SP0068 US FOR TROCHANTERIC PAIN SYNDROME – CLINICAL USE + DEMO

Ingrid Möller. University of Barcelona, Instituto Poal de Reumatologia, Barcelona 08022, Spain

Background: Greater trochanteric pain syndrome (GTPS) is a clinical diagnosis with the typical presentation of chronic intermittent lateral hip/thigh/buttock pain, aggravated with activity and when lying on the affected side. There is a lack of valid/specific diagnostic criteria for GTPS. GTPS can be attributed to a multitude of causes ranging from tendinopathy and/or rupture of the gluteal tendons and/or bursitis, to pathological alterations of the iliotibial band/fascia lata and other nearby anatomical structures located on the lateral part of the hip. To further complicate the diagnostic process, according to different studies, the prevalence of GTPS in adults with lower back pain has been found to be between 20-30%. Alterations of the lumbar biomechanics may interfere in the range of internal rotation of the hip and consequently produce a GTPS and vice versa. Changes in hip range of motion will trigger changes in the dynamics of lower extremities and the spine. Generalized myofascial pain can also be a source of confusion when evaluating patients with GTPS.

Objectives: Understand the clinical anatomy of the lateral hip.

Interpret the US images of the lateral hip

Identify potential pain generators of the lateral hip.

Methods: The study of the static and dynamic sonoanatomy of the different components of the lateral region of the hip can contribute in a relevant way to clarify the diagnosis. In the eular guidelines of sonographic musculoskeletal (MSUS) exam published in 2017, the sonographic exam of the lateral hip has been developed in detail and will be discussed during this lecture.

The anatomy against what is often thought is not stagnant knowledge but evolves over the years providing new and useful data applicable in daily clinical practice. The anatomy, both static and dynamic, of the trochanteric region, is complex. For example, the subgluteus maximus bursa, which is frequently incriminated in the GTPS, is located in the posterior facet of the greater trochanter and is related to the iliotibial tract, the fascial contributions of the gluteus maximus and the tensor of the fascia lata muscle to the iliotibial tract and the origin of the vastus lateralis. In order to understand the multifunction and relationships of the different structures of this region means one has to have seen images of them and for that purpose, the human cadaveric dissection is the best tool. Thanks to the fact that the speaker is involved as a professor in the anatomy department at the University of Barcelona, Bellvitge campus, directed by prof M Miguel, the clinical anatomy part will be developed with real dissections made specifically for this lecture.

Results:

Abstract SP0068 – Figure 1

Conclusion: Knowledge of the clinical anatomy needed to understand the relationships between the different structures, the clinical history, and physical examination of GTPS patients and the therapeutic possibilities including ultrasound-guided injections are other steps that lead to an accurate diagnosis of GTPS.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8540

SP0069 HOW TO DIFFERENTIATE MINIMAL DISEASE ACTIVITY IN RA + DEMO

Ilfita Sahbudin. Institute of Inflammation and Ageing, University of Birmingham, Rheumatology Research Group, Birmingham, United Kingdom

Ultrasound (US) is increasingly utilised as a point-of-care tool to diagnose early inflammatory joint disease, monitor treatment response and detect subclinical inflammation. This is feasible as US can detect joint, and tendon, inflammation before it becomes clinically apparent. Despite the increasing use of US in Rheumatology, the key research question yet to be addressed is defining 'the normal reference value at the joint level.'

Improvement in US technology over the last decade results in acquisition of higher resolution images. US can now detect subtle abnormality in joints of healthy individuals who are asymptomatic. Consequently, the imaging boundary between US changes of normal joints (i.e. physiological changes), and those of early arthritis joints (i.e. early pathological changes) has become unclear. In addition, a proportion of US-defined pathology observed in normal joints may be attributed to age-related changes.

Defining the concept of US-detected 'minimal disease' is crucial to enable investigators identify a threshold (or cut-off) to differentiate normal physiological from minimal pathological changes at the joint level. This threshold, subsequently, will be used to evaluate the best sensitivity to detect changes in therapeutic response and assess remission, as well as facilitate diagnosis of early disease.

In order to address this important research question, the OMERACT US SIG has formed the US Minimal Disease Taskforce at the OMERACT 2016 meeting. This collaboration between 24 OMERACT ultrasound centres in 11 countries has successfully recruited more than 600 subjects into the Minimal Disease Study. US data of healthy individuals encompassing synovial hypertrophy, synovial effusion, and Doppler enhancement will be presented.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8579

SP0070 HOW TO PERFORM US-GUIDED INTERVENTIONS + DEMO

Juhani Koski. Mikkeli Central Hospital, Internal Medicine, Mikkeli, Finland

Background: Aspiration and injection of joints and soft tissues is an indispensable skill used in everyday practice by the clinical rheumatologist. These tasks are usually conducted by palpation-guided techniques. These procedures are not always successful (1) and thus US-guided interventions have been developed.

