

## Case Commentary

# A presentation of stiff and painful shoulder – a case based commentary

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### Abstract

The presentation of a patient with the complaint of a stiff and painful shoulder is a familiar occurrence in private practice. The editors invited three osteopaths to respond to a written case that outlined the presentation of a shoulder complaint in a 57-year-old male. The case used in the commentary represented a real clinical presentation, although the non-clinical details have been altered to protect the patient's privacy. A written summary of the case including various physical examination findings was sent to each osteopath, and is included in the article. Each osteopath was invited to submit written responses to a short list of questions that aimed to guide the discussion. In developing their responses, authors did not have access to the other authors responses prior to publication. Responses were edited for clarity.

**Keywords:** shoulder pain, case discussion, osteopathy

### CASE SUMMARY

- A 57-year-old male complaining of a left shoulder problem is referred by a local general practitioner (GP) for "assessment and treatment". Initial onset of sharp pain while digging in garden three months previously followed by gradual three week development of aching pain over lateral aspect of left arm and occasionally into forearm including thumb and first finger. Patient reports pain disturbs sleep, and is unable to lie on left side.
- Over the last three weeks pain has been increasing in intensity, and the patient now complains of being unable to lift his left hand above the level of the shoulder due to pain and stiffness.
- Minimal relief after soaking in hot pool. Aggravated by any sudden or jarring movements. No previous episodes of shoulder pain.
- No prescription medications, irregular self-medication with left over Voltaren (Diclofenac) tablets found at home.
- Patient reports gradual onset over three years of difficulty urination.
- History of chronic pancreatitis. Gastric intolerance to more than three glasses wine – consumes with evening meal.
- Self employed as a real estate agent.

### EXAMINATION FINDINGS

Patient is 167cm tall, weight 89kg (Body mass index = 31.9kg/m<sup>2</sup>). Stocky build. Abdominal distribution of fat – protruding abdomen. Right hand dominant.

Active and passive movement findings are presented in Table 1. Active right shoulder flexion was 100° with active abduction of 90°. External rotation tested in 70° abduction was 15° only. This contrasted with 80° on the asymptomatic (right) side. Internal rotation was restricted bilaterally to 35°. Active resisted movements of the rotator cuff were normal and non-symptomatic. Upper limb neurological evaluation was unremarkable with normal power and normal symmetrical muscle stretch reflexes.

### Case Commentary: Ilya Chemeris

#### General comments on the case

This case would appear to me as quite a typical case of frozen shoulder. The main supporting features being: gradual onset after mechanical provocation, shoulder pain and stiffness, and disturbed sleeping if positioned on the affected shoulder. The movement restrictions recorded are typical for a shoulder capsular pattern, where external rotation is affected most of all, followed by abduction and flexion, internal rotation being the least affected movement.<sup>1</sup>

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**Table 1.** Active and passive movement findings for the glenohumeral joint

Left Symptomatic	Right Asymptomatic
<b>Active</b>	
Flexion 80° Abduction 70°	Flexion 100° Abduction 90°
<b>Passive</b>	
External rotation 15° (tested in 70° abduction) Internal rotation 35° Flexion 80° Abduction 70°	External rotation 80° (tested in 90° abduction) Internal rotation 35° Flexion 110° Abduction 90°

**Notes:**

1. All movements estimated with patient positioned in sitting
2. External / Internal rotation performed with patients elbow flexed to 90°
3. All ranges estimated visually by clinically experienced observer – not measured using goniometer

**Box 1.** Questions asked of respondents to guide responses to presented case

1. Are there any other history points you would like?
2. Are there any further aspects of the examination you would perform?
3. If so why would you perform them?
4. Would you undertake any further investigations (eg imaging, special tests, lab work etc) and why?
5. What is your differential diagnosis?
6. What would be your initial management or treatment of this patient?
7. How effective do you expect treatment to be?
8. Would you involve other health professionals in the treatment?
9. What would be your course of action if the patient had not improved in (i) two weeks, (ii) two months?
10. Any other comments you wish to make about this case?

No difference between active and passive ranges of movement suggests possible joint / adhesive type of restriction rather than a musculotendinous lesion. I would expect a hard or rigid end feel on examining this particular patient, a typical finding in adhesive or joint type of restrictions. Pain radiation down to the thumb and first finger are often a part of the condition and is probably related to adhesions in the anterior shoulder tissues adjacent to brachial plexus. I do not attempt to differentiate between the frozen shoulder and adhesive capsulitis as this does not make any difference to the treatment approach.

