**Editorial**

**Why aren’t we all doing ultrasound?**

Musculoskeletal ultrasound (MUS) is potentially the most exciting development in clinical rheumatology practice in recent years. It is readily accessible, patient friendly and relatively inexpensive. It can be used to detect small joint effusions and thus increase the accuracy of diagnostic aspiration and therapeutic injection [1]. It is more sensitive than clinical examination in detecting enthesis [2] and seven times more sensitive than X-ray in detecting small erosions [3]. It is in the area of detection of early synovitis, however, where the greatest potential lies. MUS can detect subclinical inflammation and is comparable with MRI in this respect [4, 5], a phenomenon that may explain the apparent dissociation between clinical remission and joint damage in RA [6]. Power Doppler MUS can also be used to monitor response to biologic therapy [7] facilitating more rational decision making in the use of these very expensive treatments. These developments have stimulated a greatly increased interest in MUS, which can be gauged by the demand for courses organized by the British Society for Rheumatology (BSR) or the European League Against Rheumatism (EULAR) and the increase in publications related to this topic in recent years.

Surely MUS is now indispensible in every rheumatology department. So why aren’t we all doing it? Why is MUS not an integrated tool in every early arthritis clinic? Why is training in MUS not already part of the curriculum for trainee rheumatologists in the UK as in other European countries? These questions have been asked before in previous editorials in *Rheumatology* citing the absence of defined training programmes and the investment in time required [8, 9]. We do not seem to have advanced much in the last few years. A survey presented at the MUS Special Interest Group at this year’s BSR annual general meeting suggested that despite having had some training and access to an ultrasound (US) scanner, most rheumatologists would still ask a radiologist to undertake a US scan rather than do it themselves. It also indicated that US machines in UK rheumatology departments are grossly underused [10]. These results, admittedly based on a small sample, indicate either a lack of time or opportunity (probably both) to build on basic courses and acquire the skills needed to incorporate MUS into everyday practice. These difficulties exist despite publication of a specific competencies framework for rheumatologists [11], the EULAR Working Group for MUS in Rheumatology guideline [12] and OMERACT reports [13].

In this issue of *Rheumatology*, the Belfast group have made another valuable contribution as to how training can be achieved [14]. They describe a modular programme with competency outcomes with some of them easy to integrate in the present electronic trainee portfolio. However, a great deal of man-hours were expended on the five trainees who successfully completed the programme. It is difficult to see how such commitment can fit into already overcrowded job plans.

It is simply not practical for all rheumatologists to become competent in all aspects of MUS even if they wanted to. Some have developed a special interest and expertise in MUS and no doubt more will follow. Others may prefer to use the tool for one specific purpose such as the detection of synovitis in an early arthritis clinic. A modular approach seems a more practical way of training [15] and would be achievable with relatively little effort. An added issue is the optimization of resources within rheumatology departments. A single consultant trained in MUS will struggle to find time to develop the service.

Professionals allied to medicine could be trained to undertake standard scans of the hand and wrist in clinic. In the UK, specialist nurses already are routinely performing clinical assessments of disease activity, examining patients for swollen and tender joints. MUS in this setting is just an extension of that assessment. A number of workshops in MUS have already attracted great interest from the rheumatology nurses and in smaller units this might be the only feasible solution. There is already evidence of MUS used by experienced nurses in other specialties [16, 17] and by other professions allied to medicine, such as podiatrists [18].

There is also great potential for using MUS in developing countries. Portable machines can reach remote areas with limited available resources [19]. Evidence of interest from South America and India can be gauged from the attendance at courses organized by the Spanish School of Sonography and the Indian Rheumatology Association.

While growing evidence points to the value of MUS there is still a need for multicentre randomized studies demonstrating the role of MUS as an outcome measurement in RA compared with standard clinical disease activity scores. Recent publications have suggested the role of MUS-detected subclinical synovitis in predicting radiographic progression [6] and persistent inflammatory arthritis in seronegative patients [20]. Larger studies need to be done if MUS is to change the definition of disease and remission. Such research is fraught with problems of inter-observer and inter-machine variability though these are not insurmountable [13, 21]. Lack of evidence of the long-term significance of MUS findings and its limited availability meant that it was not possible to recommend MUS as a discrete outcome measure in the recently published UK (National Institute for Health and Clinical Excellence) guidelines [22]. In turn, this impacts on how MUS is perceived by commissioners and hospital trusts that may be reluctant to invest in the time and training needed to set up a service.

If MUS is to achieve its potential in rheumatology, a number of actions are needed now. Training in MUS must be an integral part of the curriculum for rheumatology. Rheumatologists who wish to train and develop a special interest in MUS need the support of their trusts and their professional body, the BSR. We should be prepared to share these skills with other members of the multidisciplinary team. We need to identify centres where there is established expertise in MUS to facilitate further training and mentorship. There is an urgent need to develop multi-centre research projects looking at specific outcomes.

So will we all be doing MUS in a few years time? Probably not. Some (and not only doctors) will develop expertise in a limited area. It is incumbent on those who realize the value and potential of MUS to provide the leadership needed in research and training which in turn will ensure that MUS will be an integral part of every rheumatology department.

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