

Introduction

This client is a 43-year old maintenance engineer for a busy retail chain and until August last year he was very fit and active. He has suffered a bad rotator cuff injury at work and is still signed off until mid May. I have chosen this as a case study as I wish to see how I can use advanced remedial massage to help rehabilitate this man's shoulder and hopefully get him back to work as quickly as possible.

Consultation and History

MH came to see me on 10th March for the first time. In August 2010 MH was playing squash twice a week and had a very physical job as a maintenance engineer involving some heavy lifting. At this time he had to use a heavy sledgehammer at work almost continuously over two days and it seems this is what triggered a severe shoulder injury. MH He seemed to be a very cheerful person, however he was in considerable pain for much of the day and was having a lot of trouble sleeping.

MH was given painkillers by the GP then a single session of acupuncture. This did not help so he was given a steroid injection in November 2010. He also consulted an osteopath in 2010 and had X-rays and an MRI done in December 2010 which showed excessive wear and tear of the rotator cuff. The consultant advised decompressive keyhole surgery on the sub-acromial space of the glenohumeral joint and this was carried out on 28th January this year. MH was given an injection of Durolane in hospital and some physiotherapy after the first week at home.

The client reported that he was taking about 4 Tramadol (50mg) daily – 2 of these at night to get to sleep. The pain was a searing, excruciating pain with a "nervy" quality most of the time and radiating into the left arm. Rest helped but the pain worsened as the day went on.

MH completed a consultation form and we agreed that I would try to reduce the pain and get more range of motion in the left shoulder. However I warned that the surgery was still relatively fresh and I would only do gentler work initially to see how he coped. His consultant was aware that he was having massage treatment and the client consented to a few sessions in quick succession as I felt this would be most beneficial.

General Assessment

The client had a good upright posture and he kept the left shoulder close to his body when walking. His left shoulder was elevated in what looked like a guarding manner, however he was left-handed too. The left humerus was anterior and the left waist crease was lower than at the right. Compared to the right foot, the left one was obviously dominant and it rotated outwards. There were no obvious areas of redness around the shoulder or scarring.

Specific Assessment

I carried out active, passive and resisted range of motion tests. Shoulder flexion caused tightness

over the deltoid muscle and extension was restricted and painful with pins and needles radiating down the arm. Active abduction allowed about 130 deg (right) and 45 deg (left) and pain at 3/5. Adduction was also painful, medial rotation caused pain over anterior deltoid, while clasped hands behind the head position was also 3/5. Elevation of the shoulder girdle was ok but painful on lowering. Protraction was stiff and retraction easier. Passive shoulder flexion was 2/5, adduction 3/5, abduction 2/5, medial rotation ok but lateral rotation was worst 5/5 with a “jagged” and stiff end feel. Resisted movements were too sore to do. Active, passive and resisted range of motion was carried out for the neck and for the elbows. These were all ok. The thoracic spine and the pelvis were also checked out. Left = right at PSIS on standing and seated forward flexion. I did the empty can test and the drop arm test and these were ok. Apley’s scratch test, painful arc and the apprehension test were positive.

Treatment Plan

Since there was substantial restriction in nearly all the movements of the left shoulder, I initially wanted to concentrate on releasing muscle tension and as many trigger points as possible so that pain patterns could be more easily broken down. I also wanted to see how the nerve pain was after the first treatment to see if this was perhaps emanating from the cervical area or was mostly in connection with the rotator cuff itself. Due to the amount of pain experienced on passive movements, I would only do gentle mobilisations at the first treatment and move on to capsular work on the joint at subsequent treatments.

Treatment 1

I carried out MFR to subclavius and the pectoral muscles using contract/relax MET to reduce hypertonicity in pectoralis major then continued on to the left arm with MFR increasing depth of stroke gradually. I released trigger points found in the left arm’s biceps and triceps, as well as in the anterior, middle and posterior deltoid. I used MET and MFR alternately for supraspinatus and MFR on infraspinatus where I also had to release several trigger points. Similar work was carried out on teres major and minor, rhomboids and trapezius before moving on to try to gain some lengthening and relaxation in the sternocleidomastoid and scalenes.