In my experience, pectoralis muscle tightness and/or scapular protraction may result in a movement restriction pattern similar to the shoulder capsular pattern, in which case retracting the scapula (if possible) will change abduction and somewhat external rotation towards normal.

Chronic pancreatitis and gastric disturbance are not uncommon co-morbidities with frozen shoulder presentations and I believe they are often interrelated. The urinary symptoms present in this case are very likely a separate problem – most likely of benign prostate enlargement, but a malignant tumour is also a possibility, especially in the view of the patient's age, in which case one should think of shoulder metastasis.

**Are there any other history points you would like?**

Presumably, all the Red Flags have been screened for, such as weight loss, general wellness, previous history of tumours/cancers, if not they should be excluded first – prostate disease being the most obvious.

In addition a couple of clarifying questions would be useful: Any history of cancer in the family? How has the pancreas been behaving in the last few months? Has he been to see a doctor about urination difficulties – have any tests been undertaken? Also useful is establishing any recreational sport, exercises, and other activities.

**Are there any further aspects of the examination you would perform? If so why would you perform them?**

Palpation neck and shoulder girdle soft tissues (cervical fascia, anterior and lateral neck muscles, pectoralis, rotator cuff, trapezius etc) would be undertaken to identify any lesions in the soft tissues and muscles that might be contributing to movement restrictions, or any areas of altered function.

- Cervical range of motion, thoracic and lumbar spine range of motion, pelvis levels. Usual screening tests to

assess the wider musculoskeletal system, especially the neck, where secondary or compensatory lesions are often found.

- Shoulder girdle tests – sternoclavicular joint, acromioclavicular joint, 1st and 2nd ribs (costovertebral joints), observe scapulothoracic movements to identify possible dysfunction.
- Left shoulder external rotation with the arm in neutral position (elbow by the side). Simply because I am more familiar with this way of testing external rotation.
- Both glenohumeral distraction/joint play test, palpation of deep shoulder ligaments undertaken to confirm glenohumeral articular dysfunction.

#### **Would you undertake any further investigations (eg imaging, special tests, lab work etc) and why?**

Providing nothing suspicious was found in history or during examination I wouldn't undertake any further investigations at this stage.

#### **What is your differential diagnosis?**

My first choice would be frozen shoulder/adhesive capsulitis. The differential diagnosis would include shoulder arthritis (gout, degenerative osteoarthritis etc). Other considerations include osteopathic conditions, such as pectoralis major muscle sprain/spasm (although I would usually expect that sleeping at night should be acceptable in the case of a muscle sprain), acromioclavicular joint dysfunction / capsulitis / subacromial bursa (although limitation of external rotation is not a typical finding in this group, however, in this case it was performed in full abduction, which compresses the acromioclavicular / subacromial space and external rotation may become abnormal)

#### **What would be your initial management or treatment of this patient?**

Patient education about the condition, establishing realistic expectations and motivation for everyday management, i.e. to perform mobilising exercises regularly, avoid uncontrolled movements of the shoulder and strenuous activities (including digging, lifting), organise appropriate medication (analgesic rather than NSAID initially).

- Osteopathic treatment of neck and shoulder girdle, particularly of the neck, and thoracic spine, pectoral girdle, rotator cuff, scapular function, glenohumeral articulation, acromioclavicular joint and other regions if dysfunctional
- Revision of dietary habits to ease pancreatic load
- Shoulder mobilising exercises in different planes of movement

- Referral for a medical review in case of warning signs/ history suggesting general condition (prostate, pancreas)
- Panadol before going to bed, if patient is not getting enough rest at night due to pain and/or another tablet during a day, if the pain level compromises daily activities and work.

#### **How effective do you expect treatment to be?**

Very slow improvements with treatment are typical in patients with this type of complaint, a typical response to treatment might be a 5-10% improvement in range of painful movement restriction per week with periods of regression and minimal change. Typically with severe limitation of movements a patient feels more uncomfortable, because even normal activities are accompanied with pain, but later the patient may feel less pain on normal activities, but still painful limitations on certain movements. Full recovery may take anything from 6 to 12 months up to 2 years.

#### **Would you involve other health professionals in the treatment?**

Not at this stage (provided nothing suspicious was found in history or during examination).

#### **What would be your course of action if the patient had not improved in (i) two weeks, (ii) two months?**

I usually expect a patient to respond to treatment after 3 – 4 sessions. I would initially see this patient weekly, but if after 3 – 4 weeks without improvement I would organise a plain film radiograph of the neck and left shoulder, or sooner if the patient's symptoms were getting worse.

