

on balance

Issue 20 | 2009

COMPLEX REGIONAL
PAIN SYNDROME

FROZEN SHOULDER

MANAGEMENT OF COMMON
UPPER LIMB SPORTING INJURIES



mlcTMoa

Issue 20 | 2009
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"It has been estimated that up to 12% of all sporting injuries involve the hand."

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mlcoaTM

On Principal

The numerous proverbs and other sayings regarding the upper limbs, such as "your future is in your hands" and "the best place to find a helping hand is at the end of your own arm", are exceeded in prevalence by the number and variety of upper limb injuries sustained by so many each year.

As a sportsperson, recreational or professional, one thing you can always guarantee experiencing throughout your sporting life is injury. Some are more prone to injury than others, but typical injuries consist of strains, sprains, pulls and tears, as well as cuts, bruises, breaks and swellings.

Although we have no written historical accounts, primitive man has provided us his fossils, which demonstrate that the same types of upper limb injuries and pathologies that are sustained today, also affected Neanderthal man. Primitive man was probably also the first to perform crude limb and finger amputations as a consequence of failing to deal adequately with certain injuries.

Mummified bodies, wall paintings and hieroglyphics show us that the people of the Egyptian age suffered from the same problems that we suffer today. The splints that were used at the time and that have today been found on mummies, were made of bamboo, reeds, wood or bark, padded with linen.

One of the volumes in the Corpus Hippocrates (from Greek physicians, including the most famous Greek physician of all, in 400 BC) had relevance to orthopaedics, describing methods of reduction of dislocation of the shoulder, of the acromioclavicular and elbow joints, let alone treatment of other orthopaedic ailments. Hippocrates had a thorough understanding of fractures and knew the principles of traction and counter-traction. Indeed, he developed special splints for various fractures, similar to external fixations of today.

In Roman times, Galen (129-199 BC), originally a Greek who became a gladiatorial surgeon before travelling to Rome, is now often referred to as "the father of sports medicine". He was probably the most accomplished medical researcher of the Roman period and his theories dominated

and influenced western medical science for well over a millennium.

Complex Regional Pain Syndrome (CRPS), interestingly, is dealt with from a neurologist's perspective on page 2 of this edition, whereas, in contrast, the equally difficult problem of *Frozen Shoulder*, the popular name for what is often medically known as adhesive capsulitis, on pages 3-4, is exposed from an orthopaedic surgeon's perspective. Both are "ought to" reads for all readers.

However, the primer, *Management of common upper limb sporting injuries* on pages 5-6, reflects the cardinal challenge facing all health care professionals working in the sports medicine field today, much of which also, more indirectly, faces many of the readers of *On Balance*.

Call them *Super Duper Bloopers* on page 7, or if you like, errors, bumbles, faux pas, fluffs, gaffes, muffs, lapses, slips or just plain old mistakes. However, the array of inaccuracies, impreciseness, improprieties and other indiscretions evident in the medical reports that mlcoa encounter on a regular basis are almost inconceivable, except for the fact that they are actual, authentic and genuine. It's almost beyond the giggle factor. This happens!

Then there's *Q&A* (page 8), *Shooting from the Hip*, *News & Views* (page 9), before you SIMPLY MUST FIND OUT what in the world a *SLAP Tear* is all about on page 10!

So what are you waiting for? Read on and enjoy!



*Dr Nathan Orbach
MB, BS, MRCP(UK)
Principal*

Complex Regional Pain Syndrome

By Dr David Rosen | Neurologist mlcoa

Complex Regional Pain Syndrome (CRPS) is a chronic progressive medical condition characterised by severe pain, often accompanied by swelling and changes in the skin and frequently complicated by mood disorder, significant loss of function and subsequent disability. CRPS is classified into two types:

CRPS Type I (also known as reflex sympathetic dystrophy) does not have demonstrable nerve lesions.