Since the client felt active abduction was the most painful action I worked on the left arm’s deltoid muscle doing C/R MET followed by some eccentric contractions. Then as the client’s perception of reduced pain levels became reinforced, I performed some active, passive and very gentle resisted movements of the left shoulder (flexion, extension, abduction, adduction).

Finally, I carried out active mobilisations for supraspinatus and trapezius (Sphinx position with head moving from side to side and up and down). This was followed by some resisted shoulder girdle elevation/depression, protraction/retraction movements.

Reassessment

On carrying out all the active movements on the shoulders, the left shoulder was able to abduct to 90 deg pain free and the range of medial rotation had improved. Active lateral rotation still produced pain at 3/5 and this is often one of the last shoulder actions to improve. Passive abduction and adduction were still at pain level 2/5 with flexion at 1/5. All active and resisted shoulder girdle actions were ok.

The client felt range of motion of the left shoulder had improved and pain was less too. If pain levels permit, I would like to work more on the shoulder capsule to address the “jagged and stiff” end feel. I have the feeling this may be down to some instability in the joint and possibly soft tissue misalignment or fascicular torsion. The shoulder joint muscles definitely need strengthening as treatment proceeds especially following surgery.

Advises

I warned the client that for the first 24 hours there may be some pain and after effects such as headache, tiredness, urinary frequency or just feeling under par, but that this would pass as the body’s systems re-balanced. I advised him to drink plenty of water to flush out any toxins from the body.

I asked him to carry out exercises for the shoulder: e.g. fingers climbing up wall and increasing height as ROM improves, using a pillow under axilla to traction shoulder joint, and with hand over left shoulder joint, to sense degree of fine movement, make small movements upwards, downwards, forwards and backwards (for proprioception/fine motor control).

Second Appointment – 17.03.2011

Commentary

The client reported that his left shoulder is moving much more easily and there is not so much nerve type pain since the first treatment. He has been doing the exercises I gave him. He is taking 2 Tramadol at night only to help him sleep instead of the 4 per day previously. He has lacked energy and been very sleepy during the past two days.

Examination

Active range of motion showed left shoulder flexion produced pain in the posterior deltoid and infraspinatus muscles. Abduction of the left shoulder equalled the right and was slightly more than 90 deg. (After 120 deg. lateral rotation causes humerus to clear the acromion). Interestingly, active supination caused a “nerve like” pain 2/5 around the joint line. Medial rotation also caused pain over the shoulder joint and there was tightness in posterior deltoid when the left elbow was raised upwards in front of the face. Lateral and extension combined produced 2/5 pain at the anterior deltoid. Scapulohumeral rhythm had a “juddering” quality on the downward return action.

Passive ROM showed left shoulder abduction to be painful 2/5. Resisted ROM showed medial rotation 4/5, lateral rotation 4/5, abduction, adduction and flexion all 2/5. Neck and arms range of motion were assessed and found to be in order.

Treatment 2

I released the fascia on the left arm and stripped the pectoral and subclavius muscles and used MET to ensure pecs were at proper rested length. I then frictioned the anterior, middle and posterior deltoid, working across the tendons and joint line, before releasing several trigger points. I stripped infraspinatus, teres minor, latissimus dorsi, levator scapula, trapezius and rhomboids. With the client giving assistance with stretches, I mobilised pectoralis major and minor. Happy that the shoulder was moving more freely, I continued treatment of the deltoid doing MET on anterior deltoid, resisted flexion, eccentric contraction then passive movements. I did the same for middle and posterior deltoid. Next I concentrated on supraspinatus by spreading out the muscle fibres (pin and hold while stripping/strumming) and worked also on levator scapula incorporating the Sphinx

technique. Finally I used the pin and hold technique for serratus anterior with client actively engaging and finished off with the “velvet glove” technique along upper trapezius, scalenes, supraspinatus.