If nothing abnormal was found and the patient was happy to continue I would try another 2 or 3 sessions and if unsuccessful I would send him to see his GP for a second opinion / general blood tests / second generation (COX-2) NSAIDs / intraarticular steroid injection.

#### **Any other comments you wish to make about this case?**

Usually with cases of frozen shoulder I try to avoid NSAIDs because their use does not seem to improve mechanical lesions, although NSAIDs may reduce the inflammatory reaction in the capsule and soft tissues. Night pain is an indicator for me that there is such inflammatory reaction taking place. If a patient continues to be uncomfortable at night after the first 1 – 2 treatments, I would administer a short course of over the counter NSAID (provided no other contraindications were present), usually ibuprofen is relatively well tolerated.

In this case the patient is reporting gastric intolerance when gastric acidity increases and his uncontrolled intake of Voltaren is, probably, not helping the gastric intolerance. Gastric disturbance could be a contributing factor to the shoulder problem. So my tactic initially would be to ask the patient to stop taking NSAIDs, but start taking pain

relief medication (panadol, if no effect then moving to panadeine).

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## COMMENTARY RESPONSE: Clive Lathey

### Are there any other history points you would like?

Has their been any previous history of cervical spine pain? Has their been any past history of trauma to the neck or shoulder? More information about the duration of the initial acute shoulder pain would be helpful, and I would also like to establish if the patient was able to continue digging in the garden when pain started? (this may provide possible clues about the nature of any soft tissue injury – acute tear/strain versus slower inflammatory onset). Duration of chronic pancreatitis and gastric pain? – further information about the current and previous management and investigations is needed.

### Are there any further aspects of the examination you would perform?

Active and passive mobility tests of the cervical spine. Palpation of soft tissues of the cervical and thoracic spine. Perform more detailed special tests of the shoulder, including tests to (carefully) stretch the capsule, and also to compress structures in subacromial space. Impingement tests as well as contractile and impingement tests of the infraspinatus and supraspinatus tendons.<sup>1</sup>

### If so why would you perform them?

Need to perform a neurodynamic evaluation of the upper limb (ie brachial plexus tension tests with bias toward the median and radial nerves)<sup>2</sup> to assist in differentiating between neurogenic pain or referred pain from the neck. Special tests (impingement and quadrant etc) may be useful to assist in identifying which soft tissue structure(s) may be producing pain in the shoulder. I would also undertake further active and passive mobility tests for shoulder.

### What is your differential diagnosis?

The differential diagnosis is: Capsulitis (adhesive capsulitis), Rotator cuff tendonitis (impingement of infraspinatus or supraspinatus or subscapularis tendons) and/or subacromial bursitis. Cervical spondylosis with radial or median nerve irritation (left sided). Possible referred pain from chronic pancreatitis, gastric ulcer or duodenal ulcer – all can potentially refer pain into shoulder region.

The onset of the presenting symptoms and the results of physical assessment as provided, together with the presence of positional pain and reduction of motion suggests the condition is more likely to be mechanical in nature. It is quite possible that the shoulder and cervical spine symptoms

coexist ie the presence of both a mechanical shoulder condition and cervical spine spondylosis with nerve root irritation.

### What would be your initial management of this patient?

Since the patient was referred from his general practitioner (GP), I would write a letter to the patients GP outlining the history and the plan for management. I would also commence treating the patient using physical and electrotherapy with two sessions per week for 3 – 4 weeks. Depending on the findings of further assessment I would also treat the neck and shoulder. I would also encourage the patient to start ice bathing of the shoulder, to seek appropriate medication from his GP (Antiinflammatory/Analgesics). Depending on the findings (given this is a 'paper case') I may also prescribe gentle mobility exercises for the shoulder.

### How effective do you expect to be?

The three month duration indicates that the condition has become chronic and will therefore probably respond fairly slowly to treatment. It will be necessary to accompany physical treatment with appropriate medication and self help routines and gentle mobility exercises. Response to treatment can be difficult to predict in these presentations, although my experience suggests that the outcome appears to be better if the frequency of treatment is fairly regular (ie not too long between treatment sessions)

### Would you involve other health professional in the treatment?

As already mentioned, the patients GP should be involved in prescribing antiinflammatory medication and managing the referral process if necessary. Orthopaedic consultation (preferably a shoulder specialist) may be necessary for an assessment and review, and possibility of further imaging (MRI). A Rheumatologist consultation may be necessary to investigate the possibility of Polymyalgia. Gastroenterologist consultation for gastric, duodenal and pancreas tests. Urologist – Investigate difficulty urination-prostatic enlargement or inflammation. Referral to other healthcare professionals is obviously dependent on the results of initial examination, particularly if no mechanical cause of symptoms identified etc.

