REFERENCES

[1] Greenberg D.L. 2014
[2] Rechardt M. et al. 2010
[3] Teunis T, et al. 2014
[4] Armstrong A. 2014
[5] Lenza M, et al. 2013
[6] Middelton WD, et al. 2004
[7] Mathias R, et al. 2018
[8] Gatt DL, et al. 2014
[9] Booker S, et al. 2015
[10] Alfahad N, et al. 2015
[11] Le Goff B. et al. 2010
[12] Lansdown DA, et al. 2012
[13] Mantone JK, et al. 2000
[14] Gialanella B, et al. 2013
[15] Titchener AG, et al. 2014
[16] Namdari S, et al. 2014
[17] Boissonnault WG, et al. 2007
[18] Abboud JA, et al. 2010
[19] Lui PPY, et al. 2017
[20] Gumina S, et al. 2013

Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2019-eular.3454

AB1124 PREDICTIVE VALUE OF MRI FOR CT-GUIDED POSITIVE BIOPSY IN SUSPECTED INFECTIOUS SPONDYLODISCITIS

Aicha Ben Tekaya[1], Lobna Ben Ammar[1], Olfa Saidane[1], Rawdha Tekaya[1], Mohammed Ben Hammamia[2], Ines Mahmoud[1], Leila Abdelmoula[1]. *[1]Charles Nicolle Hospital, Rheumatology, Tunis, Tunisia*; *[2]Charles Nicolle Hospital, Cardiovascular Surgery, Tunis, Tunisia*

Background: Spondylodiscitis is a potentially life-threatening infection burdened by high morbidity rates. MRI remains the key examination in the diagnosis of infectious spondylodiscitis. The microbiological diagnosis is the main predictive factor for successful treatment.
Objectives: To evaluate the MRI characteristics associated with the detection of microbial pathogens by computed tomography (CT) guided biopsy in case of suspicion of infectious spondylodiscitis.
Methods: Retrospective study including all patients hospitalized in our department between 1999 and 2019 and who underwent MRI and CT-guided biopsy for suspicion of septic spondylodiscitis.The diagnosis was based on clinical, biological, radiological and bacteriological data. We divided the patients into two groups: patients with a non-contributory CT guided biopsy (group 1) and patients with a contributory biopsy (Group 2).
Results: We included 82 patients including 37 women and 45 men with a mean age of 56 years old [16 - 86]. The median delay of consultation was 3 months. Inflammatory back pain was reported in 78% of cases. Neurologic deficiency was noticed in 19.5% of cases. The lumbar spine was involved more than 50% of cases. Spinal MRI was performed to all patients and showed paravertebral abscess in 64.6%, epiduritis in 62.1%, intra-discal abscess in 3.6%, spinal cord compression 10.9%, and vertebral ostelysis in 6.09% of cases.The causative microorganism was mycobacterium tuberculosis in 53.6%, brucella in 24.3%, and pyogenic germs in 15.8% of cases. Disco vertebral biopsy was performed in 55 patients and was contributory in 45.4% of cases.
The presence of spinal cord compression, intra-discal abscess and vertebral osteolysis was more frequent in group 2, but with no statistically significant difference (p = 0.65, 1 and 0.58; respectively). In addition, there was no significant difference in the presence of paravertebral abscess and epiduritis (p = 0.41 and 0.53; respectively).
Conclusion: Spondylodiscitis is an emergency which must be diagnosed on time to avoid life threatening complications, neurological sequelae and spinal deformities.

Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2019-eular.8134

AB1125 LESS SEVERE SYNOVITIS IN PATIENTS WITH KNEE OSTEOARTHRITIS IS ASSOCIATED WITH HIGHER SELF-REPORTED PAIN INTENSITY 12 MONTHS AFTER TOTAL KNEE ARTHROPLASTY – AN EXPLORATORY COHORT STUDY

