SAT0201 IMPROVEMENT OF MYOSITIS OSSIFICANS CIRCUMSCRIPTA DIAGNOSIS BY MAGNETIC RESONANCE IMAGING

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Background Myositis ossificans circumscripta (MOC) is a focal benign heterotopic ossification in musculoskeletal tissues, often occurring in young adults. Early stages of MOC may be mistaken for infection or malignancy. Since magnetic resonance (MR) imaging has now a key role in the diagnosis of soft tissue masses, MR features of MOC have to be recognised.

Objectives To compare the different features of MOC, as shown by the different imaging modalities (plain radiographs, computed tomography (CT) and MR examinations).

Methods 19 cases (M/F: 0.9, mean age: 32 years) of MOC from several hospitals in Paris were retrospectively studied with a special focus on imaging features. Diagnosis of MOC was based upon clinical and radiological criteria. Pathological examination was also obtained for 6 patients. The lesions were analysed for margin definition, MR signal intensity, surrounding oedema and contrast enhancement.

Results Post contrast enhancement was observed in the peripheral typical rim-like ossification, whatever the stage of the MOC. Enhancement of the calcified rim in mature lesions was an unexpected finding, since, to our knowledge, no mature calcified or ossified musculoskeletal lesions disclose such enhancement. The surrounding oedema was frequently observed on CT or RM examinations. It appeared in 3 patients as uncommon concentric intramuscular streaks. Oedema extension did not correlate with the early or mature stage of MOC. Synovitis or articular effusion were seen for 4 patients when MOC was located close to a joint.

Conclusion In this study, imaging patterns of MOC, specially MR imaging, could be analysed. Interestingly, original findings could be observed, which could help early diagnosis, thus avoid needless invasive procedures.

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SAT0202 SHORT-TERM EROSION PROGRESSION ON MAGNETIC RESONANCE IMAGES IS HIGHLY CORRELATED WITH LONG-TERM RADIOGRAPHIC PROGRESSION IN RHEUMATOID ARTHRITIS WRISTS

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Background

Objectives In patients with rheumatoid arthritis (RA) to compare the development of wrist joint bone erosions on conventional radiography (CR) performed annually for 5 years with erosions

detected by magnetic resonance imaging (MRI) at baseline and 1-year follow-up.

Methods Fifteen patients with RA (disease duration 0.5-20 years, median 1.5 years) were followed for 5 years. MRI of the dominant wrist was performed at year 0 and 1, and CR at years 0, 1, 2, 3, 4 and 5. In each image set, the number of wrist bones (metacarpal bases, carpal bones, radius and ulna) with erosions was determined.

Results The number of bones with erosions detected by CR and MRI at the different time points are shown in the Table 1. The total number of CR-erosions at baseline and after 5 years, compared with the number of MRI-erosions at baseline, were 21% and 64%, respectively.

The MRI-erosion score at 1 year was the parameter from the initial 1 year of follow-up, that showed the closest statistical correlation with the radiographic erosion score at 5 years ($\rho = 0.67$, $p = 0.006$), while corresponding correlations for radiographic erosion scores at baseline and 1 year were $\rho = 0.41$ ($p = 0.12$, NS) and $\rho = 0.60$ ($p = 0.02$).

The erosive progression rate on radiographs during the 5 years (CR 5 minus CR 0) was significantly correlated with the MRI erosive progression rate during the initial year (MRI 1 minus MRI 0) ($\rho = 0.64$, $p = 0.01$), and, more weakly, with the corresponding 1-year radiographic progression rate ($\rho = 0.56$, $p = 0.03$).

Abstract SAT0202 Table 1

	MRI 0 (baseline)	MRI 1 (year 1)	CR 0 (baseline)	CR 1 (year 1)	CR 2 (year 2)	CR 3 (year 3)	CR 4 (year 4)	CR 5 (year 5)
Number of bones with erosions	89	108	19	28	32	44	47	57
% of erosions at MRI 0	-	-	21%	31%	36%	49%	53%	64%

CR: conventional radiography; MRI: magnetic resonance imaging.

Conclusion In the present study, short-term (1-year) MRI progression was highly significantly correlated with long-term (5 year) erosive progression. The study suggests that MRI is more useful than radiography itself for prediction of long term radiographic joint damage in rheumatoid arthritis.

SAT0203 VALIDATION OF A NEW SINGLE-PHOTON SYSTEM OF RADIOABSORPTIOMETRY OF THE PHALANX FOR MEASUREMENT OF BONE MINERAL DENSITY

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Background A new method for the measurement of bone density of the phalanx using digitised conventional X-ray films of the hand has been developed in our centre.

Objectives To test the reliability and internal validity (test-retest) of this method, especially regarding the digitalisation process