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Patient Name _____

Follow-Up Appointment: _____

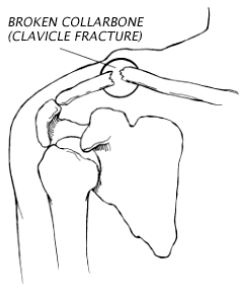
Information On Broken Collarbones (Clavicle Fractures)

Fractures of the clavicle are a very common injury to the upper limb that have classically been treated in the past with non-operative management. When a fractured clavicle is in good position (non-displaced) it may be treated non-operatively. This involves supporting the shoulder in a sling for approximately 4 weeks and only performing elbow, wrist and hand exercises, and then gradually commencing shoulder range of motion exercises as the pain begins to settle down.

In previous years, the following were considered indications for fixing a fracture semi-urgently:

- If the skin had been breached adjacent to the fracture (i.e. the fracture was open or "compound").
- If there was neurological or vascular compromise.
- If the skin was "threatened" because of pressure from the bone fragments.
- If there was an associated fracture of the shoulder blade as well (glenoid neck- aka floating shoulder)

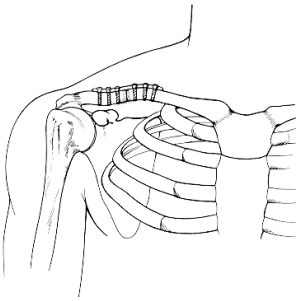
These are all uncommon situations, and traditionally most fractures were thus treated non-operatively. This method of treatment was based on good outcomes reported in a large series of patients series in the 1960's. These reports were however, at best Level 4 evidence. Mal-union of the clavicle, where the clavicle heals in a shortened positioned was considered to be of no consequence.



Over the last 10 years, reports were growing in the literature which questioned these long-held beliefs. The incidence of non-union seemed to be much more common than previously reported, and the significance of mal-union, particularly when the clavicle heals in a position of more than 2cm of shortening was also of concern.
It is believed that when a clavicle heals in a very shortened position, its effect of strutting the shoulder joint out from the body is compromised. This results in the major upper limb muscles now having to work over a shorter length. Studies on muscle contraction tension demonstrate that when a muscle is at a shorter resting length, its twitch tension decreases. In an active individual this can then lead to periscapular fatigue related pain and loss of power as these muscles have to work harder to maintain high upper limb function.

With these growing concerns, a group in Canada decided to perform a high quality study in an

attempt to answer these questions. They designed a Level 1 study* which demonstrated numerous advantages to treating these fractures with an operation to fix the clavicle with a plate and screws. The main advantages of an operation reported in this study were:



- A lower risk of the bone not healing (non-union) properly. (15% sling versus 1.6% plate and screws)
- A lower risk of the bone healing in a shortened position which resulted in fatigue related symptoms in around the shoulder (15% sling versus 0% plate and screws)
- Improve function of the arm with an operation (DASH scores)
- A better body image

The results of this study confirmed what most shoulder surgeons had suspected. Having quality data such as this study available makes it much easier to discuss the options of management with a patient. As always, the advantages of an operation must be weighed against the risks of the operation to allow an informed choice on behalf of the patient.

*Nonoperative Treatment Compared with Plate Fixation of Displaced Midshaft Clavicular Fractures: A Multicenter, Randomized Clinical Trial; Canadian Orthopaedic Trauma Society The Journal of Bone and Joint Surgery (American). 2007;89:1-10.

Clavicle Fracture Frequently Asked Questions

How much pain will I have?

Following a clavicle fracture, a patient will experience a variable amount of pain. This is dependent on what type of fracture you had and whether you had surgery. You will be given a prescription for pain medication following the injury or surgery to control your pain. You should take the pain medication regularly for the first 2 days and then only when required or before physiotherapy sessions. If you feel that you are having an extraordinary amount of pain following surgery despite taking pain medication, please contact my office (numbers listed below), or after hours the on-call orthopaedic registrar at Concord Hospital on 9767 5000.

