Acute Hand and Wrist Trauma

Injuries to the hand and wrist are common reasons for emergency room visits. X-rays are almost always the first imaging test used to evaluate the damage.

For blunt or penetrating types of injury, x-rays are usually enough to find any injury to tendons and bone. When injury is suspected but is not seen on the first x-ray, the next imaging tests that are usually appropriate include repeat x-ray in 14 days and CT or MRI without intravenous contrast (dye injected into the vein).

For wrist fractures seen on x-ray with suspected tendon or ligament damage, the next appropriate imaging can be MRI, ultrasound (US), MR, or CT arthrography (https://www.radiologyinfo.org/en/info/arthrog) (pictures taken after injection of contrast dye into joint). For hand fractures with suspected tendon or ligament damage, US and MRI without contrast are usually appropriate.

When an initial x-ray shows the wrist displaced from normal position without a fracture, CT and MRI of the wrist without contrast and MR arthrography are usually appropriate next imaging tests. CT arthrography may also be appropriate. When the hand is displaced from normal position, MRI without contrast or US is usually appropriate.

For penetrating injuries to the soft tissues of the hand or wrist not seen on x-ray, CT without contrast and US are usually appropriate next imaging tests. MRI without contrast may also be appropriate.

— By Shannon Rose, MPH, and Karin Dill, MD. This information originally appeared in the *Journal of the American College of Radiology*.

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