15–20 synovial biopsies per knee were obtained. After H&E staining, synovial tissue samples were microscopically scored on features: synovial lining layer hyperplasia/enlargement, activation of resident cells/stroma and degree of inflammatory infiltrates. Each feature was scored from 0–3 and a total sum score per patient was devised. Mean total scores (0–9) by three observers were used.

Saggital and axial T1-weighted CE MRI images (3T) were used to semi quantitatively score synovitis at 11 different sites according to Guermazi *et al*, ranging from 0–22.[1] Self reported pain was assessed by visual analogue scale (VAS, 0–100). Pearson correlations adjusted for age were used for correlation between total histology synovitis score and total MRI score. Spearman ρ correlations were used for correlation between total histology score and macroscopic features. Both were calculated by SPSS 16.0.

Results The mean (SD) synovitis score on MRI was 7.8 (3.9), representing a mild synovitis and mean (SD) histology score was 2.1 (1.5). Median (range) score of macroscopic features (0–4) were 2.0 (1.0–4.0) for neovascularisation, 1.0 (0.0–3.0) for hyperplasia, 2.0 (0.0–4.0) for villi and 2.0 (0.0–3.0) for fibrin. Synovitis score on MRI correlated significantly with microscopic synovitis score (r=0.5, p=0.019] and macroscopic neovascularisation score (r=0.6, p=0.002) and hyperplasia (r=0.4, p=0.40). Furthermore statistically significant correlation between microscopic synovitis score and macroscopic neovascularisation (r=0.5, p=0.012) existed. No significant correlations with VAS pain were seen.

Conclusions Synovitis severity on T1 weighted CE MRI images is significantly correlated with both macroscopic and microscopic features of synovitis in patients with knee OA. No association with severity of pain was seen. Therefore, CE MRI evaluation is a reliable, non invasive way to determine synovitis severity in OA patients.

REFERENCE
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12 DEGREE OF SYNOVITIS ON MRI IS CORRELATED WITH HISTOLOGICAL AND MACROSCOPIC FEATURES OF SYNOVIAL TISSUE INFLAMMATION IN KNEE OSTEOARTHRITIS

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Background and objectives Synovitis is often present on MRI of OA knees and is an important determinant of pain. To better understand the nature of synovitis seen on MRI the authors compared microscopic and macroscopic features of synovial tissue inflammation with synovitis grade on contrast enhanced (CE) MRI.

Methods and methods Twenty-two patients (mean age 61±7 years, 73% women, mean BMI 30±5 kg/mm^2) with symptomatic radiographic knee OA attending the rheumatology outpatient clinic were included. Arthroscopy of the index knee was performed and macroscopic features (neovascularisation, villi, fibrin and hyperplasia) were scored (0–4). Furthermore,