

# Getting Back in the Game

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The role of POCUS in expediting care for Musculoskeletal Injury

A Case Study by:  
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# Introduction

Hand-held ultrasound (HHUS) has proven to be an indispensable diagnostic and procedural tool in various contexts of practice. My personal practice ranges from emergency medicine and critical care to a student health urgent care at a large university. In urgent care alone I have found a multitude of uses ranging from lung exams to foreign body removals. Of particular value has been the use of Butterfly iQ in musculoskeletal ultrasound (MSKUS). A subset of the patients seen in our urgent care facility are athletes who suffer illness and injuries, often at practice or games. While XR is readily available on-site, CT and MRI necessitate specialist consultation and referral to a local orthopedist and imaging center. HHUS has been especially valuable in facilitating diagnosis and expediting the treatment of musculoskeletal injuries in this setting.

# Case history

A 20-year male was brought to the student health urgent care from baseball practice by the athletic trainer due to concerns of a thumb injury. The student suffered a hyper-abduction injury of his left thumb while sliding into second base hands first. The trainer was concerned for a potential fracture or ligament injury and insisted on evaluation at student health.

On exam, there was tenderness to palpation at the base of the left thumb metacarpal phalangeal joint (MCPJ). The patient had slightly more laxity to abduction about the MCPJ compared with the contralateral side. Joint folio radiograph views were obtained by having the patient pull a rubber band with his thumbs to reveal any potential instability. No fracture or obvious instability was noted. The patient strongly desired to return to practice.

Before clearing the athlete to return, a MSKUS exam was performed. Ultrasound revealed signs of a torn ulnar collateral ligament (UCL) of the thumb. I was able to easily send a de-identified video to a MSKUS-trained radiologist, who agreed with my bedside findings. With this information, the orthopedic surgeon was able to see the patient the next day and schedule an MRI. The accessibility of the images, and the ability to show them to the athlete dissuaded him to return to the pitch which he would have likely otherwise done.

## Ultrasound findings

MSKUS of the digits is challenging due to the target anatomy being very superficial. Often a standoff pad is used but, as in this case, generous amounts of viscous gel and a soft touch with the probe can work. I always start by identifying bony landmarks to orient myself; in this case the metacarpal proximally and the proximal phalanx distally. The ulnar collateral ligament lies under the adductor pollicis aponeurosis. If the ulnar collateral ligament suffers a full thickness tear, it can displace proximal to the adductor pollicis aponeurosis; this is referred to as a Stener lesion and generally necessitates surgery as the displaced ligament will not heal on its own. As indicated in the image, I was able to identify a distal full thickness tear that did not appear displaced. The adductor pollicis aponeurosis did not appear to be injured. This is critical information for consideration of intervention.



## Conclusion

MSKUS with a portable handheld ultrasound can be an incredibly valuable modality in the outpatient setting in identifying MSK injuries. With training and practice, it can be an accurate and precise tool enabling prompt and appropriate diagnostic, therapeutic and specialist follow-up.

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