CRPS Type II, (also known as causalgia), is associated with nerve damage.

The cause of CRPS is unknown. Precipitating factors include injury (sometimes apparently trivial injury) and surgery. In some cases there is no demonstrable injury to the original site.

The term "Reflex Sympathetic Dystrophy" was based on the theory that sympathetic overactivity was involved in the condition's functional development. However, misuse of the term and doubts about its underlying cause, led to the present diagnostic term naming.

Cause of CRPS

The cause of CRPS is not fully understood. It is likely that some patients have abnormal pain systems which respond in a dysfunctional way to pain stimuli. As a result, susceptible people can precipitate a cycle of gradual uninhibited "wind-up" of pain circuits in the spinal cord and the brain associated with the central nervous system leading to increases in the levels of pain and distress, which commonly leads to dysfunctional mood and behaviour.

Susceptibility

CRPS can affect a person of any age. The mean age at diagnosis is 42. It is three times more frequent in females than males.

It has been estimated that CRPS may occur in approximately 2-5% of those with peripheral nerve injury and 13-70% of

those with hemiplegia (paralysis of one side of the body).

Symptoms

The symptoms of CRPS initially manifest near the site of an injury and usually spread beyond the original area.

Symptoms may spread to involve the entire limb and, commonly, the opposite limb, and/or other appendages. Frequently CRPS is complicated by sleep, mood and behavioural disturbance.

The most common symptoms are burning and electrical like shooting pains. Other manifestations may include: abnormal sensory perception (normal stimuli may cause pain), muscle spasms, local swelling, increased sweating, changes in skin temperature and colour, softening and thinning of bones, joint tenderness or stiffness, restricted or painful movement, and changes in the nails, dry skin, and rapid shedding of skin.

Symptoms of CRPS vary in severity and duration. Moving or touching the limb is often intolerable and pain may be magnified by emotional stress. Eventually the joints may well become stiff from disuse, and the skin, muscles and bone become wasted and thinned.

Diagnosis

There is no diagnostic test for CRPS. It is diagnosed primarily from the clinical history. Investigations (radiology, nerve conduction studies, bone scans) are used to exclude other diagnoses.

Treatment

Early recognition and prompt treatment of pain and complicating factors, including mood disturbance, provide the greatest opportunity for recovery. The general strategy in CRPS treatment is often multidisciplinary, using different types of medications combined with physical therapies.

Physicians use a variety of drugs to treat CRPS, including antidepressants, non-

steroidal anti-inflammatories and anti-convulsants, as well as opioids, local nerve blocks and ketamine. These drugs have a high capacity for side effects and frequently cause drowsiness, poor concentration and impair mood and motivation.

Physical and occupational therapy works best for most patients, especially goal-directed therapy, where the patient begins from an initial point, regardless of how minimal, and then endeavours to increase activity each week.

People with CRPS often avoid using or touching the affected limb, with this inactivity exacerbating the disease and perpetuating the pain cycle. Thus, therapy is usually directed at facilitating the patient's engagement in physical therapy, movement and stimulation of the affected areas.

Neurostimulation (spinal cord stimulator) might be surgically implanted to reduce the pain by directly stimulating the spinal cord. Implantable drug pumps may also be used to deliver pain medication directly to the cerebrospinal fluid - allowing powerful opioids to be used in much smaller doses than when taken orally. Surgical, chemical, or radiofrequency sympathectomy - interruption of the affected portion of the sympathetic nervous system - can be used as a last resort in patients. However, there is little evidence that these permanent interventions alter the outcomes for the better.

EEG Biofeedback, psychotherapy, relaxation techniques and hypnosis are adjunctive treatments that may assist coping.

Prognosis

The prognosis is more commonly better if treatment of pain and mood disturbance is begun early, ideally within three months of the first symptoms. Delayed treatment may cause irreversible changes in bone, nerve, muscle, mood and behaviour, leading to severe disability.

