AB0789

APPLICATIONS OF LOW-FIELD MAGNETIC RESONANCE IMAGING IN A RHEUMATOLOGY DEPARTMENT

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Background: Low-field MRI (LF-MRI) is a useful Imaging technique for the diagnosis and in the follow-up of high-impact rheumatologic pathology¹. However, the use of the Low-field MRI is not widespread due to the high cost and the use of other techniques such as Musculoskeletal sonography². The Rheumatology Unit of the HUVU owns a Musculoskeletal Imaging Unit (ECO /MRI) and a standardized protocol for LF-MRI³, which is performed by a rheumatologist applied in a routine clinical practice. We describe the patterns of use of LF-MRI by general rheumatologists in their routine clinical practice.

Objectives: Perform an analysis of the use of LF-MRI in a Rheumatology department to the assessment of joint inflammatory activity. Correlate the results of the analyses in patients without diagnosis or patients with unclear diagnosis.

Methods: Retrospective analysis using the medical records of the patients referred to the Musculoskeletal Imaging Unit from January to June 2018. The main variables collected were reason for referral as well as previous and final diagnosis after LR-MRI. An evaluation on the usefulness of MRI is made twelve months later to establish the diagnosis.

Results: The global population studied of 114 patients were referred to for LF-MRI. 81 females (71%). The 80% of the patients with previous diagnostic 40% Rheumatoid Arthritis (RA), 24% Psoriatic Arthritis (PAs), 16% other rheumatic diseases, and the remaining 20% with an unclear diagnosis. The most frequent reasons for referral were: 1) A total of patients (female and male) was referred to assessment of inflammatory activity prior to the change of treatment and 2) assessment of subclinical activity in patients with optimized treatment. A total of 23 patients (16 female; 7 male), were referred for diagnostic evaluation or differential diagnosis: 7 arthralgias, 6 suspected psoriatic arthritis, 6 with undiagnosed joint inflammation, 2 for differential diagnosis, 1 suspected of juvenile idiopathic arthritis (JIA), and 1 tendinitis. (Table 1)

Table 1. Undiagnosed patients. Post-imaging diagnosis.

	TENO SYNO- VITIS	NO DIAG	MONO ART- HRITIS	CARPAL OA	RULE OUT TUNNEL	PLAN- TAR FASCI- TIS	OS TRI- GO- NUM
ARTHRALGIAS	1	1	1	0	0	1	0
SWOLLEN JOINT WITHOUT DIAGNOSIS	0	1	1	1	2	0	0
DIFFERENTIAL DIAGNOSIS	0	0	1	0	1	0	0
SUSPECTED PAs	0	2	1	0	0	1	0
SUSPECTED JIA	0	0	0	0	0	0	0
TENDINITIS WITHOUT DIAGNOSIS	1	0	0	0	0	0	0
Total	2	4	4	1	3	1	1

Conclusion: The results of our study shown that the addition of the LF-MRI into clinical practice and performed by a rheumatologist is a useful tool in the diagnosis and evaluation of the degree of disease activity in patients with joint inflammatory pathology. The main test-indication of these techniques is to assess the degree of activity of the disease. In a 20% of the cases, the LF-MRI was requested for diagnostic evaluation in patients without a clear diagnosis. The long-term follow-up studies that correlate symptoms with structural damage are necessary to define remission more accurately and evaluate the efficiency of different treatment options.

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AB0790

ULTRASOUND-GUIDED VERSUS ANATOMICAL LANDMARK INJECTION OF THE SHOULDER JOINT; A RETROSPECTIVE STUDY

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Background: Ultrasound is a widely used tool for diagnostic and interventional purposes for a myriad of musculoskeletal conditions. The question about the value of ultrasound-guided injection over blind injection is debatable [1, 2].

Objectives: To test the value of ultrasound-guided injection versus blind sub-acromial-subdeltoid bursitis, subcoracoid bursitis, long head of biceps synovial sheath, and intra-articular shoulder injection.

Methods: We included 168 participants (66 subacromial-subdeltoid bursitis, 52 subcoracoid, 10 with long head of biceps tenosynovitis 38 had adhesive capsulitis and performed intra-articular shoulder injection) half of them were injected by blind technique and the other half were injected under ultrasound guidance. All of them were diagnosed by ultrasound. All were injected with methylprednisolone acetate 40 mg (Solumedrol, Pfizer) + lidocaine hydrochloride 1% (Xylocaine Astra Zeneca), 2ml. SPADI score and range of motion were performed before injection and immediately after the injection, after 2 weeks, and after 4 weeks. Further, complications were recorded immediately after the injection, after 2 weeks, and after 4 weeks.

Results: The mean age of the study group was around 35.5 years, with no significant difference between the two groups, with slightly male predominance (60.7%). The mean SPADI score was similar between the groups before injection, but the improvement was higher among ultrasound-guided group compared to anatomical landmark-guided group, as showed by the significant difference between the two groups regarding SPADI scores at 2 and 4 weeks post-injection. Regarding the improvement of the range of motion, the ultrasound-guided group showed significantly better improvement compared to the anatomical landmark-guided one all over the 4-week course of follow up. The complication rate was slightly higher among the landmark-guided group, but with non-significant difference (Table 1). The difference between the two groups was highest among adhesive capsulitis cases with intra-articular injection.

Conclusion: Ultrasound-guided injections showed better outcomes for all the 4 injections, especially for intra-articular injection, in addition, it showed a significantly less complications than blind injection.

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Table 1. Comparison between the two groups

	Ultrasound - guided (n=84)	Anatomic land- mark - guided (n=84)	P value
Age	35.4±9.5	36.0±9.5	0.643
Sex	Male 49(58.3%) Female 35(41.7%)	53(63.1%) 31(36.9%)	0.527
Site	Subacromial- subdeltoid bursitis Subcoracoid Long head of biceps tenosynovitis Adhesive capsulitis	33(39.3%) 26(31%) 5(6%) 19(22.6%)	0.998
SPADI score	Pre-injection 55.8±9.4 Immediately 48.6±8.2 post-injection 2 weeks 44.9±10.1 post-injection 4 weeks 42.4±9.7	54.7±10.1 51.2±8.9 49.6±9.3 47.6±7.8	0.466 0.051 0.002 0.001
Range of motion improvement (percent)	Immediately 33.6±9.7% post-injection 2 weeks 37.2±8.5% post-injection 4 weeks 40.1±7.3%	29.4±11.2% 32.7±9.9% 33.6±8.3%	0.010 0.002 <0.001
Complications	Pain 12(14.3%) Bleeding 3(3.6%) Vasovagal attack 4(4.8%)	19(22.6%) 8(9.5%) 3(3.6%)	0.164 0.119 0.699

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