Reumatismo, 2005; 57(1):1-4

EDITORIALE

Snap-shot of the ultrasound school of the Spanish Society of Rheumatology

La scuola di ecografia della Società Spagnola di Reumatologia

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Today, there is no doubt that musculoskeletal ultrasonography (MSUS) is the rheumatologists' best tool. It extends physical examination, aids clinical approach and is a very attractive research tool. Ultrasound schools for rheumatologists' are developing fast in many countries. Let's have a look at the Ultrasound School of the Spanish Society of Rheumatology (USSSR).

Back in 1996, Esperanza Naredo, Lucia Mayordomo and myself started the USSSR. We had the privilege to be trained by Dr. Antonio Bouffard and Dr. Marnix Van Holsbeeck, eminent radiologists and fathers of MSUS from Henry Ford Hospital in Detroit, Michigan. Quickly we foresaw this technique for rheumatology and conceived that a thorough understanding of sectional anatomy, a systematic examination technique and a good understanding of the clinical context of the problem to be examined are cornerstones for the proper usage of US. The latter, is inherit to the rheumatologist however, the two former are not and, therefore have to be specifically taught.

Today USSSR has 5 teachers (Fig. 1) that cover most Spain. Rheumatologists can attend practical classes in Madrid, Barcelona and Seville. We have taught about 450 rheumatologists which make-up approximately half of the rheumatologists working in this country. We account for, at least one rheumatologist sonographer in almost every University Hospital. Courses and lodging are financed by the Spanish Society of Reumatology (SSR). Every year, about 95% of the trainees rate the courses as excellent and worth the time invested. The USSSR offers 4 different courses: a 25 hour introductory training course for third and fourth year residents in rheumatology (annual course); a 25 hour course for beginners (4 courses per year); a 25 hour intermediate course for more than beginners (3 courses per year) and a 50 hour advanced course for those that have achieved basic knowledge in MUS and perform MSUS examinations (2 courses per year). All of the courses are held in hospitals and are practical hands-on imaging courses. First, normal systematic joint scanning is performed by the teacher then by each student under supervision. Next, previously selected patients are scanned by each student under supervision during approximately 30 minutes. We place four students and one teacher per machine.

Figure 1 - Teachers of USSSR: from left to right: Esperanza Naredo, Jacqueline Uson, Carmen Moragues, Ingrid Möller, Lucia Mayordomo (missing), Juanjo de Agustín, Eduardo Rejón and Eugenio de Miguel.

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Biceps tendon: elbow flexed , forearm resting on lap and palm up

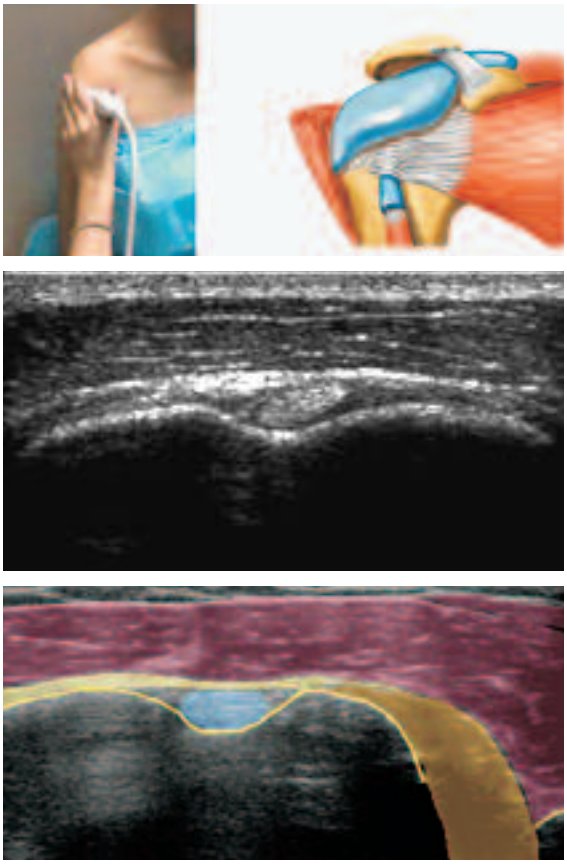

Figure 2 - Example of the CD: In different frames videos of patient and probe positioning, video of ultrasound images drawing of sonographic-anatomy, and colored ultrasound images can be seen. Images are accompanied by text.

