



Welcome to the final edition for 2016.

In this edition Dr Kwan Yeoh looks at early scaphoid fixation. Dr Todd Gothelf presents an article on 2nd MTP joint instability. In the examination series on page 3, Dr Doron Sher discusses The Swollen Knee.

With 2017 fast approaching and a new RACGP Triennium commencing we look forward to delivering further Category 1 GP Modules next year.

We wish you all the best for the festive season ahead.

– The Team at Orthosports



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WHO ARE WE?

Orthosports is a professional association of Orthopaedic Surgeons based in Sydney.

ORTHOSPORTS LOCATIONS

- > Concord 02 9744 2666
 - > Hurstville 02 9580 6066
 - > Penrith 02 4721 7799
 - > Randwick 02 9399 5333
- Or visit our website
www.orthosports.com.au

Early Scaphoid fixation benefits function



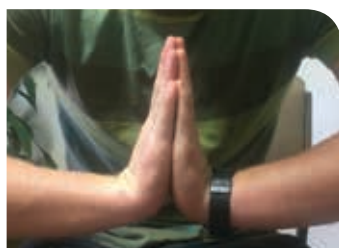
Undisplaced scaphoid waist fracture



Minimally-invasive screw fixation



Percutaneous fixation is performed through a tiny skin incision and the patient starts using his hand in a few days



At 8 weeks, the fracture has healed and the patient has normal grip strength and range of motion.

Early minimally-invasive scaphoid fixation allows quicker return to function.

Scaphoid injuries are common in young active people. However, traditional treatment of undisplaced scaphoid waist fractures requires cast immobilisation for 6 to 12 weeks until healed. Unfortunately, it is these same active patients who may be most inconvenienced by their cast. Newer methods allow patients to return to work much sooner.

For example, a flautist about to sit a final music school exam would have to postpone for at least 3 months – at least 6 weeks in a cast, then 6 weeks to regain strength and movement, and more time again to bring her skills up to the pre-injury levels.

Or consider an architect who runs his own business, unable to draw and unable to drive to see clients. He will not only lose income now, but also goodwill, as clients' projects are delayed.

An early percutaneous scaphoid screw fixation would allow patients to return to these everyday activities without a cast more quickly. This surgery is performed through a tiny incision as a day-only procedure and the patient is usually placed in a back slab for a couple of days before starting light use. There is minimal pain and stiffness.

In our examples above, the flautist would start playing again almost immediately and our architect would be able to return to work within a few days, with minimal disruption to business and income.

It is important to note that fixing a fracture in this way only allows the patient to use the hand lightly. The hardware is not strong enough to allow heavy use, such as manual labour or return to sports, and there is no difference in time to return to these sorts of activities in the longer run.

When considering the cost of surgery, once lost productivity time and income is taken into account, studies have shown that surgical management costs the same as, or less than, treatment with cast immobilisation alone.

In the end, it is important to discuss the patient's personal preferences and requirements when recommending a course of treatment. Rather than recommending the traditional nonoperative cast immobilisation method of treatment for all patients, today's patients have higher expectations and requirements, and a simple percutaneous fixation allows them to meet these.

Dr Kwan Yeoh

2nd MTP joint instability:

A common cause of forefoot pain

The 2nd metatarsophalangeal (MTP) joint is stabilised by a thick ribbon-like structure known as the plantar plate. This tissue is an extension of the plantar fascia, and it inserts onto the proximal phalanx. As one ages this tissue degenerates and can gradually stretch or tear, resulting in instability of the MTP joint. This instability results in inflammation and synovitis of the joint, which the patient experiences as pain. In the early stages of this condition the patient may develop pain without any history of injury. Pain is felt in the ball of the foot directly under the joint. Patients usually have worsening pain when walking barefoot that is relieved when wearing shoes.

The differential diagnosis will include a neuroma, or a painful swelling of the interdigital nerve. The diagnosis can be distinguished from a neuroma by history and physical examination. Patients with neuromas usually have worsening pain when wearing shoes that is relieved when walking barefoot, opposite to pain from 2nd MTP joint instability.

PHYSICAL EXAMINATION

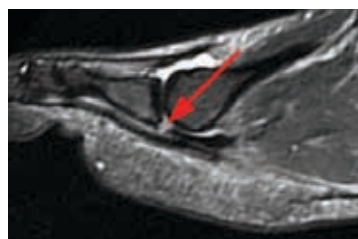
For 2nd MTP joint instability, pain is directly over the MTP joint, and should be on the top and bottom of the joint. A swollen and deformed joint are indications of a more advanced stage of the disease. For patients with neuromas, pain occurs in the webspace and is only on the bottom of the foot. The toes are usually not deformed.

