ROUNDUP360

Shoulder & Elbow

Arthroscopic capsular release successful after six months

Treatment of adhesive capsulitis (frozen shoulder) is in itself not controversial. The majority of surgeons would recommend a period of conservative management with physiotherapy intervention and steroids if appropriate. However, the treatment of persistent frozen shoulder is more of an area of debate. There are proponents of hydrodilation, persistent conservative therapy, manipulation under anaesthetic and arthroscopic capsular release. Along with the preferred treatment modality, the optimum timing for surgery also proves controversial. Some surgeons argue that the majority of patients will settle down naturally after six months and surgical release should be reserved for post disease residual stiffness and others argue that earlier release results in more rapid return to function. In a very straightforward study, surgeons in **Toplice (Croatia)** have set out to establish what their satisfaction and functional results are in both the idiopathic and post-traumatic frozen shoulder group. They were prepared to offer MUA combined with arthroscopic capsular release to patients who failed conservative therapy. Their study includes the results of 50 patients, 25 with idiopathic and 25 with post-traumatic frozen shoulder with an average age of 49 years and follow-up was to six months. Patients were only offered surgery if they had undergone a full course of physiotherapy and failed to progress.[1] Outcomes were assessed with range of motion and Constant scores. Patients with idiopathic stiffness did not improve their Constant scores as much as those with post-traumatic stiffness (36 to 86 vs 32 to 91). Both patient groups had a satisfactory improvement in range of motion with the idiopathic group achieving slightly poorer outcomes in all measures. While arthroscopic release and MUA offers excellent results across the board, in this study those patients with post-traumatic stiffness improved their outcomes markedly more than their idiopathic comparison group. Patients with post-traumatic stiffness achieved higher Constant scores, better range of motion and, most crucially, better patient-reported satisfaction scores.

MCIC in cuff surgery

While the shoulder fraternity has had validated outcome scores for as long as any other orthopaedic subspeciality, there is a slight lack of refinement to the scores. The Constant shoulder score is the most popular score in use, but there are several published versions and the score is clinician-administered. Compounding the problem is that with the myriad of shoulder conditions, the minimally clinically important change (MCIC) is not known for many shoulder diagnoses. Clinical scores, either self-reported or investigator-related, are becoming increasingly popular as outcome measures in clinical studies and in some health economies as measures of outcome quality. Thus it is very important to know what clinically significant changes are, not only what is statistically significant. This nice study from **Turku (Finland)** set out to define the MCIC for the Constant score. They recruited 802 prospective patients, all of whom underwent arthroscopic treatment for partial- or full-thickness rotator cuff tears. Outcomes were assessed with the Constant score at three months and a year. Patients were asked "Is your shoulder better or worse after the operation?" and this was used as the dichotomous outcome to determine the MCIC. The study team managed an impressive 97% follow-up and used a plethora of statistical approaches to estimate the MCIC. Their calculations yielded a mean MCIC of 10.4 points for improvement in rotator cuff surgery on the Constant score.[2] The Constant score was not originally designed to evaluate patients treated with cuff tears, and this has to be borne in mind (which may explain the relatively large MCIC). The score is widely used also for this group of patients.

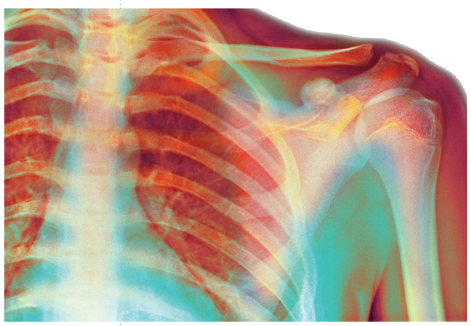
Analgesia following arthroscopic cuff repair