Frozen shoulder

By Dr John Kagi | Orthopaedic Surgeon mlcoa

“Most patients improve their range of movement with less pain at two years with the conservative regime...”

Frozen Shoulder is a term used to describe a shoulder in which both active and passive movement is markedly restricted.

A better term for the pathological process underlying the condition is “adhesive capsulitis of the shoulder”, meaning, a chronic inflammation of the capsule of the shoulder.

Anatomy

- The shoulder joint is a ball (the head of the humerus) and socket (shallow glenoid) joint.
- The ball is held by an almost circumferential fibrous tissue capsule, reinforced by ligaments and muscular extensions, better known as the rotator cuff.
- The rotator cuff strikes a balance between holding the ball against the shallow socket and allowing for the shoulder’s uniquely large range of movement.

Pathology

Several pathological processes can produce the usually mild chronic inflammation in the capsule that causes it to thicken, become less supple and less elastic and eventually hold the humeral head tighter and so restrict movement of the ball joint. By far the most common cause is trauma to the

rotator cuff with associated subacromial impingement and bursitis, i.e. inflammation, particularly where there has been operative intervention and subsequent further immobilisation.

The pain from these processes results in voluntary guarding and reduced use of the joint which of itself, if prolonged and particularly in an older person, will quickly result in a stiff shoulder. Other traumatic causes, such as fractures around the joint combined with the resultant immobilisation, may have the same result if mobilisation at the earliest opportunity is not encouraged. Acute calcification of the shoulder (crystal deposition disease) will often result in a frozen shoulder.

Other less common causes are diabetes, myocardial infarction, CVA, neuralgic amyotrophy and surprisingly, having or having had adhesive capsulitis (frozen shoulder) in the other shoulder.

Diagnosis

- As usual, a good history is vital and will usually give the cause, as well as the diagnosis.
- Examination will reveal restriction of both active and passive ranges of movement. Restriction of passive external rotation is a reliable indicator of the condition and a way to measure recovery.

- Plain X-ray can reveal chronic rotator cuff disease, disuse osteoporosis, acute calcification or fractures.
- Ultrasound should show an acute rotator cuff tear.
- Arthrography (usually where a tear is suspected) can reveal the diminished joint volume that is the hallmark of a contracted capsule.

Treatment

90% of patients suffering from adhesive capsulitis will respond sufficiently well to conservative treatment, making this the treatment regimen of choice:

- Mobilisation of the joint initially under the supervision of a physiotherapist and with ongoing home exercises for a sufficiently long period (12-18mths), together with;
- Pain relief in the form of non-steroid medication orally or steroid injection into the subacromial region and repeated if necessary, will usually result in a successful outcome.

Of more invasive measures:

- Examination Under Anaesthetic (EUA) may be necessary to confirm the diagnosis, and offers the opportunity for Manipulation Under Anaesthetic (MUA). The latter runs the risk of fracture of an osteoporotic head, or tear of capsule or labrum.

- Hydrodilatation under anaesthetic has been used in an endeavour to stretch the capsule.
- “Open” operative treatment (i.e. cutting open the skin and other tissues so the surgeon has direct access to the joint structures) to release the tight capsule and ligaments, has now been replaced by “arthroscopic” release (i.e. using a thin flexible fiberoptic scope introduced into the joint space). The subsequent reduction in pain of the arthroscopic procedure is less likely to result in operation failure and often avoids other “open” surgical complications, such as aggravation of the condition it is supposed to alleviate.

Prognosis

- Most patients improve their range of movement with less pain at two years with the conservative regime.
- The prognosis is poorer in:
 - Males,
 - Diabetics, and
 - Where an element of compensation is available.

Management of common upper limb sporting injuries

In Australia, it is estimated that one million sports injuries occur every year. This extrapolates to a sporting injury occurring in 1 in 17 Australians each year. The financial cost of these injuries has been estimated to be A\$1 billion per year.

