



# Ortho Insider

By Orthopaedics International and Sports Medicine International

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## WELCOME

Happy Chinese new year to all, and welcome to the second issue of Ortho Insider. Dr. Patrick Goh will kick off the new year's series looking at how ultrasound technology has impacted the management of sports injuries.

We would be glad to answer your query if you have any in this topic. Simply email to Dr. Patrick Goh at [doctorpatgoh@yahoo.com.sg](mailto:doctorpatgoh@yahoo.com.sg)  
Enjoy reading...

## ULTRASOUND IN THE DAILY MANAGEMENT OF SPORTS INJURIES

Dr. PATRICK GOH

Musculoskeletal ultrasound scanning became popular since the late 90's as a diagnostic tool but where it were previously in the hands of radiologists and sonographers, it is now an essential bedside tool in sports injury management. A high frequency linear probe (at least 8 to 10 MHz) is required for most musculoskeletal ultrasound applications.

### Ultrasound-Aided Diagnosis and Assessment in the Clinic

Ultrasound provides an immediate imaging compliment to the clinical examination of an injury. Techniques such as such as ultrasound-guided palpation and localisation are used to help eliminate guesswork in diagnosis. In certain situations, It can reliably eliminate the need for MRI's or X-rays, thus resulting in considerable cost and time savings for patients or insurers.

Shoulder bursitis or rotator-cuff tears, for example, can be seen on an ultrasound scan. If a cortisone injection is being considered for relief of bursitis or cuff tendinitis, an ultrasound scan can immediately rule out a significant cuff tear which may contraindicate such an injection (as cortisone can affect tendon healing, cause tendon atrophy, and potentially complicate a future surgical repair).

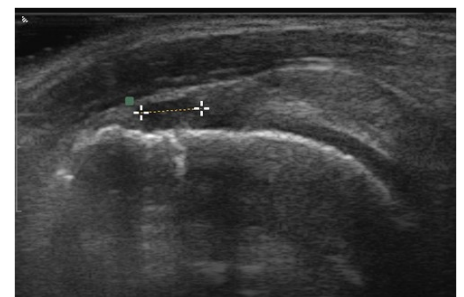


Fig 1 :Ultrasound of shoulder showing Full thickness tear of supraspinatus tendon seen on longitudinal supraspinatus view.

In an ankle sprain, an ultrasound scan can help by assessing the degree of damage to the ligament(s), and the adjacent peroneal tendon, which may form the basis for predicting when the person can return to sports participation.

In Plantar Fasciitis, X-rays may often show the presence of a bony spur which is of limited value. However, ultrasounds enable direct visualisation and measurement of the inflamed or degenerated plantar fascia. Tears of the fascia can also be ruled out.

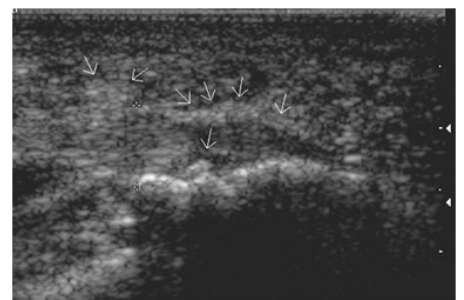


Fig. 2: Chronic Plantar Fasciitis in a 37 year old soccer player showing hypoechoicity and thickening at plantar fascia origin and pitting of bone, with bony spur.

Ultrasound can also be used to objectively track healing of an injured structure over time in order to facilitate safe return to sport or physical activities for the patient. For patients in whom core muscle training is required, ultrasound has been used to provide direct visual feedback to patients learning to activate certain core muscles, such as the transverses abdominus.

The colour mode (power dopler mode), commonly found in most modern machines, may also be useful in assessing blood flow to, or within a structure.

The ultrasound image helps patients to understand their injury better, and in doing so, helps alleviate the patient's anxiety and encourages better compliance.

