ORTHOSPORTS NEWS

ISSUE 12 | SUMMER 2013

Welcome to our Summer edition of Orthosports News

Dr Doron Sher takes a look at *Driving after knee surgery* and Dr Ivan Popoff discusses *Biological repair of articular cartilage lesions*. Dr Kwan Yeoh completes the *Hand and wrist examination series* on page 3.

2013 has seen over 250 GPs complete our RACGP Accredited Category 1 – 40 point *Knee Module*. 2014 will see the commencement of our Category 1 *Shoulder Module* and we will continue to offer the *Knee Module* in our 4 practice locations. 2014 dates are listed on page 4.

We wish you all the best for the festive season ahead – The Team at Orthosports

AOA AUSTRALIAN ORTHOPAEDIC ASSOCIATION

WHO ARE WE?

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

ORTHOSPORTS LOCATIONS

- Concord 02 9744 2666
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Driving After Knee Surgery

There are no well established guidelines that I am aware for determining when it is safe to drive after injury or treatment. For lower limb surgery what we are really interested in is the effectiveness of and time taken to perform an emergency stop.

It is fairly obvious that patients should not drive with a cast or brace on the right leg or if they are still experiencing pain when weight bearing on the limb. If they are driving an automatic car then surgery to the left lower limb is usually not an issue.

If all goes well then most patients will be able to brake effectively 4 weeks after a knee arthroscopy and 4-6 weeks after a total knee replacement but this is very patient specific and can vary greatly. It may be as much as 9 weeks for an ankle fracture and a minimum of 6 weeks from when they start to weight bear for a lower limb fracture.

In general the definition of what constitutes an impaired driver is decided on a case by case basis and the ultimate responsibility for the decision to drive rests with the patient. There is some concern that by clearing the patient to drive we are exposing ourselves to liability for injuries incurred by or caused by the patient.

Some patients will tell you that they can use their left foot to brake but this has been shown to have a slower 'reaction' time than standard one footed braking and cannot be recommended as a safe option.

The last issue is whether braking hard will damage the surgical repair performed. This is unlikely to be the case in a knee replacement or arthroscopy but could be the case in an ACL reconstruction.

There is a correlation between braking ability and the 'step test' and 'stand test' and these can be helpful but should not be used in isolation when deciding fitness to drive

Hau, R, Csongvay S, Bartlett J: Driving Reaction time after right knee arthroscopy. Knee Surg Sports Traumatol Arthrosc 2000;8(2):89-92

Driving is an important function for patients. It is obvious that a patient should not attempt to drive when it is not safe to do so but knowing when they are safe is very difficult. The times noted above are guidelines at best and decision making should be individualized to each patient. On the whole it is better to wait longer if you or the patient do not feel confident about their emergency braking ability.

Dr Doron Sher

Biological repair of articular cartilage lesions

The biological repair of articular cartilage is in many ways one of the holy grails of orthopaedics, in that, if it were possible, it would eliminate the need for joint replacement. There have been many techniques tried with varying degrees of success. There definitely are clinically sound options for acute post traumatic lesions, but unfortunately treatment for established Osteoarthritis remains elusive.

This is a brief overview of current treatment options.

DO NOTHING

Isolated lesions less than 1 cm with intact stable cartilage rims need no treatment as the opposing joint surface is supported by the intact stable rim surrounding the lesion.

Lesions less then grade 4 (partial thickness lesions) do not require direct treatment of the lesion.

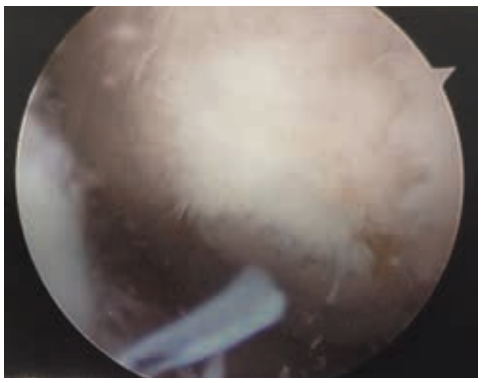
MICRO FRACTURE

This technique is suitable for small post traumatic isolated lesions. The bony bed of the lesion is debrided and a series of holes are punched through the subchondral plate to encourage bleeding. This usually leads to the lesion filling in with fibro cartilage.

