

Evidence Discussion (MS-21)

Wrist

For the vast majority of wrist conditions, a diagnosis can be made based on a detailed history, physical examination and plain radiographs. [1, 2, 8] Advanced imaging is typically not necessary for the initial evaluation. Multiple articles have shown advanced imaging can often demonstrate wrist abnormalities in asymptomatic patients [5, 6, 7, 10, 11] and that the prevalence of asymptomatic abnormalities increases with age. [5, 6, 10, 11] Lordach, et. al. concluded the prevalence of incidental TFCC findings in MRI scans of asymptomatic subjects is high. [11]. Also concluded was the presence of an abnormal TFCC on MRI may be of questionable clinical meaning, because there is a high incidence of TFCC abnormalities in asymptomatic subjects, particularly those over the age of 50. [11] Advanced imaging incidental findings can possibly lead to overtreatment with referral to specialists and possibly unnecessary surgery. [8]

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 wrist conditions are supported in the literature [1, 2]. The American College of Radiology Appropriate Use Criteria also recommends initial plain x-rays prior to advanced imaging for both chronic wrist pain and acute wrist trauma [3, 4]. It is also noteworthy that when MRI is necessary, radiographs are considered an essential, initial complementary study for the reading of musculoskeletal MRIs. [12]

Treatment for many wrist conditions does not rely on advanced imaging results and many patients will improve within a few weeks or months with conservative care. [8, 13-15] However, for some wrist conditions (e.g. suspected tendon tears, suspected scaphoid fracture, issues after wrist 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. [9]

For many wrist 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.

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