

Role of USG in Musculoskeletal pain and its Future perspective

¹Mayank Chansouria, ²Peeyush Shivhare

How to cite this article: Chansouria M, Shivhare P. Role of USG In Musculoskeletal pain and its Future perspective. *J Recent Adv Pain* 2018;4(2):51-52.

Source of support: Nil

Conflict of interest: None

Over past two decades, musculoskeletal ultrasonography (MSK USG) has established itself as a versatile and precise imaging modality in the fields of radiology, sports medicine, rheumatology and pain medicine. It has become increasingly popular and, without doubt, has become an imaging modality of great value in the diagnosis of MSK disorders. In fact, it has gained its rightful place in literature, along with magnetic resonance imaging (MRI). Cost-effectiveness and ready availability are its biggest advantages in several clinical settings. The real-time capability of USG in conducting dynamic studies in areas like the shoulder and for the carpal tunnel syndrome is a very big asset. That it is possible to make a quick comparison with the contralateral side, is of great help in many difficult situations.

Modernization and sophistication in machine technology have increased spatial resolution so much so that it is often said to be superior to MRI.¹ This has resulted in better understanding of the anatomy and the pathophysiology of many disorders, thus aiding in taking vital decisions regarding surgical interference, conservative management, etc. Indeed, one can say that the advances in MSK ultrasound are to be seen to be believed.

One of the major advantages that MSK ultrasound has over MRI in the assessment of tendons and nerves, is the availability of high-frequency probes, which allows us to evaluate the individual fibrils. Added to this, are the ease and speed with which a study can be completed. Needless to say, MSK USG is less 'taxing' to the patient's pocket! Multiplanar imaging is yet another major advantage. In

a nutshell, it may be said that not one but many factors make MSK USG a very welcome addition to the field of pain medicine. Ultrasound images of the musculoskeletal system provide visible information of the structure of musculoskeletal tissues and organs such as muscles, tendons, ligaments, joints, and soft tissue.

Types of ultrasound-guided interventional pain injections:²

Neuraxial

- Intra-articular facet blocks or medial branch nerve blocks, epidural injections (selective nerve root block, interlaminar, transforaminal, caudal)

Joints

- Knee, wrist, elbow, shoulder (glenohumeral or acromioclavicular), hip (intra-articular and greater trochanteric bursa), sacroiliac joint, intercostal nerve, lateral femoral cutaneous nerve, suprascapular nerve, ilioinguinal nerve, iliohypogastric nerve, genitofemoral nerve

Peripheral/Other

- Stellate ganglion block, greater occipital nerve, branches of the brachial plexus (i.e., median, ulnar or radial nerves), branches of the lumbosacral plexus (i.e., obturator, peroneal nerves)

Ultrasonography is a useful tool to guide the treatment of patients with musculoskeletal disorders. Ultrasound-guided techniques help physicians accurately inject treatment drugs into the target tissues to satisfy the requirements of a successful and safe therapy.

Using US to perform interventional procedures for patients with chronic pain is in its initial stages. Over the past decade, pain practitioners have continued to fine-tune their practice and commonly incorporate US-guidance into the care of their patients. A significant barrier to widespread use of US is the paucity of RCTs to authenticate the higher efficacy of this modality as compared with traditional imaging techniques. Due to the benefit of using US to identify vascular structures it seems logical that it may have a unique role in cervical spine procedures such as SGBs. To our knowledge, there are no limitations on US use thus proceduralists should consider including dual modality imaging methods when performing higher risk procedures. As there is a significant learning curve associated with US-guided

¹Associate Professor, ²Senior Resident

¹Department of Anesthesiology, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India

²Department of Anesthesiology and Trauma Centre, Gajra Raja Medical College and Jayarogya Group of Hospital, Gwalior, Madhya Pradesh, India

Corresponding Author: Peeyush Shivhare, Senior Resident, Department of Anesthesiology and Trauma Centre, Gajra Raja Medical College and Jayarogya Group of Hospital, Gwalior, Madhya Pradesh, India. e-mail: drpiyushshivhare@gmail.com

procedures, proper training is crucial to safe and successful practice.

The ability to perform interventional procedures under USG guidance is more than an advantage.

FUTURE PERSPECTIVE

Rapid technological advances in ultrasonography have led to the creation of smaller and more portable high-resolution devices. Due to advantages in delineating anatomy and lack of ionizing radiation, US guidance for interventional pain procedures will undoubtedly increase

in popularity. Coupled with other imaging modalities, it will also improve safety and accuracy of pain-related injections.

REFERENCES

1. Levon N. Nazarian. General concepts of musculoskeletal ultrasound: A practical hands-on approach. CME audiovisual hand out-AIUM.
2. Narouze SN. Ultrasound-guided interventional procedures in pain management. Reg. Anesth. Pain Med. 2010; 35.