The location of pain usually distinguishes the two diagnoses. While neuromas can occur in the 2nd webspace, they are far more common in the 3rd webspace. Therefore, 2nd webspace pain is more likely to be from an MTP joint instability, while 3rd webspace pain is more likely to be from a neuroma.

INVESTIGATIONS



MRI plantar plate normal



MRI plantar plate complete tear

Plain weight bearing radiographs should be done for all cases of forefoot pain. For both MTP joint instability and neuromas the radiographs may be normal. In advanced cases of MTP instability, a subluxation or dislocation of the joint may be present. Ultrasounds can identify both neuromas and plantar plate tears, but may be normal in early stages of instability.

An MRI can also be helpful, but a specific MRI of the central forefoot must be ordered to delineate these small structures. MRI can also rule out other causes of pain, including avascular necrosis of the metatarsal head (Freiberg's infraction) or chondral lesions.

TREATMENT

Initial treatment of 2nd MTP joint instability should be non-operative. Strapping of the toe relieves pressure on the plantar plate and can reduce pain. A metatarsal dome can offload the 2nd MTP joint to relieve pressure when walking. Podiatrists can often help with these strategies, as well as offer orthotics and alternative shoe options. Intra-articular cortisone injections can be very effective in reducing the inflammation and relieving the pain. Multiple injections should be avoided as they can cause rupture of the plantar plate and worsening deformity.

SURGICAL TREATMENT

When non-operative treatment fails to help after 6 months, surgery can be considered. Surgical repair of the plantar plate has been a recent advancement in foot surgery. Previous surgeries involved metatarsal shortening to relieve pressure at the joint, but ignored the plantar plate. While pain is relieved, the function of the toe is usually compromised. With surgical repair of the plantar plate, the tissue is reattached to the proximal phalanx through an incision on the top of the foot. The goal is to stabilize the joint, prevent further deformity, relieve pain, and restore function or grip strength of the toe. Surgery is performed as a day procedure, and immediate weight bearing is allowed in a post-operative shoe.

SUMMARY:

- 1) 2nd MTP joint instability is the most common cause of 2nd MTP joint pain.
- 2) Early cases can be treated non-operatively with podiatric care – taping of the toe and a metatarsal dome.
- 3) Current surgery advances have allowed us to reliably repair these tears with good results when non-operative treatment fails.

***I would like to thank James Linklater for the MRI images.*

Dr Todd Gothelf



KEY EXAMINATION POINTS



THE SWOLLEN KNEE

Knee effusions can be caused by trauma (acute), systemic disease (acute or recurrent) or by overuse (recurrent).

The most common traumatic causes of knee effusion are injury to ligaments or menisci or a fracture. The most common non-traumatic cause is arthritis but crystal deposition (gout/pseudogout) is also common and it is important not to miss an infection or tumour. A joint effusion without trauma is a very specific sign of joint inflammation but other symptoms that suggest joint inflammation include pain, warmth and erythema.

Aspiration of the knee is often required to establish the correct diagnosis and treatment. This fluid should be sent to the laboratory to look for crystals and organisms as well as for culture (M, C&S).

HISTORY

It is important to know if an acute injury to the knee has occurred or if the swelling evolved spontaneously. Any history of previous injury, treatment and surgery should be obtained, and understanding the time between the injury and swelling is helpful. Fractures and meniscal tears tend to swell quickly but the swelling from an ACL injury typically gets worse overnight and is much more problematic the day after the injury. Osteoarthritis may swell the day after being very active and Rheumatoid arthritis may swell without any activity at all.

TRAUMATIC INJURY

Patients will rarely be able to weight bear on the limb if there is a fracture (usually a high energy injury). A popping sound with giving way may indicate an ACL injury and pain with twisting, kneeling or standing from sitting may indicate a meniscal injury.

Isolated meniscal tears do not usually cause much swelling but chondral injuries certainly do.

SPONTANEOUS

Swelling without trauma is often the first sign of arthritis but more serious conditions such as an underlying tumour or infection must be excluded. A history looking for systemic symptoms such as fevers or chills, intravenous drug use, sexual contact, night pain or weight loss must be specifically taken. A variety of infectious diseases may present as monoarticular arthritis with joint redness, swelling, pain and loss of motion. Infiltrative disorders such as gout and pseudogout often present in a similar fashion and sometimes the only way to differentiate between them is with a joint aspiration. The knee is the most common joint involved in both benign and malignant tumors.

A careful routine clinical examination of the knee is required.

IMAGING

It is essential for the patient to have a plain xray. This will often be normal but will provide the diagnosis if it shows arthritis, fractures, dislocations, calcification, Osteochondritis dissecans and some bone tumours. CT scanning is useful only if you suspect a fracture but otherwise MRI scanning is the next imaging modality of choice.