Accurate epidemiologic statistics on sports injuries have been difficult to obtain due to the fact "emergency care" is often administered on site or on the field, with few athletes seeking the attention of a specialist.

It has been estimated that up to 12% of all sporting injuries involve the hand. The highest risk sports for hand injuries include the following:

- Boxing
- Football
- Volleyball
- Netball
- Gymnastics
- Golf
- Skiing
- Soccer
- Bike riding
- Cricket

In addition to the medial costs attributed to management of these injuries, there are often considerable associated costs in terms of time away from work and

graded return to work programs. Children and adolescents carry the additional risk that the injury may involve the growth plate, thereby posing increased risk of long term complications for this group of patients.

Some of the more common injuries affecting the hand as a result of sporting accidents include the following:

- Nail bed injury
- Mallet finger
- Fracture/dislocation of the hand or wrist
- Ligament injury
- Volar plate injury
- Tendon injury (FDP avulsion)
- Skier's thumb
- Tendonitis
- Guyon's canal (Cyclist's Handlebar Syndrome)
- Overuse conditions (Tennis Elbow, Pitcher's Elbow)
- Triangular fibro cartilage complex injury of the wrist
- Boutonniere deformity
- Scaphoid/Bennett's fracture

As with all injury management, early detection, accurate diagnosis and intervention are critical in achieving an optimum outcome and preventing

long-term disability or impairment of hand function.

Greater emphasis is now being placed on the multidisciplinary approach to sports injury management, with the 'team' often including a sports physician, specialist upper limb surgeon, hand therapist, coach, sports psychologist and team physiotherapist.

Individuals who sustain upper limb sporting injuries are at a higher risk of developing long term problems for a number of reasons:

1. Individuals are often required to return to sport earlier than recommended, therefore increasing the risk of sustaining a secondary injury to the hand.
2. They often conceal the injury for fear it will affect their chances of team selection or completion of the season.
3. They often underestimate the severity of the injury and possible long term complications.
4. The general public and press encourage athletes to "play on", despite having sustained what may be viewed as a minor hand or finger injury. This is all part of the 'Hero Worship Phenomenon' of sporting celebrities.
5. The injuries are often assessed and managed by a coach or physio on the playing field while the team waits, leaving inadequate time for appropriate assessment or treatment of the injury.

The primary challenge facing all health care professionals working in the sports medicine field therefore includes the following:

- Education for all individuals involved with athletes regarding the importance of immediate treatment and follow up of all athletic injuries.
- Improvement in the team approach to management of the athlete and injuries.
- Growth of the athlete's awareness concerning the importance of consistency in reporting injuries.



Super-duper bloopers

Our Quality Assurance team takes great pleasure in providing you with accurate reports. For your amusement, here are some interesting observations that were extracted from medical reports mlcoa staff have come across in files received. Do you believe that they're medical errors, transcription errors or other?

Treatment includes physiotherapy with use of a TENS machine, heat, ultrasound and rubbing of the neck to loosen her head. *[I hope it doesn't fall off]*

He still works on normal duties. He has been in the Air Force for 11½ years. Currently he is flying a desk but he is usually involved with missile maintenance.

He and his wife take their boat for a swim. *[I hope their boat enjoys that!]*

She lives in her 22-year-old son... *[Sounds cosy]*

He said he could comfortably bend to touch his knees and could possibly bend to touch his toes for a very large sum of money, but said the pain afterwards would be considerable. As there was no money on offer we settled for touching his knees.