Establishing optimal post-operative pain relief is essential. It can improve outcomes and satisfaction, and reduce lengths of stay while minimising complications. Patient-controlled analgesia (PCA) is an effective and regularly used analgesic, but requires the patient to remain an inpatient for longer, and carries with it the complications associated with opioid analgesia. While in some centres regional blockade has all but eliminated PCA as a post-operative pain control strategy, in shoulder surgery it is not available in all centres, nor indicated for all patients. Researchers in **Seoul (South Korea)** have taken an alternate approach. Reasoning that PCA may not be ideal for the ambulant patient, but that pain in the early post-operative stage after rotator cuff repair is essential to control, they devised a randomised controlled trial to compare the effectiveness and adverse effects of intravenous patient-controlled analgesia and a multimodal shoulder injection. Outcomes including pain, nausea and vomiting, and adverse effects were assessed at two, six, 12, 24, and 48 hours after surgery. Secondary outcome measures included use of rescue analgesics and antiemetics, satisfaction scores, and cost. Their outcomes were mixed. While the injection controlled the pain better at two hours post-operatively, the use of rescue analgesics was greater between 12 and 48 hours post-operatively. There were (as would be expected) lower rates of nausea in the injection group, but no other differences noted (adverse events or satisfaction). There was a saving of around $130 with the injection group.[3] Considering the expense and need for special devices for PCA, multimodal shoulder injection looks to be a more attractive option, particularly in an ambulant surgical practice. Here at *360* we would be delighted to see a comparison of the multimodal injection with regional

anaesthesia techniques which potentially offer profound analgesia and may reduce some of the side effects associated with anaesthetic agents.

Platelet-rich fibrin

As "sure as eggs is eggs", the industry will continue to develop new and attractive treatment options to tempt the surgeon into using a more modern (and usually more expensive) surgical technique. Hot on the heels of the now mostly rejected platelet-rich plasma (PRP), we have platelet-rich fibrin (PRF). We are delighted to see researchers in **Nice (France)** conducting some clinical trials on this new technology (which may well, after all, offer little advantage over PRP) prior to advocating widespread clinical use. Noting that achieving tendon healing in the arthroplasty shoulder to bone is a challenge, these investigators conducted a small pilot series with this new technique. The research team introduced a leukocyte- and platelet-rich fibrin gel under arthroscopic control following rotator cuff repair. The pilot study consisted of 20 patients randomly allocated to either PRF or standard treatment. Rotator cuff repair was achieved with a double-row technique and outcome measures were assessed using the subjective shoulder value, visual analogue scale, Constant, and Simple Shoulder Test scores. Interestingly, these investigators also included Doppler ultrasonography to measure the vascularisation of the cuff tendons. While the research team were unable to establish any differences in the clinical outcome measures (you wouldn't necessarily expect them to), they did establish that the vascularisation index measured on ultrasound was significantly higher in the L-PRF group than in the contralateral healthy shoulders at six and 12 weeks.[4] While this pilot study does show some encouraging results with no clinically reported differences, an improved vascularity on ultrasound would not justify use of this technology. It would, however, suggest that there may be a clinical effect in a larger study. This will have to be proven in larger trials.



Cuff tear and suprascapular nerve neuropathy? Xref

The suggestion that a rotator cuff tear may be associated with a suprascapular nerve neuropathy is not a new one and the idea has been floated (without much evidence) for several years. There are some who advocate routine exploration and nerve release for massive cuff tears, including some opinion leaders in the field of arthroscopic shoulder surgery. The theoretical explanation for the association between retraction of the tendinomuscular complex and the neuropathy remains unclear, as does any real body of evidence to support cuff tear-associated suprascapular nerve neuropathy as a concept. Researchers in **Saint-Grégoire (France)** reasoned that it ought to be possible to detect any suprascapular nerve palsy with electromyography. They set up a multicentre prospective study to try and ascertain if there is an association (and possible causal link) between massive cuff tear and suprascapular nerve neuropathy. They recruited 50 patients from two centres who all had retracted tears of both supraspinatus and infraspinatus. The diagnosis was confirmed with CT arthrography, and preoperative electromyograms were also performed.[5] Of the 49 patients who completed the study protocol, there was only a single suprascapular nerve neuropathy. Although 12% of patients had a positive finding (one radicular lesion, three partial axillary palsies, one stroke), there was no evidence of consistent lesions to justify routine (or even occasional) release of the suprascapular nerve. We commend the authors of this paper for a well conducted study that debunks a currently accepted concept.

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