



The Use of Butterfly iQ+ in Sports Medicine.

How point-of-care ultrasound supports clinical practice in primary care.

A Case Study by:
Robert Gambrell, MD

“I would feel disadvantaged without musculoskeletal ultrasound in my clinic to aid in my diagnosis and treatment of patients.”

As a Primary Care Sports Medicine Physician practicing in Augusta, Georgia USA, in a private orthopedic clinic, I've been using musculoskeletal (MSK) ultrasound on a daily basis for several years and can attest to the benefits it has brought to my practice. I've recently acquired¹ Butterfly iQ+ and have found it to be an extremely cost-effective and convenient alternative to our larger ultrasound machines.

The most common use of MSK ultrasound in my practice is with intra-articular injections and arthrocentesis. This has been especially important when injecting visco supplementation or biologic products into the joint, to confirm proper placement. I had been administering intra-articular injections for many years prior without ultrasound use, and I experienced improved patient satisfaction when ultrasound allowed more easy and confident access to the joint and helped avoid painful injections.

The use of point-of-care ultrasound (POCUS) has also assisted me in the diagnosis of muscle strains and tendon ruptures, carpal tunnel syndrome, and tendinopathies. I perform a number of percutaneous tenotomy procedures which I would not be able to perform without ultrasound guidance. Identifying, locating, and successfully removing foreign bodies has been facilitated by the use of ultrasound. POCUS is useful when differentiating between solid and cystic lesions in the skin and soft tissues.

Training in the use of musculoskeletal ultrasound is now an integral part of the curriculum in sports medicine fellowships. The benefits and applications of musculoskeletal ultrasound grow constantly as practitioners become more competent in its use. I would feel disadvantaged without musculoskeletal

ultrasound in my clinic to aid in my diagnosis and treatment of patients. MSK POCUS was not widely available when I completed my fellowship, and yet I was able to become proficient by attending a few CME courses and on-the-job training.

MSK ultrasound has also opened the door for me to perform outpatient percutaneous tenotomy procedures which have proved quite successful and allowed me to care for more of my patients without referral for open procedures. The small size and ease of use makes it very convenient in my clinic. No more wheeling a large cart that needs to be plugged in with multiple transducers that need to be changed out. The use of POCUS provides rapid diagnostic results, oftentimes eliminating the need for more expensive magnetic resonance imaging (MRI) that typically has a longer time to diagnosis, as the report is generated. Rapid diagnosis allows for timely initiation of appropriate treatment and disposition of the patient. The convenient size of the device, as well as the ability to view images on my smartphone allows me to take my Butterfly to the sporting events that I'm covering, and expands my diagnostic abilities at the sideline.

In summary, I have found the Butterfly device to be a convenient, cost-effective, and high-quality alternative for obtaining musculoskeletal ultrasound results. The compact size and ease of use of the software facilitates its efficient use in the clinic and on the sideline. I would highly recommend the Butterfly to any physician interested in MSK ultrasound.

1. Dr. Gambrell was provided a Butterfly iQ+ in connection with this article.

Some more of Butterfly's clinical applications within MSK:

- Trigger finger and tendon sheath injections.
- Nerve blocks and carpal tunnel injections.
- Arthrocentesis and joint injections.
- Ultrasound-guided percutaneous needle tenotomy and fasciectomy.
- Identification and removal of soft tissue foreign bodies.
- Identification and aspiration of ganglion cysts.
- Evaluation and grading of muscle and tendon injuries.
- Differentiation of soft tissue masses and characterization of abscesses.
- Sideline or event evaluation of sports injuries.
- Associate Veterinarian
- Mississippi Aquarium