She said that she recalled feeling dazzled and that when the car stopped her head was on the road. She recalled that she had lifted her head up to look through the



windscreen and felt like blacking out. *[I would too if my head was detached from my body and laying on the road in front of me!]*

He drinks no alcohol but keeps a small dog. *[Am I missing something here???)*

He tends to put one foot after the other up the stairs. *[Isn't that how we all do it?]*

He also has episodes where he has attacks of imbalance and his head will spin in an anticlockwise direction... *[Perhaps they could give him a role in the Exorcist?]*

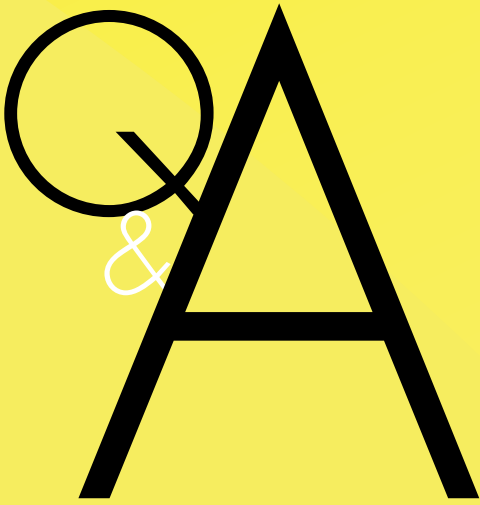
Mr X stated that he had a relationship with the driver of the car who struck him

for a total of five years. *[You would think being struck by a car for five years would be enough to put in a claim of harassment!]*

On 9 January 2007 Mr Y attended on his own. His wife remains in the waiting room. *[To this date? That means she's been there for over two years!]*

He spreads mulch using a fitch pork. *[Is that a pitch fork for dyslexics??]*

Ms Z will go to bed at approximately 9:30pm and sleep through until approximately 7am. She said she used to be able to sleep in until 11am but she finds she cannot any more. *[I'm surprised to hear that sleeping 13½ hours a night is difficult to achieve]*



Phillipa Scott | BDM, WA

Would you ever get plastic surgery? One look at Joan Rivers and you would have to say no to that one **Have you ever done a nudie-run?** Didn't everyone who grew up in the 70s? **Which actor/actress would play you in a TV mini-series about your life?** Jane Fonda - a woman of strong opinions, a fitness fanatic and getting on in years! **Beer, wine or hard liquor?** Why isn't coffee on that list? **What would your last meal be before getting executed?** Tripe and onions washed down with a sardine milkshake. Death would be a welcome release! **When was the last time you bought flowers? Who were they for and why?** I bought flowers for my aunt when, at the age of 87, she underwent cardiac surgery to improve her quality of life. Brave lady **Do you have any phobias?** One sided personal mobile phone calls on public transport **What is your special talent?** You should see my rap dance when I put my contact lenses in after cutting up red chillies **What do you do as soon as you walk in the house**

after a day at work? Respond to our parrot Lionel's "G'day mate, how ya doin'?" **If you could date any celebrity past or present, who would it be?** Jasper Carrott - the funniest man ever **What did you dream last night?** That I was caught in some floods in a Mercedes-Benz **What is your nickname? Why was the nickname given to you?** Jeepers. Never quite sure how that came about **What was the best thing before sliced bread?** Bruce Springsteen **Describe yourself in five words** Shy, timid, quiet, tolerant and patient **What are you doing to reduce global warming?** Driving a Citroen C4 diesel instead of a Maserati **If you had the chance to go back in time, where would you go and why?** Back to a time when we could still laugh at ourselves without always having to be politically correct **If you had the choice to live with a gorilla who knows sign language or a dog who sings, which would you choose?** My husband is quite hirsute and doesn't talk much so I will leave you to work that one out!