### Would you undertake any further investigations (eg imaging, special tests, lab work etc) and why?

If there was no response physical and electrotherapy, I would probably refer for and orthopaedic assessment and opinion preferably including an MRI scan of the shoulder. Plain film radiography of the cervical spine would be useful in assessing the extent of possible cervical spondylosis. I might also consider organising an erythrocyte sedimentation rate (ESR) test as a means of screening for inflammation with a view to considering the diagnosis of Polymyalgia Rheumatica. If there was no abnormality found on any of these previous investigations, then a possible referral to

gastroenterologist for a review of the patients' chronic pancreatitis status might be considered. I expect serum and urine amylase tests would be undertaken as part of this review.

### **What would be your course of action if the patient had not improved in (i) two weeks, (ii) two months?**

A lack of improvement after two weeks would lead to contacting the GP to discuss possible medication to accompany further treatment. It is likely that there will not be huge improvements in two weeks if the condition has already been present for a three month duration. A lack of improvement after two months: If no response to treatment then contacting the GP to consult in deciding an appropriate management plan, investigate further diagnostic tests or specialist consultation for an opinion.

### **Any other comments you wish to make about this case?**

The clinical picture suggests that the patient probably has a mechanical shoulder condition – possibly early stage capsulitis with progressive adhesion formation and underlying cervical spondylosis with median or radial nerve root irritation (Could be wrong on both counts!) Certainly reduction of glenohumeral movement in more than one plane supports this view. I would write to patients GP to highlight problem of gastric intolerance. The patient should not be drinking alcohol at all with a history of chronic pancreatitis. Also need to confirm that the GP knows about the patient's urinary problems. (In case patient has not made GP aware). It would also be appropriate to provide advice and education on diet, exercise and lifestyle.

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## **COMMENTARY RESPONSE: Simeon Niel-Asher**

### **General comments on the case**

Thank you for asking me to participate in this case discussion. I have a special interest in treating the complex painful shoulder; in particular frozen shoulder syndrome (FSS). Over the past five years I have developed a novel osteopathic technique for addressing both the pain and stiffness associated with this problem.

FSS affects 2 – 5% of the general population<sup>1</sup> and 10 – 20% of diabetics. FSS affects females more than males (60:40). The condition lasts an average of 30 months and then seems to spontaneously remit; although recent evidence is being reported of a much more convoluted timeframe. Some studies have shown the restricted range of motion to last for 11 years.<sup>2</sup> In my own practice I have treated cases of up to 18 years duration. Once FSS has run its course it very rarely re-occurs, but does, on rare occasions occur

again. In 10 – 15% of people who have had unilateral FSS a second episode occurs in alternate shoulder. FSS can be extremely distressing, painful and debilitating, and patients are usually highly motivated to seek treatment.

FSS can be primary (spontaneous) or secondary (following trauma or surgery). The natural course of FSS is classically described as being divided into three recognisable phases which may overlap: 'freezing' (0 – 8 months), 'frozen' (6 – 20 months) and 'thawing' (18 months plus). For reasons that are yet to be established FSS mainly affects the non dominant limb.

Current treatment often includes NSAID's, local corticosteroid injections, oral steroids, ongoing physical therapy (including osteopathic treatment, physiotherapy and chiropractic), suprascapular nerve blocks, manipulation under anaesthesia (which risks significant injury),<sup>3</sup> and/or surgery (usually arthroscopic). The "corticosteroid injections can cause "serious unwanted effects" (such as facial flushing, irregular menstrual bleeding) or a suprascapular nerve block may help reduce pain or increase mobility for a short time, but there is no evidence that any of these treatments reduce the overall duration of the condition."<sup>3</sup>

### *Niel-Asher Approach*

The Niel-Asher Technique™ involves a specific sequence of soft tissue manipulations to the shoulder joint and periscapular soft tissues.<sup>4</sup> This sequence varies slightly in accordance with the presenting symptom picture; but is essentially the same for each patient.

In a recent pilot randomised placebo controlled clinical study conducted in association with the Rheumatology Research Unit, Addenbrookes hospital, Cambridge, the Niel-Asher Technique™ was compared to standard physiotherapy (manual therapy and therapeutic exercise) and placebo consisting of breathing exercises, effleurage massage and pain free range of motion exercises.<sup>5</sup> Six treatment sessions were performed over nine weeks.