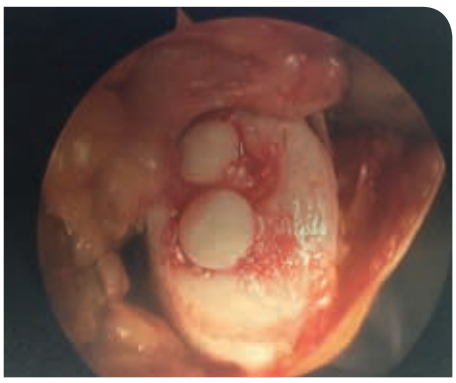
Results of this technique are reasonable for small lesions but tend to deteriorate with time as the fibro cartilage formed is much less resilient then articular cartilage.

M.A.C.I

Matrix induced Autologous Chondrocyte Implantation (MACI). In this technique a small sample of articular cartilage was harvested arthroscopically from the knee, the chondrocytes are isolated grown in tissue culture and impregnated into a collagen matrix. At a second open operation the collagen matrix was trimmed to fit the lesion and glued into place with a fibrin based adhesive. The lesions usually fill in with a hybrid of fibro and articular cartilage over 12 – 18 months.



Grade 4 Articular Cartilage deformity – medial femoral condyle with central osteophyte



Post articular cartilage reconstruction with OATS procedure

The advantage of this technique was it can be used to treat large lesions. The disadvantages include prolonged recovery, highly variable results, and that it requires two operations and is very expensive. Although some patients did very well results were so variable that it is no longer Medicare rebatable in Australia.

OSTEOCHONDRAL AUTOLOGOUS TRANSPLANTATION

This technique involves the harvest of an Osteochondral core from a non weight bearing part of a joint (usually the knee) and transferring it to fill in the articular cartilage defect. It can be preformed arthroscopically or open and can also be used to treat large Hill Sacs lesions in unstable shoulders with significant loss of humeral curvature.

THIS TECHNIQUE WORKS VERY WELL IN APPROPRIATE LESIONS

It is the only one of these techniques that fills in the defect with articular cartilage, it doesn't require restriction of weight bearing and the joint can be mobilized straight away. Its limitations are related to access i.e. it can't be used to treat tibial lesions and the availability of donor sites. If fresh allograft is available (not in Australia) it may be used to fill massive lesions.

INTERPOSITIONAL ARTHROPLASTY

This involves using either auto graft (e.g. fascia lata) or allograft (e.g. tendo Achilles) to cover one of the joint surfaces. Most commonly used for young patients with post traumatic arthritis of the elbow with highly variable results. It has recently been used in the shoulder to avoid replacing the glenoid in young patients requiring total shoulder replacements - with poor results.

A variation which works reasonably well is a labral advancement to cover full thickness peripheral glenoid defects which can be performed arthroscopically.

STEM CELL INJECTIONS

The best that can be said about this at present is its highly experimental.

Stem cells are isolated from adipose tissue and injected into the affected joint. For many reasons, not the least that stem cells have to be contained within an appropriate matrix to differentiate along the desired cell line and also the arthritic knee is a very unfriendly environment for what are very vulnerable cells, it is highly unlikely that this will lead to the development of new articular cartilage. Whether the stem cells have any other as yet unidentified affect on the osteoarthritic process remains to be seen.

This is a very expensive and unproven procedure.

Although some of these procedures are effective in appropriate cases the mainstay of management of articular cartilage lesions particularly in established osteoarthritis is weight control, strengthening, activity modification, avoidance of excessive impact, simple analgesics, NSAIDS and occasionally intra articular corticosteroids which will result in significant improvement in the vast majority of cases, delaying or possibly avoiding the need for joint replacement.

Dr Ivan Popoff

KEY EXAMINATION POINTS

Hand and wrist examination Part 2

In Part 1 of this article, I wrote about the Look component of hand examination. In this Part, we will discuss the Feel and Move components.

FEEL

Palpate each structure in the affected region. Watch for signs of discomfort in the patient's face and minimise patient pain by palpating the painful region once only. It is important to have a knowledge of the underlying anatomical structures and to be precise in palpation. For example, tenderness associated with a base of thumb arthritis may only be 1cm away from De Quervain's tenosynovitis or a scaphoid fracture.

Be systematic in palpation. For example, when palpating the dorsal wrist, start at the radial side, then work your way ulnarward, focussing first at the distal forearm bones, then along the radiocarpal and ulnocarpal joints, then the proximal carpal row, then the distal carpal row.