### Ultrasound-Guided Interventions

Injections of compounds such as cortisone, anaesthetics and more recently, PRP, are commonplace in Sports Medicine, either as treatment or diagnostic-cum-treatment procedures. Similarly, procedures involving targeted needles such as aspiration of joints, bursae or hematomas are commonplace in everyday sports medicine practice.

The ability to guide a needle accurately to its intended target has always been a crucial success factor in such procedures. Inaccuracy in needle placement leads to poor clinical results or worse still, unwarranted side effects. Where injections are required, ultrasound guidance provides an edge in accuracy that was not previously available in the clinic. Certain deeper-seated tendons, joints and other structures which were not previously possible to access reliably can now be accurately accessed for injection or aspiration. This has expanded the options available for non-surgical treatments in sports injuries.

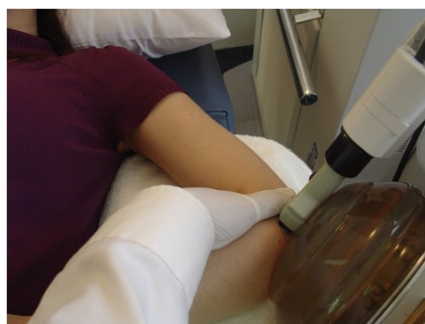
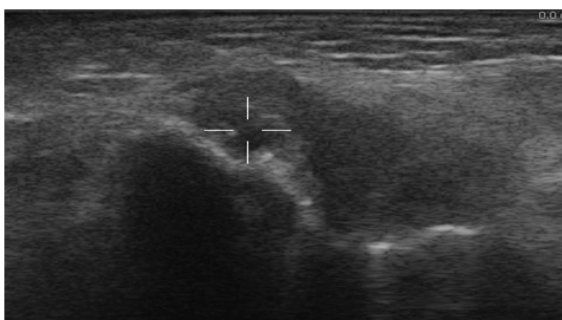


Fig 3 & 4 :

*Treatment of Tennis-elbow using an ESWT system with real-time ultrasound guidance.*

Specialised treatment methods such as focussed ESWT (Extracorporeal Shock Wave Therapy) for tendon treatments, may incorporate ultrasound imaging in real-time to ensure that the shock-waves are given to accurately to the lesion.

*Dr. Patrick Goh is a specialist sports physician and was a faculty member / tutor for Musculoskeletal Ultrasound courses organised by the Ultrasound Society of Singapore and the Sports Medicine Association (Singapore) from 2006 – 2009. email : doctorpatgoh@yahoo.com.sg*

### OI Upcoming Events

- GP Forum on Current Concept In Slip Disc Treatment. Sat, 05 March 2011. Hilton Singapore  
By Dr. Ngian Kite Seng, Dr. James Tan, Dr. Tan Chong Tien  
RSVP by Mon, 1 March 2011. Tel : 6403 8888. Email : randy.lim@pfizer.com

**Orthopaedics International, Neurosurgery International and Sports Medicine International** are a group of registered specialist practices comprising 8 orthopaedic surgeons, a neurosurgeon and a sports physician. Operating out of 4 locations within Singapore, we aim to provide patients with comprehensive and professional care for all musculoskeletal, neurosurgical and sports-related conditions. Each specialist brings a range of interests, expertise and sub-specializations to the group, and is also a senior doctor with a minimum of 20 to 30 years of relevant clinical experience behind him. We strongly believe in a team approach, so that every patient of ours will be treated with the highest standards of expertise and care that are available.

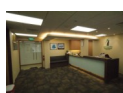
#### Our Locations :

##### Camden



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Fax : 6836 6869

##### Mt. Alvernia



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Tel : 6352 7678  
Fax : 6352 7680

##### Gleneagles



#02-42 Gleneagles Hospital Annexe Block  
6A Napier Road  
Singapore 258500  
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Fax: 6476 2066

##### Mt. Elizabeth



#05-08 Mt Elizabeth Medical Centre  
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Singapore 228510  
Tel. 6737 6386  
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