Kristian Kjær Petersen[1], Lars Arent-Nielsen[1], Mikael Boesen[2], Jonathan Vela[3], Soeren Skou[4], Mikkel Eld[5], Nasir Musa Al-Mashkur[5], Robert Riis[6], Ole Simonsen[7]. *[1]SMI, Department of Health Science and Technology, Faculty of Medicine, Aalborg University, Aalborg, Denmark, Aalborg, Denmark*; *[2]Bispebjerg and Frederiksberg hospital and Copenhagen University, Radiology, Copenhagen NV, Denmark*; *[3]Aalborg University hospital, Department of Clinical Medicine and Rheumatology, Aalborg University Hospital, Aalborg, Denmark*; *[4]University of Southern Denmark, Odense and Næstved-Slagelse-Ringsted Hospitals, Region Zealand, Department of Sports Science and Clinical Biomechanics and department of Physiotherapy and Occupational Therapy, Odense, Denmark*; *[5]Aalborg University hospital, Department of Pathology, Aalborg, Denmark*; *[6]Bispebjerg and Frederiksberg Hospital, Copenhagen University, Radiology and the Parker Institute, Frederiksberg, Denmark*; *[7]Aalborg University hospital, Department of Orthopedic Surgery and clinical medicine, Aalborg, Denmark*

Background: Synovitis is a pain generator in patients with osteoarthritis and associated with upregulation of pro-inflammatory cytokines, which have been found to lead to pain sensitivity and worse self-reported pain (1).
Objectives: This study aimed to investigate the association between pre- and perioperative synovitis from imaging and histology and self-reported pain 12 months after total knee arthroplasty (TKA).
Methods: Preoperative synovitis was assessed from MRI data of the knee by 11 point synovitis score a.m Guermazi (2) using contrast enhanced MRI (CE-synovitis) and heuristic time intensity curve analysis of the dynamic contrast enhanced MRI (DCE-MRI) data using the DYNAMIKA® software (Image Analysis group, London) providing Dynamic Enhanced MR Quantification (DEMRIQ) Indices (3). Perioperative synovitis was also assessed from biopsies of the synovium in 6 predefined places graded histologically a.m Krenn (4). Worst pain within the last 24-hours (visual analog scale, VAS, 0-100) was assessed before and 12 months after TKA. Patients were divided into a low-pain (VAS≤30) and a high-pain (VAS>30) group based on 12-months postoperative VAS.
Results: Twenty-six patients had full pre- and postoperative data and were analysed. The high-pain group had significantly lower CE-synovitis (P=0.03), DCE-MRI inflammation indices (DEMRIQ-inflammation) (P<0.03) and a trend towards lower histologically assessed synovitis grades (P=0.077) compared to the low-pain group at baseline. Preoperative synovitis scores were also inversely correlated with pain 12-months after TKA, CE-synovitis (R = - 0.455, P = 0.022) and DCE-MRI inflammation (R = - 0.528, P = 0.007), indicating that more severe preoperative synovitis is associated with less severe pain at 12-months.
Conclusion: Higher preoperative synovitis scores are associated with less postoperative pain 12-months after TKA. Further, correlation analysis revealed that less severe preoperative synovitis was associated with worse pain 12-months after TKA, suggesting that CE and DCE-MRI synovitis quantification could be used as imaging markers for prediction of good surgical outcomes.

REFERENCES

[1] Schaible HG. Nociceptive neurons detect cytokines in arthritis. Arthritis Res. Ther. 2014:470.
[2] Guermazi A, et al. Assessment of synovitis with contrast-enhanced MRI using a whole-joint semiquantitative scoring system in people with, or at high risk of, knee osteoarthritisAnn. Rheum. Dis. 2011
[3] Riis RGC, et al. The association between histological, macroscopic and magnetic resonance imaging assessed synovitis in end-stage knee osteoarthritis Osteoarthr. Cartil. 2017;
[4] Krenn V, et al. Grading of chronic synovitis-a histopathological grading system for molecular and diagnostic pathology. Pathol. Res. Pract. 2002

Acknowledgement: Image Analysis Group, for providing DYNAMIKA software and support for the DCE-MRI/DEMRIQ analysis
Disclosure of Interests: Kristian Kjær Petersen: None declared, Lars Arent-Nielsen: None declared, Mikael Boesen Shareholder of: Image Analysis Group, UK, Grant/research support from: Image Analysis Group, UK, OAK Foundation, EUROSTAR, Consultant for: Esaote, Eli Lilly, Celgene,

Carestream, UCB, Abbvie, Pfizer, Astra Zeneka, Roche, Siemens, Image Analysis Group, Jonathan Vela: None declared, Soeren Skou: None declared, Mikkel Eld: None declared, Nasir Musa Al-Mashkur: None declared, Robert Riis Consultant for: Image analysis Group, Ole Simonsen: None declared

