

Preoperative MRI Underestimates Shoulder Labral Injuries Compared With Diagnostic Arthroscopy

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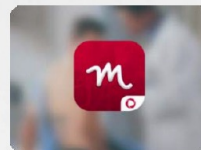


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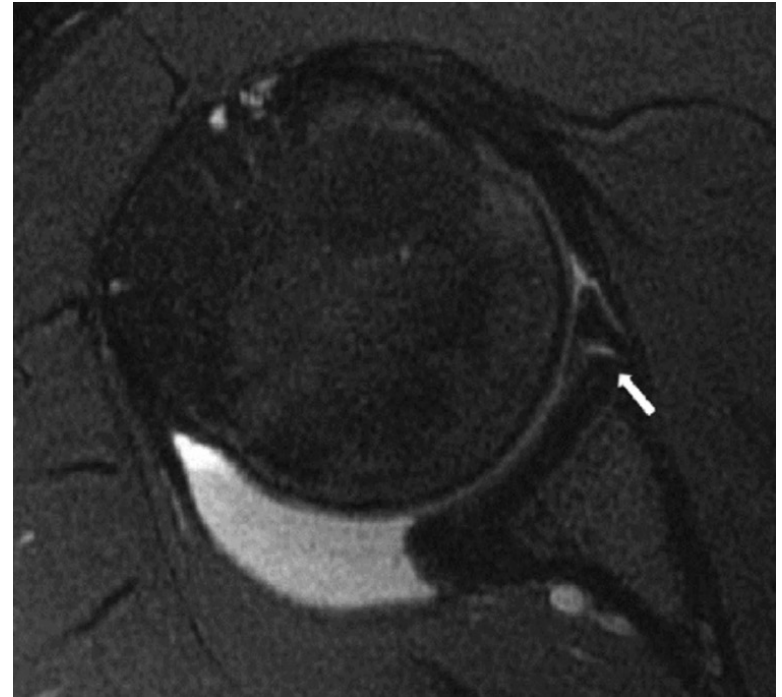


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MRI is Essential in Workup of Shoulder Instability

- MRI is diagnostic study of choice for shoulder instability
- Essential for detection of labral injuries, treatment decisions, and surgical planning
- Reports of sensitivity and specificity of MRI for labral tears varies (65-100%, 58-100%, respectively)
- There is limited evidence around the accuracy for estimating extent of labral tears in the shoulder

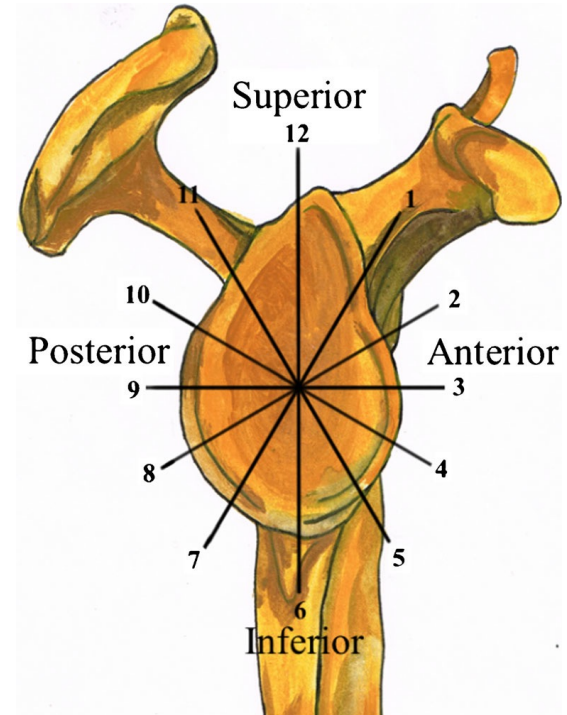


Purpose

- While MRI is an effective screening tool, discrepancies are frequently encountered between imaging findings and diagnostic arthroscopy
- **Objective:** compare the overall agreement in the magnitude of shoulder labral injuries between preoperative MRI and assessment at the time of diagnostic arthroscopy
- **Hypothesis:** MRI imaging underestimates the extent of labral injuries compared with diagnostic arthroscopy