Objectives: Are to explain the effect of needle and sound beam angle on needle visualization, describe different techniques of needle insertion under US guidance, to identify different approaches to the target under US guidance and finally to discuss about the accuracy and efficacy of the ultrasound guided technique.

Methods: There are two common methods for US puncturing: semi-guided or indirect method (skin surface marking) and needle guidance under direct sonographic vision (2,3). The scanning plane is optimized for visualization of the target and penetration of the needle should be at least 0.5cm from the transducer. The movement of the needle in the soft tissue should be followed on the screen during the procedure. The needle appears as a bright echogenic line if the transducer is oriented longitudinally on the needle, and the needle tip may be followed as it reaches the target. If the ultrasound beam is transverse to the needle, the needle is seen as a bright echogenic dot. In case of no visualization of the needle several means are available: steering of the ultrasound beam against the needle (in new machines), curved or virtual convex probe, toeing-in of the probe, shaken the needle slightly and moving the probe a bit from side to side.

Results: According to the clinical and cadaveric studies the ultrasound guided technique is more accurate than the landmark guided technique in the glenohumeral, acromioclavicular, wrist, hand, hip, knee and foot joints and in the tendons of the biceps, wrist, hand, hip, knee and ankle (4). Synovial biopsies are more accurate using an ultrasound guided method (5).

Conclusion: Ultrasound is the most applicable and feasible imaging modality for routine clinical use in guiding musculoskeletal procedures. Though many studies have examined the role of imaging guidance for injection there needs to be more examination of how the use of ultrasound prior to injection can alter the pathological and anatomical diagnosis. There is a trend towards an expanded number of advanced applications of interventional musculoskeletal ultrasound which can also be performed by a rheumatologist like nerve blocks or needling of calcifications. Which ultrasound guided technique (direct or semi-guided) is the most appropriate in different anatomical areas and clinical settings remains to be studied. More studies are needed to show the accuracy and efficacy of ultrasound guided injections in different anatomical areas (4).

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.8519

THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

Interstitial lung disease in rheumatic diseases and systemic sclerosis

SP0071 WIN: SYSTEMIC SCLEROSIS – INNOVATIVE TREATMENT TARGETS OR “LOST IN TRANSLATION”?

Yannick Allanore. *France*

Interstitial lung diseases (ILDs) are a group of heterogeneous disorders, either idiopathic (idiopathic pulmonary fibrosis-IPF) or associated with other diseases, particularly autoimmune diseases, from which systemic sclerosis is the leading disease at risk of developing ILD. It has been proposed that for clinical research and patient management various subsets of fibrosing ILD that have similar biological and clinical behaviours could be merged into a single entity although specificities within each disease remain, with various patterns of lung injury. Nevertheless, the shared part relates to progressive fibrosing ILD leading to progressive decline in lung function and early mortality. In SSC, a recent report from EUSTAR network showed that ILD was nowadays the first cause of death identified as contributing to 17% of deaths (1).

No drugs are licensed for the treatment of ILDs related to autoimmune diseases. Treatment guidelines issued by the European League Against Rheumatism (EULAR) recommend tailored therapy with cyclophosphamide (CYC) for SSC-ILD, in particular for patients with progressive ILD (2). Indeed, 3 randomized controlled trials showed some benefits of using CYC either orally or by infusion route although the effect size was small and the clinical translation of the findings was difficult to establish. The limitations of CYC trials in SSC-ILD led the experts to add that dose and duration of treatment need to be tailored individually dependent on the clinical condition and response. Furthermore, with regards to safety, potential risks of bone marrow suppression, teratogenicity, gonadal failure and haemorrhagic cystitis must be always considered. Beyond standard immunosuppression, the use of high dose CYC, with or without irradiation, but using rescue with stem cells showed some effects on ILD measured through lung function and imaging. Nevertheless, considering the risk of potential treatment-related mortality and morbidity, the EULAR experts recommend that HSCT should be considered for the treatment of selected patients with rapidly progressive SSC at risk of organ failure, two domains which remain to be delineated. Altogether these results suggest that immunosuppressants might be beneficial in the context of SSC-ILD although the right drug, the right dosing and the right patients still need to be defined. In practice, because of SLS2 trial, mycophenolate mofetil has emerged as the leading drug used when a physician aims at treating SSC-ILD. The understanding of SSC and SSC-ILD have improved in the recent years and subset at risk and candidate biomarkers have emerged. Indeed, interleukin 6 has been shown to predict some disease progression including lung involvement. Therefore, targeted therapy against IL6 is an appealing strategy to improve SSC outcomes. If the pivotal trials using tocilizumab had skin as a primary outcome and failed to meet the primary end-point, secondary analyses revealed stimulating lung results that will be showed during EULAR 2019 and discussed within the ILD session. B-cells role has also been scrutinized in SSC with promising data. Therefore, rituximab is used in some SSC patients with various indications according to physician views and experience. EUSTAR has assembled a large group of rituximab treated patients and performed a well-designed observational study that did not show clear evidence supporting some efficacy of rituximab on SSC-ILD although some clues emerged.

