

# The Utility of Diagnostic Musculoskeletal Ultrasound in a Chiropractic Teaching Clinic: A Retrospective Case Series



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## ABSTRACT

### OBJECTIVE:

Reported as a valid technique for imaging various neuromusculoskeletal system (NMS) pathologies, the specific utility of diagnostic musculoskeletal ultrasound (MSKUS) in a chiropractic setting had yet to be described. The purpose of this case series is to illustrate the potential utility of MSKUS in the diagnostic assessment of patients presenting to a chiropractic teaching clinic.

### METHODS:

Logan Health Center cases with MSKUS images were reviewed from the period April 9, 2007, through August 15, 2007, with a total of 105 cases. Three cases were selected based on their clinical and imaging impact.

- Case 1 presented with thigh pain following a track meet.
- Case 2 presented with chronic shoulder pain that was not responding to treatment.
- Case 3 presented with numbness and tingling in the hand for a one-month duration.

### INTERVENTION AND OUTCOMES:

MSKUS was able to accurately demonstrate:

- Grade III tear of the rectus femoris muscle
- Full thickness tear of the rotator cuff bilaterally
- Median neuritis in the carpal tunnel

These findings enable prompt and accurate diagnosis.

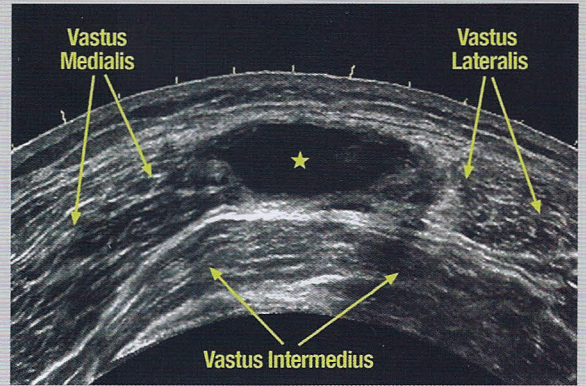
### DISCUSSION:

MSKUS may be beneficial in the chiropractic clinic setting due to the high percentage of patients with NMS complaints undergoing diagnosis and treatment.

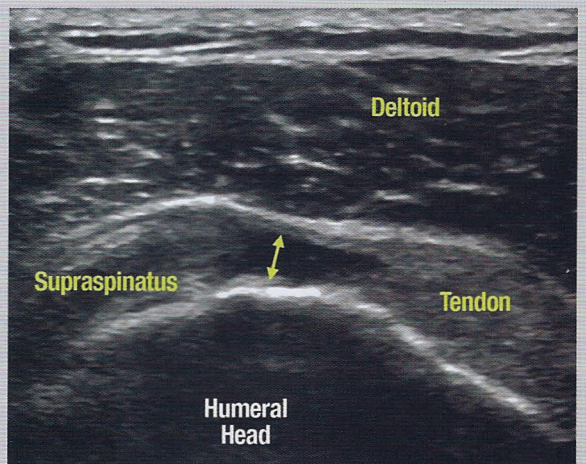
Imaging of the rotator cuff is one of the principal uses of MSKUS and has been described as the imaging "gold standard." Imaging of abnormal nerves, in particular median neuritis, is easily performed and is a predictor of clinical carpal tunnel syndrome. Muscle injury is also readily imaged by MSKUS. Pathologies of joints, as seen in rheumatologic diseases, can be optimally imaged with MSKUS.

MSKUS is an accurate, prompt, relatively inexpensive and readily available method to image the NMS system.

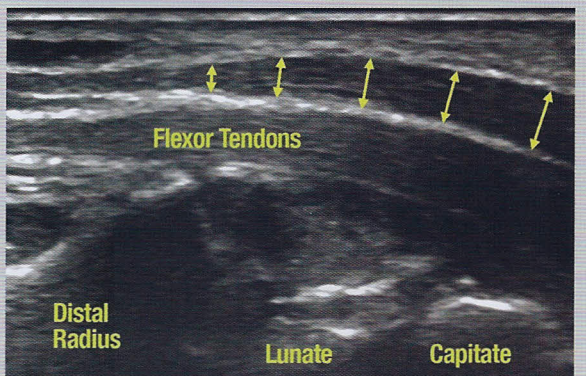
MSKUS images used in diagnostic assessment of three cases studied in the research.



CASE 1 – Transverse extended field-of-view sonogram of the distal thigh shows a hypoechoic fluid-filled space (star) between the vastus lateralis and the vastus medialis, indicating a grade III tear with retraction of the rectus femoris.



CASE 2 – Transverse sonogram of the supraspinatus tendon demonstrates a hypoechoic fluid-filled defect within the supraspinatus tendon that extends from the articular surface to the bursal surface (arrows), representing a full-thickness tear.



CASE 3 – Longitudinal sonogram of the carpal tunnel shows enlargement (arrows) of the nerve as it courses proximal to distal. The enlargement is due to swelling of the nerve, consistent with median neuritis.