Methods

- Retrospective review of primary arthroscopic labral repairs
- Extent of tear recorded from radiology and operative reports as clock-face coordinates
- Tear locations classified as anterior (2-6 o'clock), posterior (6-10), or superior (10-2)
- MRI studies all read by fellowship-trained musculoskeletal radiologists
- Exclusion criteria: prior surgery, MRI study from outside health system, incomplete documentation of tear location



Results

- 138 subjects met criteria for inclusion (mean age 25.8 years, 73% male)
- 105 underwent MRI arthrogram and 33 underwent conventional MRI studies
- Average time from initial injury to MRI was 153.4 days
- Average time from MRI to surgical intervention was 66.8 days

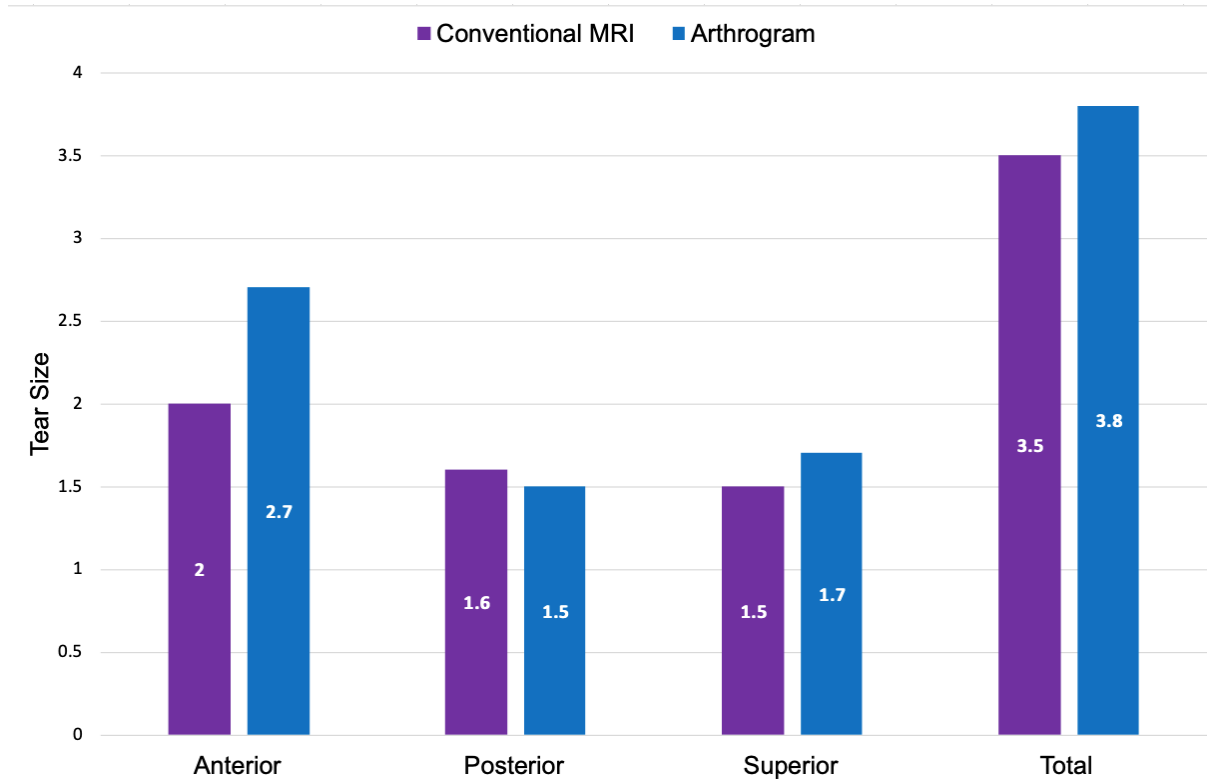
Results

Location	MRI	Arthroscopy	p-value
Anterior	2.2	2.5	0.08
Posterior	1.6	2.4	<0.01
Superior	1.5	1.6	0.29
Total	3.6	4.4	<0.01

Results

Location	MR Arthrogram	Arthroscopy	p-value
Anterior	2.0	2.4	0.08
Posterior	1.6	2.4	<0.01
Superior	1.5	1.6	0.37
Total	3.5	4.4	<0.01

Results



Conclusions

- MRI and MR arthrogram significantly underestimate the overall size of labral tears in setting of shoulder instability, particularly in the posterior labrum
- Surgeons should consider potential underestimation of true labral injury during preoperative planning for portal placement and other operative aspects of managing shoulder instability

Thank You!

