

Editorial Note

Development of diagnostic ultrasound (US) in rehabilitation medicine might be the most important impact in rehabilitation medicine in the past ten years. There are many workshops regarding the US application held yearly all over the world. US, like electrodiagnosis, becomes a prerequisite to the physiatrist in some of the countries. US has become an increasing valuable tool in musculoskeletal diagnostic imaging with the advantages of easy accessibility, availability, less cost, high resolution and capability of performing dynamic study when compared with magnetic resonance imaging study (MRI). With these merits, US has replaced MRI in some aspects and has been widely used in daily practice in rehabilitation medicine.

In addition to diagnosing imaging, US is also an attractive alternative to interventional procedures either blindly or under fluoroscopic or CT guidance. The main advantages of sono-guided intervention over blind method is that the needle position can be confirmed in real time and thus may improve the outcome and reduce local complication. When comparing the different ways of guidance, sono-guided intervention appear to be faster, less invasive, absence of ionizing radiation, more successful on the first attempt, with good availability, and cause less patient discomfort. US guidance improves the accuracy of steroid injection into joint cavities, bursae, and tendon sheaths, thus enhancing its therapeutic efficacy and thereby reducing the risk of iatrogenic complications. By the same token, the application of US for regional nerve blocks is also gaining popularity. In a recent study, ultrasonography has been successfully used to locate the sacral hiatus for caudal epidural injections. Moreover, sono-guided sacroiliac joint injection, facet joint injection, and medial branch block have been advocated as viable options over fluoroscopy and computed tomography-guided techniques.

Aside from imaging and sono-guided intervention, US has been used as a biofeedback in training of trunk core muscles. Although the importance of the trunk core muscles, such as transverse abdominis and multifidus, in stabilizing the lumbar spine is well known, clinically, teaching the patients to accurately contract of the above muscles is not easy. Since US can depict the muscles well, it can serve as a biofeedback tool in the training process of the above muscles. Therefore, US is not only a diagnosing tool but also a therapeutic instrument.

Several scholars have employed US to assess the elevation of the larynx and the movements of the tongue during swallowing. Although it is still under-development, the primitive results of several researches show that US could be a potential utensil in assessment of swallowing function. Hence, US is no longer limited in the musculoskeletal system and has expanded its application to other fields of rehabilitation medicine.

New US instruments can explore the elasticity or hardness of soft tissues, that is, mechanical properties, which enables physiatrist to detect the texture changes of soft tissue before morphological changes. Some researches reported that the plantar fascia turned into softer before thicker in the patients with plantar fasciitis. Consequently, pathological changes of soft tissue could be diagnosed at an earlier stage, treatment could begin in advance, and better effects and shorter courses of treatment could be achieved.

I am honored to participate in the development of US applications in rehabilitation medicine and deeply appreciate this valuable appliance in clinical services and research. Consequently, I hereby sincerely invite you to join the US journal and apply this technique in your professional career. I believe you will never regret and will grow to love this technique as much as I do.

Tyng-Guey Wang, MD
Department of Physical Medicine and Rehabilitation
National Taiwan University Hospital
Professor, School of Medicine
National Taiwan University