The Bone & Joint Journal

Journal Club: 23 Aug 2013
Chairmen: Mr BA Rogers & Mr DM Ricketts
Department of Trauma & Orthopaedics, Brighton & Sussex University Hospitals.

Theme: Adult Shoulder Surgery

Presented Papers

Soliman O, Koptan W, Zarad A. Under-coracoid-around-clavicle (UCAC) loop in type II distal clavicle fractures. *Bone Joint J* 2013;95-B:983-87.

Dattani R, Ramasamy V, Parker R, Patel VR. Improvement in quality of life after arthroscopic capsular release for contracture of the shoulder. *Bone Joint J* 2013;95-B:942-46.

Soliman O, Koptan W, Zarad A. Under-coracoid-around-clavicle (UCAC) loop in type II distal clavicle fractures. *Bone Joint J* 2013;95-B:983-87.

Reviewer Mr Sohail Yousaf

Purpose

- assess the strength of a new suture fixation technique for Neer type II distal clavicle fractures with 3 loops of Ethibond suture

- ability to maintain reduction of the fracture site until bony union

- **Methods**
- Prospective study
- Between, 2009 – 2011 14 consecutive patients
    - 11M, 3F
    - Mean age 34.57 years (22 – 41)
    - 9 Rt, 5 Lt clavicle
    - 12 RTA, 2 sport injuries
    - 3 patients with comminuted fractures

    - 2 patientss with associated injuries:
        - one distal radius fracture
        - one with fracture of the mandible
    - All underwent surgery within 1wk

- Outcome measures:
    - Time to union
    - Constant score

- Fracture assessed with plain XR and 3D CT scan, reviewed by single independent radiologist
- Union was determined by grading the fracture line and bone bridging of the fracture, both cortical and medullary
- Mean follow up: 24.64 months (14 - 31)

Surgical Technique

- GA, beach chair position
- 4cm incision from distal clavicle to coracoid
- Subperiostal dissection on distal clavicle
- ACJ capsule left intact
- Base of coracoid exposed
- UCAC technique and suture secured to distal fragment or ACJ capsule – no drill holes
- No drain, subcuticular closure of skin
- Post-op
    - Broad arm sling for 4/52
    - Hand & elbow exercises but no shoulder movement for 4/52
    - Passive and active assisted exercises of shoulder 4 – 6wks post-op
    - Active exercises of shoulder > 6wks post-op

- **Results:**

- Constant score: 96.07 (91 – 100) at 18 months post-op

- All pts resumed pre-op activities (employment and ADLs) in 6 months

Conclusion

"In appropriate injuries, fracture stabilisation using the UCAC loop results in excellent clinical and radiological outcomes with few complications, along with preservation of the AC joint and avoidance of the need for a second operation for removal of hardware"

Critique

Overview

- Level of evidence IV (case series)

- Prospective study:
    - no clear inclusion / exclusion criteria
    - follow up protocol unclear

- Outcomes different from objectives:
    - strength of fixation vs constant score + time to union

- **Strengths**

- Prospective study

- Interesting topic – several fixation techniques already described

- No patients lost to follow up

Methodological Concerns

- Homogenous patient sample no control group

- Classification errors?

- How many surgeons?

- How many examiners on f/u for Constant score?

- Although "Constant score at 18 months" as outcome measure, 2 pts had f/u just for 14 and 17 months respectively

- Follow up period relatively short as well.

Conclusion of Critique

- Prospective case series study with rather small sample and follow up.
- Despite methodological concerns, authors' conclusion seems reasonable on the specific sample, in their hands, since they had good results and they acknowledged some of the limitations.

Dattani R, Ramasamy V, Parker R, Patel VR. Improvement in quality of life after arthroscopic capsular release for contracture of the shoulder. *Bone Joint J* 2013;95-B:942-46

Reviewer Mr Will Kieffer

Summary

To quantify the potential benefits of arthroscopic capsular release for shoulder contracture, using clinical & cost analysis outcomes

Purpose

Address the evidence base for effectiveness and cost-effectiveness of treatment of 'frozen shoulder/adhesive capsulitis'

–Assess functional outcome

–Assess health related QoL outcomes following arthroscopic capsular release (ACR)

Methods

•All patients Jan 2009-Jan 2012 (n=100)

–Failed non-op Rx of 'shoulder contracture' and subsequently underwent ACR

–Diagnostic Criteria

•Insidious onset of pain

•Global restriction of movements in the shoudler

•Loss of passive ER compared to controlateral shoulder

•Normal radiographs

•Inclusion Criteria

–Only patients in stiffness-predominant phase

–(80% evaluated with US/MRI)…?

•Exclusion Crtieria

–Contracture with concomitant cuff tear

–Post-traumatic stiffness

–Post-op contracture

–Previous surgery for contracture incl MUA

•Surgical Methods

–No Pre-scope MUA

–ASD (bursectomy and acromioplasty) if large spur or impingement

–360^0 capsular release

–Physio from Day 1

•Follow up

–Clinic Review at 6/52 & 6/12

–OSS, EQ-5D, ASES IR score pre-op & 6/12

Results

n=100

–68 ACR alone, 32 ACR & ASD

–Stat sig improvement at 6/12 from pre-op in

•Median IR, ER, flexion, abduction ergo increase in ASES score

•Median OSS

•6/12 f/u EQ-5D within 1SD of matched population

No significant difference

–Arthroscopic Capsular Release (ACR) vs ACR & ASD

–Difference in symptom duration

10% had persistent pain requiring injection

4% required subacromial injection for impingement pain

1% required rpt ACR

Conclusion

'ACR results in a significant improvement in the range of movement and functional outcome in most patients with contracture of the shoulder within six months of surgery'

'ACR is a safe, reliable and effective procedure that can quickly restore normal function in patients with contracture of the shoulder'

Critique Overview

Not clear what sort of study this is

–?retrospective cohort, no attempt to control for selection bias or mention of if this was a single surgeon cohort

–Need to patient match with non-op or MUA to draw reliable conclusions.

Strengths

•Excellent data collection

–EQ-5D, OSS, ASES

•Good statistical analysis

–Matching patients for EQ-5D

Methodological Concerns

What happened to those that had 'other procedures'

What were the inclusion criteria?

–Failure of non-op Rx?

What proportion of patients was actually troubled by their condition?

20% not imaged at all - thus were there any missed cuff tears

Intensive physiotherapy-is this the key?

No pre-op MUA, no mention of post-op protocol (ie positioning)

•Inferior release-axillary nerve at risk

•Posterior release shown to not provide additional benefit

Snow M, Boutros I, Funk L.
Posterior arthroscopic capsular release in frozen shoulder.
Arthroscopy 25(1): 19, 2009

•15% complication/failure rate, is this acceptable?

•Why pick mean of 2.5 years of symptoms when evidence says up to 10 years?

•Level of disability will not follow a static course, some will get better, others will worsen-overall trend to improvement

•Health economics state 1hr physiotherapy per week; was this the regime followed?

Conclusion of Critique

•Interesting

•Politically relevant

•Methodoligical concerns

–Patient cohort needs clarification

–Hinging lots of stats on arbitrary definitions

–Should all have been imaged?

–Small cohort

–Power study…

•A non-stiff shoulder works better than a stiff one, is this a new finding?

•Without comparison to other Rx and their costs is this really a useful paper?

–If an MUA costs £20 and an ACR+ASD £2000 c.f. equity of Rx in NHS