Prior to all courses, students review sectional musculoskeletal anatomy and have to go through our schools compact disk on joint examination technique. This learning tool shows: sectional anatomy, videos of patient and probe positioning and videos of US joint imaging (Fig. 2).

The objectives of the beginners course are:

1. indications and applications of MS ultrasound;
2. ultrasound physics and artifacts;
3. recognition of normal structures: muscle, tendon, cartilage, joint space, joint capsule, nerves and bone profile;
4. practical handling of the machine;
5. systematic examination joint technique: shoulder, elbow, wrist and hand, hip, knee, ankle and foot;
6. recognition of abnormal or pathological structures by scanning patients.

The first 2 hours are theoretical. Teachers lecture on 1 to 3 and the following 2 hours students on the machine, practice handling of the machine and identification of normal structures.

To date, MSUS is not included in the spanish rheumatology residency program. Thus, the USSSR offers an introductory training course only for residents so they can become acquainted with ultrasonographic images and learn how joints are properly scanned. The course covers objectives 1 to 5 of the beginners course.

After having completed the beginners course students receive a certification from the SSR and may apply for the intermediate course.

The intermediate course, shares the same objectives as the beginners one. At the end of the course, they should be able to perform a systematic joint examination and both describe and identify the sonographic appearance of: all tendon lesions, enlarged median nerve, bursitis and joint effusion and its sonographic characteristics, synovial hypertrophy and bone erosions. A certification from the SSR is given at the end of the course.

In the advanced course, students learn to:

1. describe pathological finding and establish ultrasonographic diagnosis;
2. elaborate US reports and document correctly US images;
3. learn MS Doppler imaging;
4. perform ultrasound guided periarticular and articular injections and aspirations.

In addition to the practical sessions, during 45 minutes every day different periarticular and articular pathological joint images are projected and commented. Eight practical hours are spent on shoulder pathology and 4 hours on the other joints. Guided injections are performed in pieces of chicken previously stuffed with food and objects that can be scanned and injected. Within 6 months, students must perform at least 90 different pathologic US examinations and send us their reports and documented images. We recommend 15 exams of the shoulder, the wrist and hand, the knee, the ankle and foot. Ten exams of the elbow and hip and 5 exams of muscle lesions and 5 exams using US guidance. Reports and images are evaluated by the teachers. Important corrections and observations are reported back to the students and when approved by us students achieve certification of the SSR. This certification permits one to practice independently.

Teachers are suspected to attend at least one in-

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ternational ultrasound course per year and be involved in at least one ultrasound study of the school. Because MSUS is developing and evolving, teachers from different countries should interact with each other to look after competence. In brief, together with the EULAR Working Group for Musculoskeletal Ultrasound we have organized a - teach-the teachers - course. Examination techniques and diagnostic criteria of the different teachers will be compared to improve MSUS accuracy and reproducibility.

Other activities carried-out by the USSSR include: Advanced Musculoskeletal Ultrasound, Directed by Dr JA Bouffard, Madrid, March 2000, Musculoskeletal ultrasound: Introductory workshop in Diagnostic techniques and invasive rheumatology. The Joseph Lee Hollander Workshop, Philadephia, PA October 2000. 4Th EULAR Sonography course: Practical use of Musculoskeletal Ultrasonography Madrid, April 2002. During the last 3 years we have organized a special 75 h summer course for South American rheumatologists.

The future plans of USSSR are to continue expanding this clinical tool by teaching MSUS and looking after US competence of our rheumatologist sonographers as well as to promote US research projects.

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