Catherine Arlove | State Manager, VIC & ACT

What is your earliest childhood memory? Watching Miss Piggy throw Kermit the Frog across the stage **What movie makes you cry?** Whale Rider **Would you ever get plastic surgery?** Yes **What song would you want played at your funeral?** Prince's *Party Like It's 1999* **Which actress would play you in a TV mini-series about your life?** Sandra Bullock **What would your last meal be before getting executed?** Mum's coq au vin **When was the last time you bought flowers? Who were they for and why?** Last week for a neighbour who looked after our dogs while we were away **Do you have any phobias?** Running out of time **What is your special talent?** Sleeping at my desk **What is your favourite party trick?** Falling asleep at 10.30pm **What do you do as soon as you walk in the house after a day at work?** Kiss my fiancé **If you could date any celebrity past or present, who would it be?** Johnny Depp **What did you dream last night?** I don't dream **What was the best thing before**

sliced bread? My dad **Describe yourself in five word** Tanned, happy, passionate, dynamic, impatient **What are you doing to reduce global warming?** Change the light bulbs over **If you had the chance to go back in time, where would you go and why?** Ancient Egyptian times to see how they made the pyramids and ancient Greek times to have lunch with the great philosophers **Which superhero would you be?** Wonder Woman **If you could change one thing about the world, what would it be?** Eradicate poverty **Have you ever broken the law?** Yes, 90km in a 60km zone down Mt Dandenong Road on my push bike **What did you want to be when you grew up?** An astronaut **What is your favourite time of day?** Sunrise – there's an anticipation of the what the day has in store **Where do aliens live?** In our minds **What is your favourite advertisement?** The BankWest advertisement where the plant speaks

I would like to find out all of the possible uses for the drug Subutex. As stated in MIMS, I understand it is used for drug withdrawal symptoms. However, I would like to know whether or not it is used for pain, or the treatment of any other conditions.

Subutex® is the proprietary name for buprenorphine. It is what is known as a synthetic opioid with properties like morphine.

It has two approved indications in Australia, namely: "Maintenance of opioid dependence, including combination with naloxone" (this is one way of treating heroin addiction), and "opioid withdrawal" (in other words assisting someone to withdraw from heroin).

I would like some medical advice about a blood condition called myelodysplastic syndrome.

How would this disease impact on the post surgical recovery of an injured employee who has had right shoulder arthroscopy, acromioplasty and possibly an open cuff repair?

The worker is currently under the care of a haematologist as well as her orthopaedic surgeon.

Myelodysplastic syndrome if severe, can cause haemorrhaging and can increase the susceptibility to infection which will affect recovery time.

Have you got a question for our medical experts? Support Online is a unique and cost-free resource from mlcoa that provides you with immediate access to expert healthcare advice in most specialist fields.

Email Support Online at: support@mlcoa.com.au

A worker suddenly collapsed to the ground when her kneecap dislocated.

She has previously had problems with the other knee which resulted in surgery.

Her local GP says that because the dislocation happened at work, it must be compensable.

If there is no specific precipitating incident, is it reasonable that it is not work related and instead is coincidental?

This condition is unlikely to be due to work. Generally it is constitutional in nature and is likely to be due to ligamentous laxity.

We have received advice from a GP stating that a claimant had a subdural haematoma due to no known pre-existing condition or traumatic event.

The GP then stated that the subdural haematoma resulted from a sinus infection. The claimant has a very long history (at least 20 years) of the diagnosis of haemophilia.

Please clarify whether either of these conditions would have contributed to the subdural haematoma?

The haemophilia presumably predisposed to the development of the subdural haematoma - a blood clotting defect would mean that the haematoma could develop with less trauma. The sinus problem is likely to be unrelated.

NEWS & VIEWS

mlcoa Baby news

mlcoa is happy to announce the birth of Jane Yarham's (mlcoa's Tasmanian State Manager) baby boy who arrived at 3.33pm on Saturday 16 May weighing 5 pounds and 15 ounces. Mother and baby are doing well. Jane is due to return to the Hobart office in September 2009.

Across Borders Training

mlcoa was recently provided with a unique opportunity to provide professional training to a number of mlcoa WorkCover consultants across Australia. This was achievable via the marvels of digital technology, namely, mlcoa's videoconferencing facility.

