

## Musculoskeletal Ultrasound in Orthopaedic Practice: Stethoscope for Orthopaedic Surgeon

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### INTRODUCTION:

Musculoskeletal ultrasound (MSKUS) has evolving indications in practice of Orthopaedic. It is helpful in both diagnosis and interventional procedure for musculoskeletal diseases. Noninvasiveness, portability, nonionizing radiation, and dynamic real time assessment of MSKUS are among advantages in diagnosing musculoskeletal diseases accurately. Ultrasound guided procedures for musculoskeletal conditions, such as joints aspiration/ injections, hydrodissection of entrapped peripheral nerves, prolotherapy, regenerative injection treatment, spinal injections and interventional pain management, are shown more accurate, effective and safe.

### REPORT:

MSKUS with high resolution are effective in assessing and diagnosing

- Muscle and tendon injury
- Bone injury
- Musculoskeletal infection
- Arthritis
- Foreign bodies injuries
- Soft tissue masses
- Peripheral nerve entrapment

Multiple studies reveal improved accuracy and clinical outcomes with ultrasound guided interventional procedures, with accurate and precise needle placement. Complications can be reduced by real time guidance on avoidance of vital structures.

Compare to fluoroscopy, which most of Orthopaedic surgeons familiar with, MSKUS offers advantages of no radiation risks, portability, cost effectiveness and real time

guidance. Nevertheless, the role of fluoroscopy such as in spinal procedures, especially patients with high BMI, is not irreplaceable. MSKUS and fluoroscopy should complement each other in improving patients' outcome and safety.

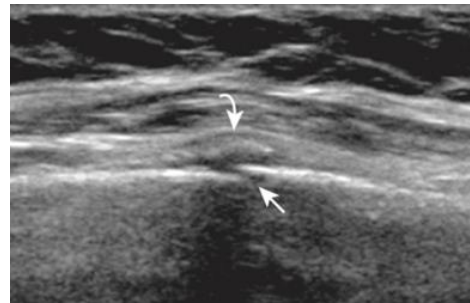


Figure 1: Subtle fracture can be detected with MSKUS as evidenced by cortical discontinuity.



Figure 2: Ultrasound guided hip joint injection. FH (femoral head), FN (femoral neck).

### CONCLUSION:

MSKUS is an invaluable diagnostic technique in Orthopaedic practice. It is definitely cost effective in assessing and diagnosing most musculoskeletal pain. Ultrasound guided interventional procedures are shown more

effective and safer, compare to landmark guided Orthopaedic procedures.

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