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HS5: MRI IN THE ACUTE WRIST INJURY

Richard Page T Partsalis

Abstract

MRI is increasingly used in acute wrist injuries but limited information exists regarding the impact on injury management. The aim of this study is to review the injury patterns, including scaphoid injuries and the impact on management and outcome when using MRI in the acute setting.

We analysed the injury patterns presenting after an acute wrist injury where a scaphoid fracture might be suspected and a plain x-ray was normal. We assessed the true incidence of scaphoid fractures in this setting and the pattern of other injuries when investigated by early MRI. All acute injuries referred for an MRI from August 2004 to August 2007 were screened. The scans were done on average 6 days post injury (range 1–21 days). These were analysed and the films reviewed including a review of the medical records for injury, subsequent treatment details and outcome.

Over a three year period a total of 218 patients were referred for a wrist MRI. Of these 110 (50.4%) were for suspected fractures of the scaphoid and 89 (81%) had a scaphoid MRI series done involving T1 and T2 fat saturated sequences with a scan time of five minutes. The remainder had a full six-sequence wrist MRI, with a scan time of 25 minutes. Overall the positive scaphoid fracture rate was 24% with mainly un-displaced waist fractures identified. The scans were completely normal in 33% removing the need for any further intervention. In 10% bone contusion was identified and a splint was provided for comfort. Of the associated injuries, 33% had associated fractures in the radius, ulna styloid, other carpal or metacarpal bones. In 12% an acute ligament injury was identified with scapho-lunate injury the most common in 8 cases. Additional bone contusion was seen in 20% of patients with an occult fracture. In 76% of wrist injuries with a normal x-ray, an MRI of the wrist lead to a change in the management plan. MRI use has significant positive socio-economic implications for the mainly younger working patients that present with these injuries, with a projected saving of over $80,000 over the period. It is an excellent second line investigation that provides clinically relevant information and can be performed on the day of injury.

Footnotes

The abstracts were prepared by David AF Morgan. Correspondence should be addressed to him at davidafmorgan@aoa.org.au
Declaration of interest: a