The primary outcomes measures were the Shoulder Pain and Disability Index (SPADI) and ROM measures of shoulder abduction. The SPADI is recorded on a 0 – 100 scales where a score of zero is 'normal'.

The mean increase in shoulder abduction for those patients who underwent the Niel-Asher Technique™ was 52.6° (SD 14.6°), while the physiotherapy group improved by 24.0° (SD 35.8°) and the placebo group by 0.8° (SD 39.5°). There were significant differences between these groups for shoulder abduction improvement (Kruskal-Wallis test  $P=0.005$ ). Pain and Disability also improved for the Niel-Asher group, with the mean SPADI score improving by 38.7° (SD 22.5°) ( $P=0.07$ ). The physiotherapy group improved by 19.9° (SD 24.6°) ( $P<0.05$ ), and the placebo group improved by 22.8° (SD 18.2°) ( $P<0.05$ ). The results of this pilot study are encouraging and a larger study with increased statistical power is justified.

### Are there any other history points you would like?

When taking the case history of a patient with suspected capsulitis there are certain specific questions which I ask in the case history. In order to diagnose the type of capsulitis pattern it is necessary to establish a complete picture of all symptoms first. For this reason, I usually ask the case history in reverse; asking about the current symptom picture followed by the symptom history. This is reassuring for the patient as they are often experiencing a high level of pain (especially in the earlier stages of the condition).

Specific questions that are useful in completing the history include:

- Presence of pain / aching, or stiffness, or both? Usually it is 'both' in phase I and early phase II and less painful in phase III
- Presence of any sharp catching pain on innocuous activity? This would tend to indicate a spasm of the biceps tendon due to irritation of the swollen biceps tendon sheath within the bicipital groove.
- Presence of pain down the outside of the upper extremity? This is a classic symptom and can not be explained by a specific muscular pattern; it is probably myofascial.
- Presence of night pain? Night pain is a classic symptom of capsulitis (but can also be present in other shoulder conditions e.g. calcific tendonitis). The intensity of night pain is an important indicator to the severity of inflammation in the capsule. I ask this question on all visits; I find it clinically useful to explore what type of night pain and whether/how it changes after each treatment.
- Can you lie on the affected side? How long for? Night pain signals inflammation, as the inflammation decreases the patient is able to lie for longer on their side. Night pain is less common in late phase II to phase III; if patients can side lie more than 30 minutes it is a good prognostic sign for recovery.
- Decreased range of motion? This includes both active and passive.
- Do you find it difficult to reach for top shelves? Reach for your back pocket? Brush your hair? Do up your bra? Put on a jacket? Wash yourself? These are all classic symptoms for FSS. Patients also find personal hygiene problematic and distressing for three main reasons:
  - a) Patient is unable to apply deodorant because of arm stiffness and loss of axial fold
  - b) Patient is unable to adequately attend to personal hygiene after defecation
  - c) Patient may notice increased 'glandular smell' from the axilla due to attenuated autonomic supply to glands (reflex sympathetic dystrophy)
- Do the hands feel cold or go whitish blue? Reflex sympathetic dystrophy (RSD) can occur in moderate to severe capsulitis and can be very distressing and painful – the pain is of a gnawing quality. It can also cause pain ~~in the~~ *in the forearm, thumb and first finger*

### Other information required from the case history

- Do you remember a specific incident or trauma or did your problem come-on for no apparent reason? Is it secondary (to a trauma) or primary? It is my experience that the treatment of secondary capsulitis can be more difficult and protracted; most cases are primary.
- What previous treatments (if any) have you tried and did they help. I like to list these treatments for my record and for medico-legal reasons.
- Are you diabetic or is there any diabetes in your family? Have you noticed any urinary frequency or excessive thirst (polydipsia)? FSS is ten times more common in diabetics.
- Is there any family history of FSS. Some authorities believe there may be a genetic component.
- I would ask more questions that review of the gastrointestinal system in this case because it is left shoulder pain and there is a history of chronic pancreatitis and gastric intolerance to more than three glasses of wine. This is to rule out any referred visceral symptoms causing the left shoulder pain.

### Further examination

Range of motion (ROM) as measured by simple goniometry gives a great deal of useful information about FSS. In this case both active and passive movement is decreased in the symptomatic arm (the ROM is also decreased on the non-affected side – why?).