Reassessment

Left shoulder active range of motion improved with flexion up to 180 deg. and abduction to 90 deg. both pain free. Supination easier and pain instead of 2/5, now 0.5/5. Lateral rotation 0/5 although still clicking noises and combined lateral rotation and extension better. There was still a restriction in scapulohumeral rhythm but the action was smoother. Resisted abduction and adduction was down from 4/5 to 2/5 and resisted flexion and extension were ok. On observing the client as he left the clinic, I noted that he was swinging his **left** arm as he walked and had his right hand in his pocket.

Advises

I reminded the client about possible healing crisis and the need to drink sufficient water. I showed him how to circumduct the shoulder passively using gravity (pendulum) and asked him to start doing isometric exercises e.g. pressing against a wall with the shoulder.

Third Appointment – 22.03.2011

Commentary

Client reports making steady progress and continues with exercises. He experiences only occasional nerve pain and some joint stiffness which is worse on waking but after a hot shower and exercises this improves as does the mobility. He only takes 1 Tramadol at bedtime.

Examination

There are no visible signs of MH guarding the left shoulder now. Active ROM of left shoulder showed flexion 160 deg and almost equal to right shoulder. Extension ok, abduction (now without drawing the humerus forward) ca. 150 deg. and adduction was normal. Painful arc positive at 130 deg. Medial rotation almost same as right shoulder however movement is shaky and lateral rotation 50 deg. Shoulder girdle movements all ok. Passive range of motion showed flexion and extension were pain free but slightly stiff with creptius. Abduction and adduction painful at 2/5, with medial rotation 2/5 and lateral rotation 3/5. Passive shoulder girdle movements were ok and the scapulohumeral rhythm was smoother and symmetrical. Resisted range of motion showed abduction 2/5, medial rotation 2/5, lateral rotation 3/5 with girdle movements ok. In addition active lateral rotation combined with abduction 1/5.

The apprehension test was positive but better than previously. Passive circumduction produced some instability and areas of resistance. The Speed’s test for biceps was positive as was the relocation test of the left humeral head and the left humeral head was lying anteriorly. Also the left first rib was elevated. Today’s examination and testing was done while checking off a list I prepared earlier. This was to ensure that I worked systematically through everything I was finding as shoulder problems are often very complex and even if one aspect improves during one treatment, it does not mean that it will not require further attention at a later time. This is why I find mobilisations are so important and why it is absolutely crucial that the patient carries out the home exercises religiously.

Treatment 3

After warming up all the fascia of the left hand, forearm and upper arm I stripped and frictioned the

biceps, triceps, supinator, pronator teres and released trigger points. I then did MFR to the pecs and along subscapularis, also using MET and C/R to pectoralis minor and major muscles (there was slight pain over posterior deltoid. Frictioning to the biceps (this was quite painful), deltoid, the G/H joint line, triceps, coracobrachialis. I released pectoralis minor, teres minor. MFR to erector spinae, trapezius, rhomboids, levator scapula and latissimus dorsi and finally strummed along supraspinatus.

I carried out deep friction to infraspinatus before performing mobilisations to the left shoulder complex ("steering wheel" and passive lift to flexed elbow while frictioning medial border of scapula). Then I did some passive and active shoulder flexion, extension, abduction and adduction with MET for abduction and adduction, then eccentric contractions in abduction and adduction. I then carried out mobilisations for all shoulder actions. I tried to optimise the location of the humerus by pinning down the glenohumeral joint and encouraging the head of the humerus into the socket. I treated the left anterior humeral head and the left elevated first rib. I then applied traction the shoulder girdle before performing passive circumduction of the left shoulder.

Reassessment

The trigger points were released in the left arm biceps, triceps and deltoid. The tightness in pectoralis minor and serratus anterior was eased off. Trigger points were released in infraspinatus, teres minor. The rhomboids, levator scapula, trapezius and supraspinatus were much "looser".