DOI: 10.1136/annrheumdis-2019-eular.5695

AB1126 ULTRASOUND CHANGES IN PATIENTS WITH CALCIFICATIONS IN THE SUPERSPINATUS TENDON BEFORE AND AFTER THE DEVELOPMENT OF A SUBACROMIAL PAINFUL SYNDROME

Carlos Guillén-Astete, Andrea Briones-Figueroa. *Ramon y Cajal University Hospital, Madrid, Spain*

Background: The relationship between subacromial syndrome (SS) and the presence of calcifications in the thickness of the superspinatus tendon is complex. It is undeniable that the presence of a solid body hinders the movement of the rotator cuff through the subacromial space and to some extent contributes to the trapping that conditions pain and functional limitation, but, on the other hand, calcifications in the thickness of the supraspinatus tendon are incidental findings that have no clinical significance or whose presence precedes the painful syndrome in months or years. We understand that in a SS related to calcification, it contributes as an irreducible agent that conditions an inflammatory response of the tendon when it attempts to cross the subacromial space, however, there are no studies available that explain this relationship from a sonoanatomic perspective.
Objectives: To determine the extent to which the disposition and characteristics of a calcification of the supraspinatus tendon, or of the tendon itself, are modified when an SS is triggered.
Methods: A quasi-experimental, "before-after" study was conducted with individuals who presented a SS and in whom incidental calcification in the TSE had been previously diagnosed in an ultrasound study. Demographic data and static images from the ultrasound studies of each patient were compared. The explanatory variable was time (before-after) and the response variables in image were: (1) Increased tendon thickness measured at 30mm from the deep edge of the acromion (GROSORB), (2) Increased tendon thickness measured at the height of the middle of the longitudinal axis of the calcification (GROSORC), (3) Longitudinal axis of the calcification (LONGC), (4) Thickness or height of the calcification, when this was measurable (ALTC), and (5) Distance between the calcification and the deep end of the acromion (DISTC). In addition, two indices were determined: (a) Increased tendon thickness in the calcification zone (GROSORC/GROSORB) and (b) proportion of tendon thickness occupied by calcification (ALTC/GROSORC). The measurements were carried out using the software of the equipment in which the original and subsequent study was made (GE Logiq e; Toshiba Nemio XG).

Variables measured by ultrasound assessment	Before measurements	After measurements	T Student (paired data)
ALTC (N=20) mm	5.075 DE 1.055	5.160 DE 0.994	0.0073
LONGC mm	6.184 DE 2.414	6.236 DE 2.446	0.1066
GROSORB mm	6.348 DE 0.691	6.436 DE 0.674	0.1285
GROSORC mm	6.845 DE 0.718	7.263 DE 0.872	0.0003
GROSORC/GROSORB	1.082 DE 0.085	1.129 DE 0.069	0.0072
ALTC/GROSORC	0.748 DE 0.164	0.716 DE 0.130	0.0611

Results: The "before" ultrasounds were performed between 2012 and 2016 and the "after" ultrasounds between 2015 and 2018. The time fashion between the two ultrasounds for each patient was 2 years. Thirty-three subjects were included, with an average age of 47.5 SD 7.6 years. Proportion of women 66.6%. Proportion of dominant shoulders (51.1%).
As shown in table 1, the most significant changes were the thickness of the tendon measured at the height of the middle of the longitudinal axis of calcification and the increase of this measure with respect to the thickness measured at 30mm from the deepest region of acromion (GROSORC/GROSORB). Although the calcification height also showed a statistically significant increase, it could only be measeured in 20 of the 33 subjects.
In the correlation tests, the GROSORC/GROSORB index increase correlated strongly with the DISTC (Coef. Pearson 0.686, P<0.01) and with the longitudinal diameter of the calcification (LONGC) (Coef. Pearson 0.797, P<0.01).

