Western Health

Western Health Medical Imaging News Update

Issue [illegible] August 2013

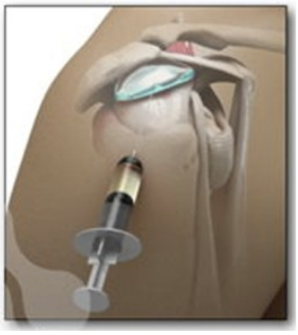
ADVANTAGES OF ULTRASOUND GUIDED PROCEDURES

Ultrasonography is a readily available imaging modality that is now incorporated into the routine diagnosis of musculoskeletal disease and is an effective means of guiding musculoskeletal interventional procedures. These are fast and often technically easy to perform. Distinct advantages of ultrasonography are its abilities to show needle placement in real time, allow targeted interventions in soft tissue, allow observation of medication delivery, and to confirm localization of medication at the end of the procedure. Given the lack of ionizing radiation, ultrasonography usefulness is expanded to children and pregnant women.

Traditionally, either fluoroscopy or CT has been used as a guide for percutaneous interventional MSK procedures. Although these imaging systems allow for accurate needle placement, they also have limitations. Fluoroscopy, although useful as a guide for large-joint injections or aspirations, particularly in cases with high BMI, is of limited use when disease is confined to the soft tissues (muscles and tendons). Conventional CT, although having greater anatomic resolution, it entails a higher radiation dose and usually a longer total procedure time. Furthermore, beam-hardening artifact from the needle itself may also make directing a needle into a small target such as a tendon sheath difficult.

Documenting exact needle placement in real time by ultrasonography allows for selective injection into tendon sheaths, as opposed to direct injection into tendons. It has been shown that direct injection into tendons has been associated with tendon degeneration and rupture. A test injection of the treatment mixture can be helpful by allowing observation of distention of the tendon sheath in real time. Similarly, a peri-fascial injection for plantar fasciitis, injecting superficially to the plantar fascia at the calcaneal insertion, thus avoiding direct injection into the plantar fascia is possible with ultrasonography. Direct injection has been associated with rupture as well as abnormalities of the longitudinal arch.

The capabilities of power Doppler imaging provide additional information before intervention. The presence of increased blood flow suggests inflammation or infection, which may affect the clinical decision of whether to intervene, how quickly, and by what method. Moreover, power Doppler imaging is useful when the clinical question is one of increased peritendinous fluid versus synovitis; increased peritendinous blood flow on power Doppler images suggests synovitis as opposed to simple tendon sheath fluid, thus aiding in the decision to treat with antiinflammatory medication.



Procedures readily performed by WHMI include, therapeutic injections into tendon sheaths (including the biceps, flexor digitorum longus, posterior tibial, APL/EPB sheaths for treatment of De Quervain's tenosynovitis, peritendinous hamstring injections); bursal injection (including sub-acromial/sub-deltoid and iliopsoas); Morton's neuroma injection; plantar fascia; wrist ganglia; carpal tunnel and synovial cyst injection.

In summary, ultrasonography has several distinct advantages as an imaging guidance system in performing musculoskeletal procedures. One of the strongest advantages is the ability to show needle placement and subsequent therapeutic injection or diagnostic aspiration in real time.

WHMI has dedicated MSK session days and bookings are readily available. These services are bulk billed with no out of pocket costs for referrals that comply with Medicare requirements.
For appointments please contact our friendly booking team on 8345 6234.

Dr Vahid Master, Consultant Radiologist

CT AVAILABILITY TODAY

WHMI facilities are licensed under the Medicare agreement and will provide Bulk Billing (no-out of pocket cost) to all patients with a referral that complies with Medicare Requirements

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