The role of antifibrotic drugs (nintedanib, pirfenidone), that showed to slow disease progression in patients with IPF, in patients in other forms of fibrosing ILD remains to be determined. However, several trials are ongoing and the results of

the SENSICIS trial evaluating nintedanib in SSC-ILD will be presented during EULAR 2019 and discussed during the ILD session.

Altogether, the available results show some progresses made in the management of SSC-ILD, so far mainly through the use of treatment targeting immune disturbances. Considering the severity and the complexity of SSC pathogenesis and related lung complication, one might anticipate that if trials of antifibrotic therapies are positive, the treatment of SSC-ILD, and maybe of all fibrosing autoimmune ILDs, might involve combination of immunosuppression and antifibrotic therapies.

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Disclosure of Interests: Yannick Allanore Grant/research support from: Inventiva, F Hoffman La-Roche, Sanofi, BMS, Pfizer, Consultant for: Actelion, Bayer, BMS, Boehringer, Roche, Sanofi

DOI: 10.1136/annrheumdis-2019-eular.8416

THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

Diagnostic challenges in vasculitis

SP0072 IMAGING IN THE DIAGNOSIS OF LARGE VESSEL VASCULITIS

Wolfgang Schmidt. *Immanuel Krankenhaus Berlin, Medical Center for Rheumatology Berlin-Buch, 13125 Berlin, Germany*

Background: Giant cell arteritis (GCA) and Takayasu arteritis (TAK) are large-vessel vasculitides (LVV). Recommendations demanded so far to confirm the diagnosis histologically, particularly in suspected GCA. Biopsy is however invasive, and results are not immediately available. Technology has rapidly improved; and many recent studies suggest that imaging may have comparable diagnostic accuracy.

Objectives: To provide an overview of new developments for ultrasound, magnetic resonance imaging (MRI), computed tomography (CT) and 18-fluorodeoxyglucose positron emission tomography (PET) in diagnosis of LVV and to present new EULAR recommendations on imaging in LVV.

Methods: A systematic literature review and meta-analysis of diagnostic and prognostic studies enrolling >20 patients and investigating ultrasound, MRI, CT or PET in patients with suspected and/or established primary LVV was conducted (1). On this basis, a group of imaging experts, rheumatologists, patients and health care professionals developed EULAR recommendations on imaging in LVV (2). This review refers also to new data after the EULAR recommendations had been published.

Results: In suspected GCA, imaging should be done early, but without delaying treatment. No further diagnostic test (histology or other imaging) is necessary if results of imaging and clinical presentation correspond. Ultrasound of temporal and axillary artery arteries showing a non-compressible 'halo-sign' is the method of first choice in suspected cranial GCA. The meta-analysis showed positive and negative likelihood ratios of 19 and 0.2, respectively, for a final diagnosis of GCA. Good data is also available on MRI of cranial arteries. Ultrasound, MRI, CT or PET can be applied for confirming extracranial GCA. Ultrasound is of limited value for assessing particularly the thoracic aorta. MRI is first choice for suspected Takayasu arteritis, but ultrasound, CT or PET can be also applied. Conventional angiography is not recommended instead for interventions. Imaging might be useful in suspected flare and to monitor damage. There is no convincing evidence to recommend routine monitoring in remission. Imaging should be done by a trained specialist using appropriate equipment.

Particularly ultrasound of cranial arteries showed high diagnostic accuracy in a study for developing new classification criteria. Measuring intima thickness (cut-offs of around 0.4 mm for temporal and 1.0 mm for axillary arteries) may help to improve diagnostic accuracy and to use ultrasound for disease monitoring in trials (3). Reliabilities of sonographers both for evaluating videos and for examining patients directly were very high (4,5). Newer PET technology now allows to also show inflamed temporal, maxillary and vertebral arteries (6). The significance of positive imaging findings in follow-up studies still remains unclear. The incidence of vision loss decreased with the introduction of fast-track clinics. These clinics are increasingly established in centres. They include referral within one working day to a rheumatologist followed by immediate imaging for establishing the diagnosis. Imaging can be done by the rheumatologist (most commonly ultrasound) or by a collaborating department.

Conclusion: Ultrasound, MRI, CT and PET allow to confirm or exclude LVV provided that it is performed by a trained specialist using appropriate equipment. Fast-track clinics using ultrasound are increasingly established in rheumatology.