The main restriction is in external rotation. Along with the sharp catching pain in the biceps tendon area this would lead me towards a diagnosis of an *anterior* capsulitis. Abduction is also reduced, this may be due to a superiorly displaced humeral head (common in FSS) or due to a sub-acromial/sub-deltoid impingement. This would lead me in the direction of a *lateral* capsulitis. So far I am thinking a *Phase II Antero-Lateral capsulitis*.

### Further investigations

Plain film radiography and or MRI are rarely useful diagnostically, but may be used to rule-out calcification (soft or hard), bony spur growth (under the acromioclavicular joint) or metastasis. A blood test may be useful if one was suspecting a gastrointestinal related monostotic arthritis or HLA B27 related syndromes. Ultrasound (musculoskeletal) is getting better all the time; it is especially useful for ruling out any tears in the supraspinatus muscle.

**What is your differential diagnosis?**

1. Left sided phase I/II Antero-Lateral adhesive capsulitis.
2. Phrenic nerve irritation to left shoulder
3. Gastric ulcer
4. Cervical Spondylosis
5. Degenerative arthritis of the glenohumeral joint or acromioclavicular joint
6. Secondary metastasis in shoulder from a chest or prostate primary tumour (always a rare chance)

**What would be your initial management or treatment of this patient?**

This seems to be a classic FSS. I would use my own technique to treat this patient. The technique involves a specific sequence of soft tissue manipulations, joint articulations (within the pain-free range) and inhibition through various trigger points.<sup>4</sup> Regrettably due to the nature of this short paper I can not present the whole technique here. The technique has to be performed in a specific sequence in this way it is a bit like a recipe. It is a neuromuscular technique, that is hypothesised to stimulate a specific sensory profile in the cortex which literally 'defrosts' the shoulder. In my hypothesis the area of the cortex which represents the shoulder has attenuated sensory feedback from shoulder joints and soft tissue. The technique is probably best described as being 'neuromuscular'; stimulating a specific sequence of receptors (nociception, golgi tendon, deep pain and proprioception). It appears to be the sequence which is key to the technique. The effects can be rapid and dramatic – the longer the duration of the condition, the fewer the required number of treatment sessions. Typically, I would expect to treat a case like this in 6-8 sessions.

**How effective do you expect treatment to be?**

From unpublished data from an internal audit of the first 100 patients treated by myself, the technique is 100% effective in 86.4% of cases. The remaining 13.6% represented drop-outs due to: pain of treatment, distance to travel to the clinic or financial considerations. Also, very rarely, patients fail to complete treatment because they are too acute for treatment (early phase I) or the treatment simply does not work.

**Would you involve other health professionals in the treatment?**

Because this is a phase I capsulitis, it is more difficult to treat. In most patients, once the initial inflammatory cascade has begun, there is very little that can be done to stop it. The treatment I am proposing seems to accelerate the condition through its phases rather than stop-it in its tracks.

In about 5 – 10% of phase I cases, I recommend a local steroid injection into the front and back of the joint. Patients

shouldn't always need this, but practically, they are often in so much pain due to inflammation that it is more expedient to follow this route.

**What would be your course of action if the patient had not improved in (i) two weeks, (ii) two months?**

In the case where there is no change after five sessions, and/or night pain is still severe I typically refer on to an orthopaedic physician for further investigation and/or steroid injection. If no abnormality was reported on investigations etc, I would continue with my treatment program. If the pain (especially night pain) was still severe, I might refer the patient for either a course of Amytryptelene or a suprascapular nerve block (Guinethedine) this has happened only three times in over 450 patients. According to an independent review of frozen shoulder management: "Neither manipulation under anaesthesia (which risks significant injury) nor surgery has any clear place in management".<sup>3</sup>

**Any other comments you wish to make about this case?**

- Muscle type (red/white fibre) and morphology of a patient will affect the depth of my treatment. This patient is described as 'stocky' so I would expect to have to work more vigorously. If the patient is aesthenic (long and thin) I would tend to 'linger for longer' on the trigger points. Other variations in pressure and depth are needed as appropriate to age and morphology.
- Patients have different pain levels/thresholds, this has to be taken into account therefore – good communication is required during the treatment session.
- Patients sometimes/often report benefit from using ice/heat at night before he goes to sleep.
- On no account should the patient stop using, or splint the arm, if anything he should be encouraged to unertake daily ROM exercises.
- I would suggest gentle ROM exercises which can be incorporated into everyday activities. For example - putting the arm up on a couch, swinging the arm while walking, leaning on a wall while standing.

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