The left shoulder is moving much more easily and pain free on active, passive and resisted shoulder girdle movements. The first rib is in its correct position and moving freely while the humeral head is also better positioned now. There is further improvement in active and resisted flexion, extension, abduction and adduction. Active medial and lateral rotation is good and pain free while passive medial and lateral rotation has a residual 1/5 discomfort. The glenohumeral joint has more stability and less creptius. Speed's test is ok and circumduction is pain free. The client commented on the improvement in the shoulder joint's quality of movement – being smoother and more positive. I noted that the neck would benefit from more work.

Advises

I advised the client to drink plenty of water and remember there could be healing crisis symptoms in the next 24 hours. I advised that he should incorporate the use of light weights to further strengthen the shoulder and upper body muscles (e.g. swinging and circumduction of shoulder with light weights). Also, he could do stretches for upper and lower pectoral muscle fibres using Therabands. "Window wiping" movements in all directions (static and isometric) as well as doing the "towel held across back and moving up and down would all help improve the shoulder mobility. The weights work should be done while pain free and strengthening of accessory muscles as in pushing body up out of a chair can also be incorporated.

Conclusion

On arrival at my clinic 7 weeks post shoulder surgery, this gentleman was in severe pain and sleep deprived. He had badly damaged his shoulder at work 8 months previously and eventually opted for surgery. This was deemed successful and after brief physiotherapy treatment, the client was left with restricted range of motion and chronic pain with possible nerve involvement.

The advanced massage therapy treatment plan was aimed firstly at reducing muscular and nerve pain, secondly increasing range of motion and improvement of motion quality and thirdly assisting in restoring strength to the left upper limb. Beyond these aims I hoped that the patient's sleep and general well-being would be improved.

After the first treatment the level of pain had reduced and the range of motion had improved, although external rotation of the shoulder was still rather painful. On returning to the clinic a week later, the client reported that there was much less "nerve" pain and mobility was better. The dosage of Tramadol had also been halved.

After the second treatment, when I spent some time addressing the scapulohumeral rhythm and rotational movement of the humerus and its clearance of the acromion, the movement of the shoulder had improved in quality and also the range of motion. Again, the pain levels decreased.

At the third visit the client reported only having occasional nerve pain and some stiffness in the left shoulder and after treatment was mostly pain free apart from 1/5 level on passive medial and lateral rotation. Range of motion was almost back to normal now, and the client looked less strained in his demeanour and was sleeping well. He had also reduced the Tramadol again by half and was hoping to get a phased return to work approved by the GP at his next visit.

I was happy that the series of three treatments had progressed the client's rehabilitation of his left shoulder quite significantly. The three main aims of the treatment plan I believe had been largely fulfilled. In future sessions I hoped to work more on the neck and check that the first and second ribs are still correctly aligned.

What I learned

One main thing that was emphasised at the first visit was that it is essential to work within the patient's pain threshold. This may be affected by lack of restful sleep, chronic pain and of particular note, the presence of acute nerve pain. Although early on in the first session I decided to work very gently, I almost instinctively allowed the client to dictate what the treatment consisted of (in terms of ability to move the limb, resist pressure, duration of particular techniques etc.).

I developed this approach throughout the series of treatments, however, for the third treatment I had decided to work through a list of tests and be much more systematic in the general and specific examinations so that I might not miss any restrictions or sources of pain. This meant that more time was spent on the scapulohumeral rhythm aspects of the upper body and allowed further integration of the improved individual muscle actions and movements. It also meant that other aspects were addressed e.g. the positive Speed's test gave focus to the biceps; I tried to optimise the location of the humerus and treated the anterior humeral head as well as treating the elevated first rib.

Prior to having been on the advanced remedial course and being able to really apply advanced massage techniques, this would have been a case that a) I would have needed many more sessions to accomplish this level of improvement or b) would have perhaps referred to someone with more experience in view of the excruciating pain the client arrived with. Therefore, I would say that I have learned how to apply and incorporate many of the advanced techniques with more confidence while using the right amount of intuitiveness in "reading" the client.