Feel the size, shape and consistency of lumps and bumps. The most common lumps in the hand and wrist region are ganglia. They are usually found around the wrist dorsally, or on the radial side of the volar wrist, but may be found in other locations as well. Other bumps may come from underlying osteophytes or benign soft tissue tumours.

MOVE

These tests are usually specific to the suspected diagnosis. Therefore, it is important to have already formulated a differential diagnosis from the history. Here are some common examples.

Carpal tunnel syndrome: Phalen's test (Figure 1) consists of 60 seconds of full wrist flexion, while Durkan's test (Figure 2) is 60 seconds of direct pressure on the carpal tunnel by the examiner's finger. Both these tests compress the median nerve and will elicit numbness or tingling in the radial 3½ digits. Tinel's test simulates irritation of the nerve along its length by tapping on it from distal to proximal. Look and feel specifically for thenar eminence and other hand intrinsic muscle wasting and test for power in these muscle groups.

Figure 1

Figure 2

De Quervain's tenosynovitis: Tenderness will be found at the first dorsal wrist compartment (Figure 3).

Figure 3

There may be crepitus here with wrist and thumb movement. Pain will be felt in this area with resisted thumb abduction (Figure 4) or with

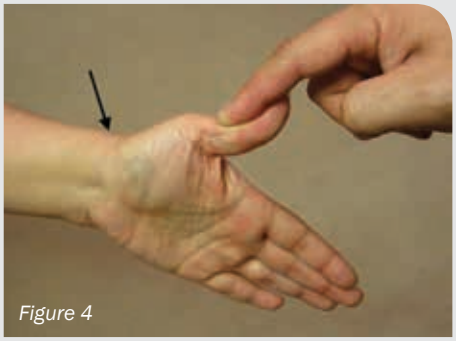


Figure 4

Finklestein's test: Having the patient place her thumb inside her hand and ulnar deviating the wrist will reproduce the pain (Figure 5).

Figure 5

Trigger finger: This is due to a lump in the finger flexor tendon catching in a pulley in the palm of the hand. Tenderness will be felt at the tendon at the distal palmar crease. Placing an examining finger lightly over this point, you should feel a lump in the flexor tendon moving as the patient flexes and extends that digit. The digit may catch in flexion and release suddenly as it extends (Figure 6).

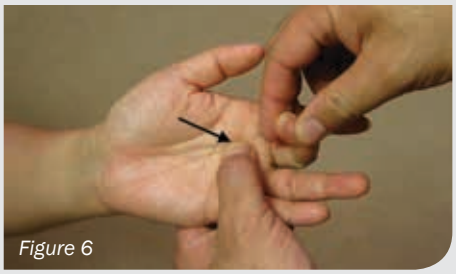


Figure 6

CONCLUSION

Examining the hand and wrist follows the basic pattern of Look, Feel, Move common to all orthopaedic examination. However, the most important part of the diagnosis is, as always, taking a good history from the patient.

Dr Kwan Yeoh

Orthopaedic Surgeons and their Interests

LOCATION	SURGEON	SPECIALTY
CONCORD 47-49 Burwood Road Concord NSW 2137 Tel: 02 9744 2666	Dr Todd Gothelf	Foot & Ankle, Shoulder
	Dr George Konidaris	Foot & Ankle, Hip and Knee
	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 Medica Centre 29-31 Dora Street Hurstville NSW 2220 Tel: 02 9580 6066	Dr Jerome Goldberg	Shoulder
	Dr Todd Gothelf	Foot & Ankle, Shoulder
	Dr George Konidaris	Foot & Ankle, Hip and Knee
	Dr Andreas Loefler	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
PENRITH Suite 5B, 119-121 Lethbridge Street, Penrith NSW 2750 Tel: 02 4721 7799	Dr Todd Gothelf	Foot & Ankle, Shoulder
	Dr George Konidaris	Foot & Ankle, Hip and Knee
	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 George Konidaris	Foot & Ankle, Hip and Knee
	Dr Andreas Loefler	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

Sport & Exercise Medicine Physicians

PHYSICIAN	LOCATION	PHYSICIAN	LOCATION
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Dr John Best	Randwick		

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Concord: Tuesday, 25th February, 2014
Randwick: Thursday, 27th March, 2014
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"I was very impressed by both the online and face to face components and found it very useful in updating my knowledge."

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