SP0068 US FOR TROCHANTERIC PAIN SYNDROME – CLINICAL USE + DEMO

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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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SP0069 HOW TO DIFFERENTIATE MINIMAL DISEASE ACTIVITY IN RA + DEMO

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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.

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SP0070 HOW TO PERFORM US-GUIDED INTERVENTIONS + DEMO

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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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