

Browser's notes

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Magnetic resonance imaging of bilateral hands is more optimal than MRI of unilateral hands for rheumatoid arthritis.

Mo YQ, et al.

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Unilateral MR imaging of either the dominant or more actively involved hand has been suggested as a time/cost savings method to determine disease activity of patients with rheumatoid arthritis (RA). In this study, the frequency of MR detectable hand/wrist rheumatoid arthritis (RA) synovitis, osteitis and erosion, as judged by the RAMRIS (rheumatoid arthritis MRI scoring) system, was compared for unilateral and bilateral MR imaging. Pre- and post-contrast MR imaging of both hands of 138 consecutive patients with active RA of was performed simultaneously at 3 T with the hands prone, side by side, within an 8 channel head coil (total imaging time 23 ± 5 min). Using a 128 mm FOV and 0.4 mm in-plane resolution, the wrists to MCP joints could be included in 120 (87%) patients (mean age 52 years, range 44–61 years; 79% female); the entire MCP region could not be imaged for the excluded 18 patients (13% failure rate). Laboratory and clinical evaluations (DAS28-CRP score) were used to classify disease activity as high (52% of patients), moderate (35%), or low (13%). RAMRIS scores of each hand and wrist were performed independently by 2 radiologists blinded to clinical information. MR imaging of the 240 wrists found synovitis in 98% and osteitis in 95% while clinical swelling and tenderness were found in only 24% and 46%, respectively, with nearly half of the MR detected disease not noticed on physical examination. Based on scoring of both hands as the standard, unilateral imaging of only the dominant side missed 5% of wrist synovitis and osteitis, and for the 2nd – 5th MCP joints, 5%– 11% of synovitis, 9% – 12% of osteitis, and 8% – 14% of erosions. Similar findings were seen using scores for only the side with the greatest activity selected by clinical examination with 5% and 4% of

wrist synovitis and osteitis missed, respectively. For the 2nd – 5th MCP joints of the clinically most active hands, 7% – 12% of synovitis, 8% – 13% of osteitis and 11% – 15% of erosions were missed. Interestingly, the RAMRIS scores for the opposite hands/wrists (clinically determined to be less or equally involved) were often higher than the selected side for synovitis (44%), osteitis (53%) and erosion (48%). The authors recommend simultaneous, bilateral MR imaging for the most accurate determination of RA disease activity noting that physical examination may not select the hand with the higher degree of MR apparent disease. They also acknowledge their study included only a small number of subjects with early disease and did not investigate longitudinal change.

Prevalence of asymptomatic Achilles tendinosis.

Noback PC, et al.

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Since most patients suffering from Achilles tendon ruptures have abnormal tendons but no pre-injury symptoms, this study evaluated asymptomatic volunteers for the prevalence of tendon abnormalities. Fifty-one asymptomatic volunteers (mean age 27.4 years, range 22–54 years; mean BMI 23.5, range 17–35; 30 female) had ultrasound imaging of both Achilles tendons (102 tendons) and physical examination for gastroc equinus contracture (Silfverskiöld test- positive for equinus if ankle does not dorsiflex beyond 90 degrees when the knee is extended). The participant-reported International Physical Activity Questionnaires (IPAQ long form) showed 92% were moderately or highly active. US revealed 16/102 tendons had one or more abnormalities. Hypochoic foci were found in 10 (9.8%) while 9 (8.8%) had calcifications, 1 (0.9%) each showed abnormally high vascularity or low-grade interstitial tearing. The tendon thickness ranged from 0.25–5.7 cm, mean 0.57 cm. Although gastroc equinus has been proposed as a cause of Achilles tendinosis, there was no significant

correlation between positive Silfverskiöld testing and hypoechoic foci on US (present in 14.7% of patients with gastrocnemius vs. 8.6% without). There was no gender difference for the prevalence of hypoechoic foci on US or for the presence of gastrocnemius contracture on exam. Multivariate analysis found that only BMI significantly correlated with US detected tendon abnormalities. The authors suggest that prophylactic physical therapy directed at the Achilles tendon for active patients with US abnormalities may be indicated to prevent Achilles tendon

rupture, however, further research is needed to prove the effectiveness of preventive therapy.

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