The purpose of the training was to encourage mlcoa consultants around Australia to register to become an Approved Medical Specialist (AMS) under the Western Australian WorkCover legislation for the purpose of assessing permanent impairment from outside WA. A prerequisite for the training is prior accreditation in the use of the AMA Guides 5th Edition.

Dr Alan Home, WorkCover WA's training representative, delivered the AMS training by means of videoconference from our Sydney office to NSW, Victoria, SA, QLD and WA offices, with a total of 17 consultants attending.

What is a SLAP tear?

A shoulder is a ball and socket joint similar to the hip; however, the socket of the shoulder joint is very shallow and intrinsically unstable, making it susceptible to injury.

A SLAP tear is an injury to a piece of shoulder cartilage called the labrum. This cartilage surrounds the shoulder socket helping to keep it stable during movement.

The arm muscle (biceps) is attached to the shoulder by a biceps tendon. This tendon connects the biceps to the labrum at the top of the shoulder joint.

A SLAP tear happens when the labrum is damaged where the biceps tendon is attached. SLAP stands for Superior Labrum and Anterior to Posterior.

A SLAP tear may result from:

- A fall onto an outstretched hand.
- Repetitive overhead actions e.g. painter working overhead.
- Lifting a heavy object e.g. removalist.

What are the symptoms?

Other parts of the labrum tend to heal more easily due to an adequate blood supply delivering healing capacity to the area of the tear. In the area of SLAP tears this is not the case and chronic shoulder pain can result.

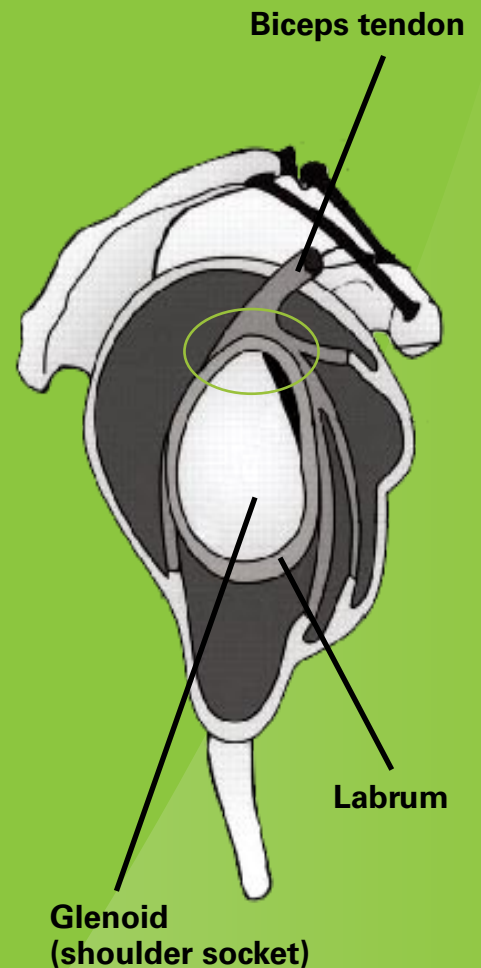
Symptoms can present as a complaint of deep pain within the shoulder either at the back or front of the shoulder joint.

How is a SLAP tear diagnosed?

It can be very difficult to diagnose a SLAP tear. The specialist usually performs a shoulder examination including several tests to detect whether a SLAP tear has occurred.

The specialist must also carefully question the patient to identify symptoms consistent with a SLAP tear.

As this type of injury is not often detectable in normal MRI scans, a contrast MRI is performed by injecting



a fluid called gadolinium, known for its paramagnetic properties, into the shoulder to highlight the tear.

