

COCHRANE CORNER



New and updated reviews published by the Cochrane collaboration.

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In a decidedly upper limb themed series of reviews this edition of Cochrane Corner summarises four new and updated reviews published by the Cochrane Bone, Joint and Muscle Trauma Group over the last few months. The tenacious reviewers at the Cochrane collaboration have turned their beady eyes to conservative treatments for shoulder dislocations and clavicle fractures along with evaluation of femoral nerve blocks in knee replacement and how to best manage entrapment injuries in children.

CONSERVATIVE INTERVENTIONS FOR TREATING MIDDLE THIRD CLAVICLE FRACTURES IN ADOLESCENTS AND ADULTS¹

Middle third clavicle fractures are common injuries, and despite recent increases in operative management in the light of several recent randomised controlled trials there really is no clear consensus as to what is the best management and most of these fractures are still managed conservatively. Since the initial publication of this updated review from Sao Paulo (Brazil), first published in 2009, there have been a number of high quality studies in this area. The review evaluates different conservative methods of treating acute middle third clavicle fractures with primary outcomes measures of shoulder function or disability, pain and treatment failure.

Three RCTs met the review inclusion criteria with a total of 354 participants. Two trials compared figure of eight bandaging *versus* standard arm sling (n = 234).

One trial assessed shoulder function using a non-validated score and subjective criteria and found no significant difference. The study also reported no difference in time to fracture consolidation or return to work or sports activities.² The other trial found slightly higher pain levels of marginal clinical significance during wear in the figure of eight bandage group after 15 days on the Visual Analogue Scale (VAS) but no significant difference in the duration of analgesia requirement.³ The data across both trials were too heterogeneous for meta-analyses and the authors of this review assessed the studies to be underpowered with poor methodology.

The third trial in this review looked at therapeutic ultrasound comparing low intensity pulsed ultrasound *versus* placebo. No differences were found in time to fracture healing, pain on the VAS, or analgesia requirement.⁴ The authors conclude no verdict on the type of immobilisation and no evidence for enhanced recovery with therapeutic ultrasound.¹ Perhaps given the pendulum swing away from operative intervention in some centres with two recent RCTs suggesting conservative treatment is superior to operative it is time to start re-evaluating how best to manage patients with conservative therapy.

CONSERVATIVE MANAGEMENT FOLLOWING CLOSED REDUCTION OF TRAUMATIC ANTERIOR DISLOCATION OF THE SHOULDER

Surgical decision making surrounding shoulder dislocation is often

thought of as the dichotomy of choice between operative and non-operative management of anterior shoulder dislocation. However decision making does not end there, if the patient is to be managed conservatively what regime is best? Should they be immobilised? If so in what position? How about physiotherapy? In an updated review from Middlesborough (UK), Cochrane collaborators aimed to answer these questions and more by assessing the effects of immobilisation and rehabilitative interventions after closed reductions of acute traumatic anterior shoulder dislocations. Following the thorough Cochrane style literature search all the identified studies with suitably high quality methodology for inclusion only looked at a single comparison; immobilisation in internal rotation versus external rotation. A standard sling, which rests the arm in internal rotation, is most commonly used and is certainly the traditional approach. However, there has been an increasing interest in external rotation slings and consequently publication of studies in the last decade that suggest immobilisation with the arm in external rotation may have the advantage of reduced re-dislocation rates and this has provoked a number of clinical trials. This review included three RCTs and one quasi RCT with primary outcome measures that were suitable for inclusion in the review reporting the outcomes of 470 patients. All studies examined re-dislocation rates and patient reported outcomes. Some meta-analyses were possible from pooling the available homogenous data to examine incidence of both re-dislocation (possible with three trials) and for aspects of resumption of sporting activities (possible in two trials). The meta-analysis did not reveal any significant differences in re-dislocation rates (risk ratio 1.06; 95% CI 0.73 to 1.54). No evidence for difference was found between the two groups in return to pre-injury levels of activity at two year or longer follow up.⁵ Clearly, no conclusion can be drawn to inform choice but it is also apparent that there is a paucity of quality RCTs looking into the duration of immobilisation and other rehabilitative interventions. Given the inconvenience patients face with external rotation splints and no apparent benefits it would seem sensible to us here at 360 to stick with the more traditional 'broad arm sling'.

