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PARTIAL-THICKNESS ROTATOR CUFF TENDON TEARS

Dr David Christie

Partial-thickness rotator cuff tears are not a single entity but rather a spectrum of disease states affecting the rotator cuff tendons. From asymptomatic to significantly disabling, partial-thickness rotator cuff tears can affect patients in different ways. Young overhead athletes' presentation differs with respect to aetiology, goals and treatment from older patients with degenerative tendon tears.

Pathogenesis of degenerative tears is multifactorial. Articular surface tears are more likely caused by primarily intrinsic factors, while both intrinsic and extrinsic factors may play a role in the development of bursal surface tears.

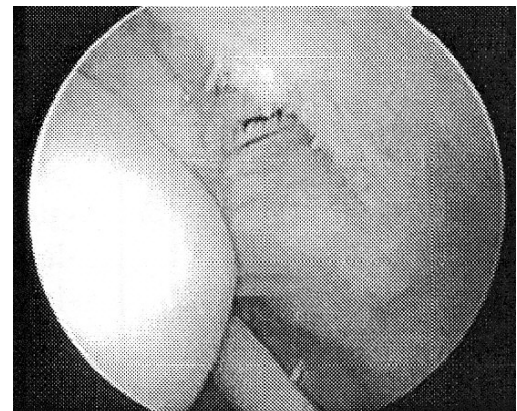
Natural history of partial-thickness tendon tears is incompletely understood, but there is significant evidence that articular surface tears can progress (70%) to a larger size or full thickness over relatively short period of time. Granulation tissue laid down around the torn Supraspinatus tendon insertion contributes to the progression of rotator cuff tears by weakening the insertion of the remaining intact tendon. Although some patients do become asymptomatic over time, few tears heal anatomically.

For most patients with suspected partial-thickness cuff tears – especially young, overhead throwing athletes – MRI Arthrography is the imaging modality of choice to best visualize these tears and assess for other co-existing intra-articular pathology (glenoid labrum tears). The use of contrast agent and coronal oblique T1-weighted fat suppression images yield high sensitivity (84%) and specificity (95%).

Diagnosis of clinically significant partial-thickness tears should be based on the patient's symptoms and clinical findings in conjunction with MRI arthrography.

Treatment should be based on the patient's goals, aetiology, and more importantly the depth of tendon tear. Considerable thought is given to differentiate between articular and bursal surface tears. Non-surgical treatment - activity modification, physiotherapy and NSAIDs - is successful in majority of patients with improvement over six months.

Surgical treatment generally considered for patients with symptoms of sufficient duration and severity who have failed a trial of conservative treatment (4-6 months). Surgery is based on the location (articular or bursal surface) and depth of the tear. It should consist of tendon debridement in articular surface tears (<6mm depth) and bursal surface tears (<3mm depth). Debridement relieves mechanical irritation in the glenohumeral joint and subacromial space as well removing inflammatory mediators present in the torn tendon tissue. Consideration should be given to repairing tears >6mm depth (>50%) on articular surface and >3mm depth on the bursal side. The role of acromioplasty has not been clearly delineated but it should be considered when there is evidence of extrinsic causation, especially with bursal surface tears.



Dr Angus Nicoll
(07) 5597 3927
Hip & Knee Surgery



Dr David Christie
(07) 5597 3127
Knee & Shoulder Surgery

Suite 6, Ground Floor
14 Carrara Street
Benowa QLD 4217

f: (07) 5597 5019

e: gcos@ozdoc.com.au

www.gcos.biz

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For booking
please contact:

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KNEE OSTEOTOMY MAKING A COMEBACK

Dr Angus Nicoll

Mal-alignment of the knee may be either a cause or a consequence of unicompartmental knee arthritis in young, active adults. An osteotomy is surgery in which the bones are cut and reshaped. An osteotomy changes the position of the knee so that the bones bear on an area of the knee that is not diseased. Decreased pain and improved function result. It may also slow damage in the knee and delay the need for total knee replacement surgery.

Proximal tibial osteotomy for the varus knee and distal femoral osteotomy for the valgus knee have been used for decades to manage this condition; however, their use had decreased significantly as the popularity of unicompartmental and total knee arthroplasty has grown.

However, modern techniques involve precise realignment, with the option of computer image guided surgery, and rigid internal fixation. An opening wedge restores ligamentous tension and multiplanar correction can be considered. Immediate stabilization of the realigned bone allows for early motion and weight-bearing; cast immobilization is unnecessary.

With the advent of autologous cartilage transplantation techniques for focal full-thickness articular cartilage injury, combined or staged high tibial osteotomy is becoming increasingly popular. The osteotomy can protect from loading the areas of articular cartilage or meniscal transplant as well

as protecting other local pathology such as osteochondritis dissecans. In the face of cruciate and/or complex ligamentous instability coupled with mal-alignment or chondral damage, high tibial osteotomy with ligament reconstruction provides a solution to complex orthopedic problems.

Recent long-term follow-up studies have concluded osteotomy allows for improved function and pain relief in properly selected young patients.

Osteotomy about the knee may be an option to consider in your younger, more active patients with malalignment, unicompartmental osteoarthritis, complex repairs or transplant of cartilage material, and/or complex ligament instability.

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