

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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Conflict of Interest: Dr. Cassidy reports personal fees from Johnson and Johnson outside the submitted work.

Disclaimer: The ACR Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those examinations generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the FDA have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

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.

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