

Evidence Discussion (Hand MS-22)

For most patients with a hand complaint, a diagnosis can be made based on a detailed history, physical examination and plain radiographs. [5, 7-9] Advanced imaging is typically not necessary for the initial evaluation. [1, 2, 5, 8, 9] Multiple articles have shown advanced imaging can often demonstrate abnormalities that have no relevance to the patient's symptoms and that the prevalence of asymptomatic abnormalities increases with age. [6, 10, 11, 13] Advanced imaging incidental findings can possibly lead to overtreatment with referral to specialists and possibly unnecessary surgery. [7] Ganguli et. al. reported incidental findings on screening and diagnostic tests are common and may trigger cascades of further testing and treatment. [12] Also reported was that such cascades of care come with substantial potential for harm (including patient anxiety and additional treatment risks) in addition to monetary costs and inconvenience. [12]

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. The American College of Radiology Appropriate Use Criteria recommends initial plain x-rays prior to advanced imaging for both chronic hand pain and acute hand trauma [1, 2]. It is also noteworthy that when MRI is necessary, radiographs are considered an essential, initial complementary study for the reading of musculoskeletal MRIs. [4]

Treatment for some hand conditions such as tendonitis and generalized hand pain does not rely on advanced imaging results and many patients will improve within a few weeks or months with conservative care. [5, 7, 14] However, for some hand conditions (e.g. suspected tendon tears, suspected ulnar collateral ligament tear, complex fractures), 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. [3]

For many hand 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 possess their own set of significant risks.

References

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