JAPAN
Yasutaka Takeuchi, MD, JAPAN

Funabashi Orthopaedic Sports Medicine Center
Funabashi, Chiba, JAPAN

Summary:
We can increase the reliability of preoperative HAGL lesion diagnosis if we combine the J sign, contrast leakage, and free end of capsule tear.

Abstract:

Purpose

HAGL (Humeral Avulsion of the Glenohumeral Ligament) lesion is one of the causes of anterior shoulder instability. It is important to detect HAGL lesion in the preoperative imaging before surgery, because the procedure for HAGL repair is totally different to that of Bankart lesion. The purpose of this study was to elucidate the preoperative diagnostic accuracy of HAGL lesion using MR arthrogram.

Materials And Methods

We retrospectively reviewed 659 patients who underwent arthroscopic stabilization for recurrent shoulder instability from January 2015 to December 2017. This included 19 patients who were diagnosed with HAGL lesion at the time of surgery (incidence ratio:2.9%): these were 13 males and 6 females, and the mean age was 24.2 years. Preoperatively, all patients were performed an MR arthrogram (MRA) with contrast media. Arthrography was performed by a fuoroscopically guided injection which contained 20 cc saline with 0.03cc gadolinium. After the injection, MR arthrograms were obtained with a 0.3T open MRI (AIRIS? comfort 0.3T; Hitachi, Japan) using a phased-array surface coil. The reason for the 0.3T open MRI scan was to take abduction-external rotation (ABER) position images. The characteristic findings of HAGL lesion (J sign, contrast leakage in the region of capsular avulsion, and free end of capsule tear) were assessed in the preoperative MRA.

Results

Major causes of first dislocation in patients with HAGL lesions were 6 Judo wrestling sports patients (31.6%), 3 snowboard sports patients (15.9%), 2 football sports patients (10.5%), and 2 skiing sports patients (10.5%). In the MRA findings, sensitivity and specificity of J sign was 63.2% and 93.0% accordingly. Sensitivity and specificity of contrast leakage was 36.8% and 96.2% accordingly. Sensitivity and specificity of free end of capsule tear was 84.2% and 100% accordingly. Sensitivity and specificity of either of these positive findings was 89.5% and 93.0% accordingly.

Paper #65

Discussion And Conclusion

It is important to evaluate the condition of capsule and labrum in the preoperative diagnosis of anterior shoulder instability using MRA. However, there are few reports about the accuracy of MRA findings. In this study, J sign and contrast leakage known as typical findings of HAGL lesion are not seen frequently and sensitivity is not high. It can be one of the reasons that we often see membranous structure over the HAGL tear which possibly blocks the leakage of contrast. Moreover, there are false positive cases in J sign evaluation and contrast leakage. This is because of the inferior capsule anatomical variations. There have been reported two variations of inferior capsule which included the collar-like attachment and V-shape attachment. In the V-shaped attachment, inferior capsule attaches to the proximal humeral shaft and appears as a J sign on the MRA.

In conclusion, the incident ratio of HAGL lesion was 2.9%. The reliability of preoperative HAGL lesion diagnosis will increase if we combine the J sign, contrast leakage, and free end of capsule tear on the MRA. The increase of the MRA image resolution may increase the reliability of a HAGL lesion diagnosis.