ACR Appropriateness Criteria® Shoulder Pain–Traumatic

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Abstract

Traumatic shoulder pain is pain directly attributed to a traumatic event, either acute or chronic. This pain may be the result of either fracture (the clavicle, scapula, or proximal humerus) or soft-tissue injury (most commonly of the rotator cuff, acromioclavicular ligaments, or labroligamentous complex). Imaging assessment of traumatic shoulder pain begins with conventional radiography and, depending on physical examination findings, will require MRI or MR arthrography for assessment of soft-tissue injuries and CT for delineation of fracture planes. Ultrasound excels in assessment of rotator cuff injuries but has limited usefulness for assessment of the deep soft-tissues. CT angiography and conventional arteriography are helpful for assessment of vascular injury, and bone scintigraphy can be used in assessment of complex regional pain syndrome after traumatic shoulder injury.

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The American College of Radiology seeks and encourages collaboration with other organizations on the development of the ACR Appropriateness Criteria through society representation on expert panels. Participation by representatives from collaborating societies on the expert panel does not necessarily imply individual or society endorsement of the final document. Reprint requests to: publications@acr.org.

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The American College of Radiology Appropriateness Criteria are evidence-based guidelines for specific clinical conditions that are reviewed annually by a multidisciplinary expert panel. The guideline development and revision include an extensive analysis of current medical literature from peer reviewed journals and the application of well-established methodologies (RAND/UCLA Appropriateness Method and Grading of Recommendations Assessment, Development, and Evaluation or GRADE) to rate the appropriateness of imaging and treatment procedures for specific clinical scenarios. In those instances where evidence is lacking or equivocal, expert opinion may supplement the available evidence to recommend imaging or treatment.

Key Words: Appropriateness Criteria, Appropriate Use Criteria, AUC, Arterial injury, Complex regional pain syndrome, Labral tear, Rotator cuff tear, Shoulder pain, Trauma

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ACR Appropriateness Criteria® Shoulder Pain–Traumatic. Variants 1 to 10 and Tables 1 and 2.

Variant 1. Traumatic shoulder pain. Any etiology. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
X-ray shoulder	Usually Appropriate	☢
CT arthrography shoulder	Usually Not Appropriate	☢☢☢☢
CT shoulder with IV contrast	Usually Not Appropriate	☢☢☢
CT shoulder without and with IV contrast	Usually Not Appropriate	☢☢☢
CT shoulder without IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
MR arthrography shoulder	Usually Not Appropriate	0
MRI shoulder without and with IV contrast	Usually Not Appropriate	0
MRI shoulder without IV contrast	Usually Not Appropriate	0
Tc-99m bone scan shoulder	Usually Not Appropriate	☢☢☢
US shoulder	Usually Not Appropriate	0

FDG = fluorine-18-2-fluoro-2-deoxy-D-glucose; IV = intravenous; US = ultrasound.

Variant 2. Traumatic shoulder pain. Nonlocalized shoulder pain. Negative radiographs. Next imaging study.

Procedure	Appropriateness Category	Relative Radiation Level
MRI shoulder without IV contrast	Usually Appropriate	0
CT arthrography shoulder	May Be Appropriate	☢☢☢☢
MR arthrography shoulder	May Be Appropriate	0
US shoulder	May Be Appropriate (Disagreement)	0
CT shoulder without IV contrast	Usually Not Appropriate	☢☢☢
CT shoulder with IV contrast	Usually Not Appropriate	☢☢☢
CT shoulder without and with IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
MRI shoulder without and with IV contrast	Usually Not Appropriate	0
Tc-99m bone scan shoulder	Usually Not Appropriate	☢☢☢

FDG = fluorine-18-2-fluoro-2-deoxy-D-glucose; IV = intravenous; US = ultrasound.