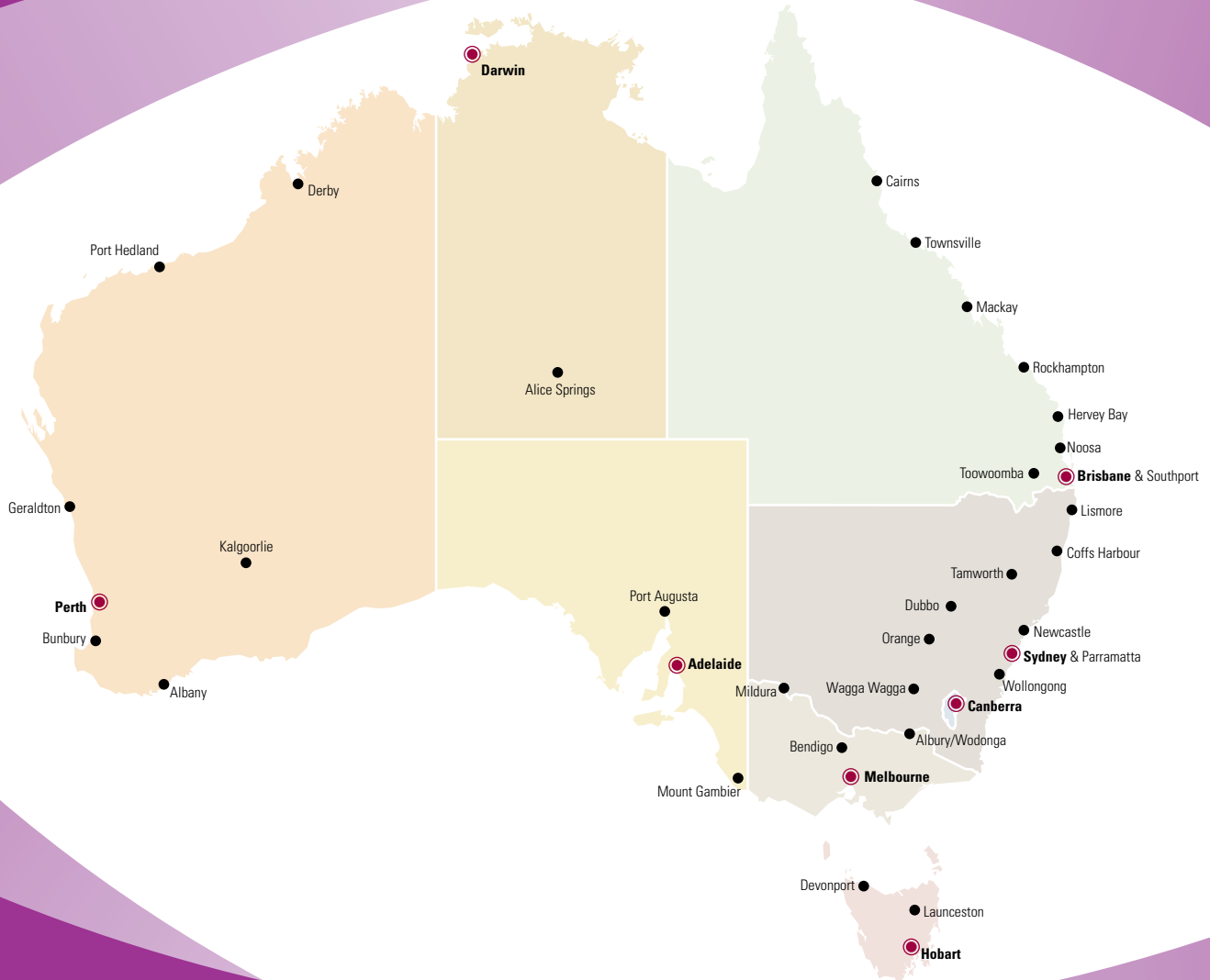
Sometimes the diagnosis of a SLAP tear is only made at the time of surgery.



Congratulations to our Issue 19 winner!

The lucky winner of the \$150 Caltex Ampol StarCash Petrol Card is **Joanne Baird** from Self Insured Services Australia. Congratulations Joanne and happy motoring!

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