PLATELET RICH THERAPIES FOR MUSCULOSKELETAL SOFT TISSUE INJURIES⁶

One of the most controversial current therapies in musculoskeletal medicine is the use of platelet rich therapies (PRT) for treating a variety of degenerative and injury related conditions. Seemingly each month results in a different trial with different results. The rationale for use is that growth factors released from platelets can help in repair and regeneration of tissue. Local application of platelet rich therapy (PRT), either as a sole intervention or as an augment to surgical repair, is becoming increasingly used in clinical practice in the hope that it might enhance tissue recovery

allowing earlier return to pre morbid function. This interest has led to a large number of clinical studies and this updated review from Brazil looks to assess the effects of these therapies. This is one area where a reasonable number of well conducted trials exist and the study team were able to draw on results of 19 trials with a total of 1088 participants made comparisons between PRT and various forms of control (placebo, autologous whole blood, dry needling or no PRT) and this review presented comprehensive analyses sub grouped by eight different clinical conditions looking at short, medium and long term function as well as pain and re-tear rates. Conditions analysed included rotator cuff tears, ACL reconstructions as well as a number of tendinopathies.⁶ Amazingly despite the wide clinical interest and ongoing reporting of a large number of clinical trials the authors of this review concluded that overall, and for the individual clinical conditions, there was insufficient evidence to support its use routinely, though no difference in adverse effects between the two groups were reported.⁶ Perhaps it is time to leave PRT alone – it seems unlikely to be the ‘magic bullet’ clinicians and patients have been looking for in regenerative medicine.

INTERVENTIONS FOR TREATING FINGER ENTRAPMENT INJURIES IN CHILDREN ⁷

There is a wide variation in the management of fingertip injuries in children with both conservative and surgical treatments commonplace, alongside controversy over the use and duration of antimicrobials as well as dressings practice – an injury in which it can be said there exists a true equipoise. Management is usually based on local surgeon preference in the absence of general consensus or a broad evidence base on which to make treatment decisions. This new review from Australia found two RCTs assessing interventions for finger tip injuries in children. One trial looked at a seven-day course of antibiotics versus no antibiotics, both after formal surgical repair. One child in each group had an infection (1/66 vs 1/69) both associated with more severe injuries.⁸ The other trial compared two types of dressings (paraffin vs silicone net). Wound infection and skin necrosis rates were low and comparable in both groups but the study does make note of less distress to the child when silicone dressing was being changed.⁹ The authors conclude that there is clearly little quality evidence to draw conclusions from and further studies on other outcomes such as tip function, nail growth and deformity are also required.⁷

FEMORAL NERVE BLOCKS IN TOTAL KNEE REPLACEMENT ¹⁰

Post-operative analgesia is key to a successful course after operation. Patients who are treated with effective multimodal analgesia and an appropriate rehabilitation strategy are known to be discharged home sooner and have higher satisfaction rates. Anaesthetists’ are becoming increasingly reliant on regional anaesthesia techniques such as the femoral nerve block to provide effective post-operative analgesia.

A review team in Sydney (Australia) set out to establish what exactly

the evidence to support this type of regional anaesthesia is. The review covers randomised controlled trials comparing femoral nerve blockade (FNB) to a variety of other analgesia strategies (PCA, opioid and epidural anaesthesia) either as an adjunct or alone. There were a large number of eligible publications with the authors able to include 45 studies reporting the results of 2710 participants. The majority of studies (19) compared FNB to PCA with opioid analgesia while 10 compared epidurals and a smattering of studies investigated the effects compared with local infiltration. The results of the review were conclusive. Pain as measured at rest and on movement was lower in the FNB group as compared with any of the controls during the first 72 hours and this was reproduced across the pooled results which demonstrated a moderate effect size for pain at rest and a large effect size for pain on movement both within the first 24 hours. Patients in the regional anaesthesia group had a lower risk of nausea and vomiting along with a greater range of knee flexion and higher chance of patient satisfaction. The quality of evidence is sufficient to make firm conclusions about FNB in regards to PCA with opioid analgesia. There is currently insufficient evidence to tease out the relative merits of single shot block *versus* nerve sheath catheter and widespread local infiltration. Based on the results from this review it is clear that optimum outcomes for total knee replacement can be best achieved with regional anaesthesia as opposed to opioid epidural.

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