MR imaging for traumatic tears of the rotator cuff: high prevalence of greater tuberosity fractures and subscapularis tendon tears

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OBJECTIVE
The purpose of this study was to determine whether occult bony injuries or other characteristic MR abnormalities are frequent in patients suspected of having traumatic tears of the rotator cuff.

SUBJECTS AND METHODS
MR arthrography of the shoulder was performed in 24 consecutive patients with suspected traumatic tears of the rotator cuff. MR findings were analyzed with regard to abnormalities of the supraspinatus, infraspinatus, and subscapularis tendons; and the humeral head. A comparison group of 24 consecutive patients with symptoms of nontraumatic tears of the rotator cuff was included in the investigation.

RESULTS
Radiographically occult fractures of the greater tuberosity were found in nine (38%) of 24 patients with clinically suspected traumatic tears of the rotator cuff (seven of which occurred in patients <40 years old). Nine partial-thickness and five full-thickness supraspinatus tears were found in the trauma group. In the comparison group, the corresponding numbers were 13 and 10, respectively. Seven partial lesions of the cranial border of the subscapularis and six complete subscapularis tears (all six in patients >40 years old) were found in the trauma group (nine and one in the comparison group).

CONCLUSION
Occult greater tuberosity fractures and complete subscapularis tears are commonly seen on MR images in patients suspected of having traumatic tears of the rotator cuff. Greater tuberosity fractures should be looked for specifically in patients younger than 40 years, and subscapularis tears should be looked for specifically in patients older than 40 years.

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