Conclusion: The most important factor that explains the development of an SS associated with calcification is the increase in tendon thickness at the height of the calcification itself and, at the same time, this measure increases when the calcification is more lateralized and the more elongated its longitudinal diameter. These modifications could have implications when deciding the therapeutic management of these processes.
Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.5918

AB1127 ULTRASOUND INTER-READER RELIABILITY OF INFLAMMATORY FINDINGS IN PATIENTS WITH POLYARTHRITIS

Luisa Brites[1], Mariana Santiago[1,2], João Rovisco[1,2], João Dinis de Freitas[1], José Antonio P. Da Silva[1,2], Inês Silva[3], Filipa Teixeira[4], Daniela Faria[4], Cândida G. Silva[5,6], Sandra Falcão[3,7]. *[1]Centro Hospitalar e Universitário de Coimbra, Coimbra, Portugal; [2]Faculdade de Medicina de Coimbra, Coimbra, Portugal; [3]Hospital Egas Moniz, Centro Hospitalar de Lisboa Ocidental, Lisbon, Portugal; [4]Unidade Local de Saúde do Alto Minho, Serviço de Reumatologia, Ponte de Lima, Portugal; [5]Higher School of Health Sciences, Polytechnic Institute of Leiria, Leiria, Portugal; [6]Centro de Quimica da Universidade de Coimbra, Coimbra, Portugal; [7]Faculdade de Ciências Médicas da Universidade Nova de Lisboa, Lisbon, Portugal*

Background: Ultrasonography is an imaging technique that allows rheumatologists to visualise structural and inflammatory changes within a joint.
Objectives: The objective of this study was to assess the inter-reader reliability of interpretation of inflammatory and destructive changes in a wide range of joints in patients with polyarthritis.
Methods: This study was divided in two parts: 1) consensus process and 2) reliability exercise. For the first part, a written questionnaire was sent by email to 6 sonographers from 3 portuguese hospitals with the highest level of competence (EULAR competency assessment level 2). The questionnaire included 17 questions divided in two groups: 1) elementary components in B-mode and Doppler assessment (effusion, synovial hypertrophy (SH), power Doppler (PD), erosions and synovitis definition) and 2) approach at the joint level (the definition of which plan and recess will be assessed in each joint). The participants were asked to rate their level of agreement/disagreement for each statement using a 1-5 Likert scale (1=strongly disagree to 5-strongly agree). For the reliability exercise, video clips of US examinations of 40 joints (wrist, metacarpophalangeal (MCP) from 1 to 5, proximal interphalangeal (PIP) from 1 to 5, knee, tibiotarsal (TT) and metatarsophalangeal (MTP) joints from 1 to 5, elbow and shoulder) from each of 15 patients were collected (showing a multiplanar bilateral ultrasound approach). Each joint in each video was scored by individual ultrasonographers for the presence/absence of elementary components: effusion (Yes/No), SH (No/Grade 1 to 3), PD (No/Grade 1 to 3) and erosions (Yes/No). Inter-reader agreement analysis was assessed through Fleiss' kappa coefficient and classified according to Landis and Koch[8]: κ values 0 were considered poor, 0-0.20 slight, 0.21-0.40 fair, 0.41-0.60 moderate, 0.61-0.80 good and 0.81-1.00 excellent. Statistical significance was defined as p<0.05. Statistical analysis was performed using STATA V.14.
Results: Thirty seven joints of the 600 joints were excluded due to dislocation of the joint or presence of objects (rings/catheters) and the videos of a total of 563 joints were analysed by the 6 ultrasound experts. Inter-reader agreement was superior for TT joints and inferior for wrist; the identification of the erosions had the better agreement in the elementary components (Table 1).

Table 1. Inter-observer agreement for each elementary component and for anatomical region

Elementary component	κ	Joint	κ	Joint	κ
Effusion	0.6044	**Wrist**	0.6767	**Shoulder**	0.7271
Synovial hypertrophy	0.6291	**MCP**	0.6866	**Knee**	0.7192
Power doppler	0.7195	**PIP**	0.7107	**TT**	0.8043
Erosions	0.7314	**Elbow**	0.7291	**MTP**	0.7040

MCP - Metacarpophalangeal joints, MTP – Metatarsophalangeal joints, PIP - Proximal interphalangeal joints, TT-Tibiotarsal joint. All p<0.001

Conclusion: The reliability of interpretation of inflammatory and destructive changes using video clips was in general good to excellent and it was better for erosions and tibiotarsal joint (regarding elementary component and anatomical region, respectively).
Disclosure of Interests: None declared