DIAGNOSTIC TESTING

Aspirating the knee will help relieve the pain of a large, tense effusion but a lot of the fluid will re-accumulate.



Aspirating blood from the knee



Lipohaemarthrosis fatty layer on the top of the blood

One of the most sensitive tests for infection is to simply look at the fluid, if you think it looks infected it probably is. Use proper aseptic technique and a large bore needle (19 gauge or larger because the fluid can be very viscous). If the effusion is large then expect to remove more than 50ml of fluid from the knee.

INFECTION AND CRYSTAL ARTHRITIS

Patients may have an elevated peripheral WBC, erythrocyte sedimentation rate (ESR) and C Reactive Protein (CRP) and if they are not responding to standard treatment remember that fungi, tuberculosis and Lyme disease are potential causes of infection. Crystal-induced arthritis can present in a similar fashion as an infection but the presence of crystals does not rule out infection (the two may co-exist). Antibiotics should not be used unless an infection is proven.

SUMMARY

Initial management should include general measures to relieve knee pain and swelling. This may require splinting, partial or non-weight bearing, ice packs, and NSAID's. Antibiotics should generally not be started before cultures are obtained and intra-articular steroids should not be administered unless you are certain there is no infection. If you aspirate the knee always send the fluid for analysis. Arthroscopy is rarely needed in patients presenting with acute swelling of the knee without trauma.

Dr Doron Sher

Orthopaedic Surgeons and their Interests

CONCORD

47-49 Burwood Road Concord NSW 2137
Tel: 02 9744 2666

Dr Todd Gothelf	Foot & Ankle, Shoulder
Dr David Lieu	Knee, Shoulder and Elbow
Dr John Negrine	Foot & Ankle (Adult)
Dr Rodney Pattinson	Paediatrics and General Orthopaedics
Dr Doron Sher	Knee, Shoulder and Elbow
Dr Kwan Yeoh	Hand, Upper Limb and General Orthopaedics

HURSTVILLE

Waratah Private 29-31 Dora Street Hurstville NSW 2220
Tel: 02 9580 6066

Dr Jerome Goldberg	Shoulder
Dr Todd Gothelf	Foot & Ankle, Shoulder
Dr Andreas Loeffler	Spine, Trauma, Hip and Knee
Dr John Negrine	Foot & Ankle (Adult)
Dr Rodney Pattinson	Paediatrics and General Orthopaedics
Dr Ivan Popoff	Shoulder, Knee and Elbow
Dr Allen Turnbull	Hip and Knee
Dr Kwan Yeoh	Hand, Upper Limb and General Orthopaedics



Dr David Lieu
B.Sc(Med); M.B.,B.S.,
F.R.A.C.S.(Orth); F.A.
Orth. A
Orthopaedic Surgeon

Spotlight on Dr David Lieu

We welcome Dr David Lieu to our Orthosports Concord practice.

Dr Lieu is an Orthopaedic Surgeon specialising in Shoulder, Elbow, Knee and Trauma Surgery.

Dr Lieu has a keen interest in all sports and age-related conditions of the shoulder, elbow and knee. He is

PENRITH

Suite 5B, 119-121 Lethbridge Street Penrith NSW 2750
Tel: 02 4721 7799

Dr Todd Gothelf	Foot & Ankle, Shoulder
Dr Kwan Yeoh	Hand, Upper Limb and General Orthopaedics

RANDWICK

160 Belmore Road Randwick NSW 2031
Tel: 02 9399 5333

Dr Jerome Goldberg	Shoulder
Dr Todd Gothelf	Foot & Ankle, Shoulder
Dr Andreas Loeffler	Spine, Trauma, Hip and Knee
Dr John Negrine	Foot & Ankle (Adult)
Dr Rodney Pattinson	Paediatrics and General Orthopaedics
Dr Ivan Popoff	Shoulder, Knee and Elbow
Dr Doron Sher	Knee, Shoulder and Elbow

BELLA VISTA

Suite 116, Building B, 20 Lexington Drive
Bella Vista NSW 2153 Tel: 9744 2666

Dr Kwan Yeoh	Hand, Upper Limb and General Orthopaedics
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Sport & Exercise Medicine Physicians

Dr Paul Annett	Hurstville
Dr John Best	Randwick
Dr Mel Cusi	Concord Hurstville Randwick Penrith

proficient in dealing with all orthopaedic injuries and also works out of Liverpool Hospital, a major trauma centre. Dr Lieu is actively involved in teaching both orthopaedic trainees and medical students and feels that continuing medical education is important to provide a high level of care for his patients. His priority is to ensure his patients are well informed and can make educated decisions on how to manage their conditions.

Dr Lieu consults from our Concord rooms.

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