

Evidence Discussion (Shoulder MS-19)

For most patients with a shoulder complaint, a diagnosis can be made based on a detailed history, physical examination and plain radiographs.[1,6,9] Advanced imaging is typically not necessary for the initial evaluation. Multiple articles have shown advanced imaging can often demonstrate abnormalities that have no relevance to the patient's symptoms. It has been reported that approximately 30 – 40 percent of middle-aged patients and an even higher percentage of older patients have asymptomatic rotator cuff and superior labral tears.[2,3,4] Advanced imaging incidental findings can possibly lead to overtreatment with referral to specialists and possibly unnecessary surgery.[1]

Plain x-rays are valuable as initial imaging as they can determine the necessity of advanced imaging, what specific advanced imaging study is warranted and if contrast is needed. As x-rays often have a larger field of view than MRI or CT, they have the potential to identify more proximal or distal pathology in an extremity. Initial plain x-rays for the evaluation of shoulder conditions are also recommended by the American College of Radiology Appropriate Use Criteria.[7] It is also noteworthy that when MRI is necessary, radiographs are considered an essential, initial complementary study for the reading of musculoskeletal MRIs.[5]

Treatment for many shoulder conditions does not rely on advanced imaging results and most patients will improve within a few weeks or months with conservative care.[1,9] However, for some shoulder conditions (e.g., loose bodies, suspected full thickness rotator cuff tear when there is consideration for surgery, issues after shoulder replacement surgery), conservative care would not be necessary prior to advanced imaging.

In addition to overtreatment and possibly unnecessary surgery due to incidental findings, risks of advanced imaging include but are not limited to radiation exposure, implanted device complications, metallic foreign body complications, and contrast complications.[8]

For many shoulder conditions, initial plain x-rays and an initial course of conservative care can provide a significant clinical benefit that would outweigh the clinical harm from perhaps briefly delaying advanced imaging if needed. A course of conservative care or plain x-ray findings many times may obviate the need for advanced imaging which possesses its own set of significant risks.

References:

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