How much swelling and bruising will there be?

Following a clavicle fracture there will be a moderate amount of swelling in the shoulder. This is due to the injury and if performed the surgery itself. It is not uncommon for the swelling and bruising to travel down the arm into the forearm and hand and also into the chest. It is extremely important to remove all jewellery, especially rings on fingers- these should be left at home. To help with the swelling you should perform simple hand, wrist and elbow exercises 3 times a day for 20 minutes each time. If you feel you have and extraordinary amount of swelling or bruising following surgery, please contact me as listed above.

How much drainage and bleeding will there be if I have surgery and when can I change the dressing?

A dressing will be applied over the wound. This dressing often becomes soaked with blood. It should be changed if is soaked through, but may otherwise be left in place. Most wounds should be dry by 7 days after surgery. If you wounds are still draining thick blood or thick yellow fluid then you should contact me or my orthopaedic registrar on the numbers listed.

When can I take a bath or shower?

It is important to keep the armpit clean and dry. When cleaning the armpit, don't left the arm with the muscles of the shoulder. Instead, lean forward by bending at the waist and allow the operated arm to gently dangle away from the body. You can then sponge and dry the armpit.

If you have had surgery, you should not soak the wound in a bath or swimming pool for 2 weeks. You may shower or sponge bath after surgery, but you must not scrub the wounds and must try to keep them dry by keeping it covered with the waterproof dressing. You may take the sling off when in the shower and support it with the other hand. If the wounds get wet, just pat them dry with a clean towel and apply a new dressing.

How often do I need to wear the sling?

You will wear the sling for 4 weeks. You should wear the sling all the time, including sleeping, unless you are showering or doing your exercises. After that time, if you are comfortable you may remove the sling.

Can I use my arm to eat or write?

You can gently use your operated arm to eat. It is easiest to slip your arm out of the sling and use your hand to feed yourself by bending at the elbow. Keep your elbow at your side and do not reach or do anything away from your body or lift anything heavy (no more than a coffee cup). Similarly you can write or type by keeping the elbow at your side.

How can I get comfortable to sleep?

Some patients have difficulty finding a comfortable position to sleep. When you sleep on your back it may help to place a small pillow behind the elbow or shoulder to help support the weight of the shoulder. If you sleep on your side (the operated side up) then it may help to place a pillow between your arms. You can also sleep in a reclining chair or propped up with pillows in bed. When you are getting in and out of a bed or chair, DO NOT use your operated arm to push down.

When should I return to work?

This depends on the type of work you do, how much pain you are in, and what type of surgery you have had. In general, most patients do not work until they are seen back in the rooms or clinic at 10 to 14 days after surgery. After this, most patients are able to tolerate either single-handed work (i.e. answering the phone) or light deskwork duties only.

Who should I contact if I think I have a problem?

You should contact Dr Trantalis through his office during work hours on the numbers listed below or his on-call orthopaedic registrar at Concord Hospital after hours on 9767 5000.

Patient Exercises After Clavicle Operation

Shoulder Range of Motion Program

- Use the power of the other arm to assist in gently but progressively moving your operated shoulder through a range of motion.
- All exercises to be done 4 times per day
- Perform each movement 10 times during each session.
- Hold each stretch for a count of 30 seconds
- Each time you perform your exercises try to increase the range of motion within the limits stated.
- Use pain as your guide. You should feel some discomfort with each stretch, however, it should not be severe pain.
- These exercises are important to prevent the development of a stiff / frozen shoulder.

Sling: [ ] 4 weeks then discard if comfortable

A. Hand & Wrist Exercises Begin these exercises now

Open and close your hand by making a fist then straightening out your fingers.
Bend your wrist back and forth as if knocking on a door (keep arm at side).

B. Elbow Exercises Begin these exercises now

Bend and straighten your elbow. You may perform this exercise initially with the help of the other arm but you can use the muscles of the operated arm.

With your elbow at our side and bent at a right angle, turn palm up and palm down.

C. External Rotation Exercises [ ] Begin this exercise now

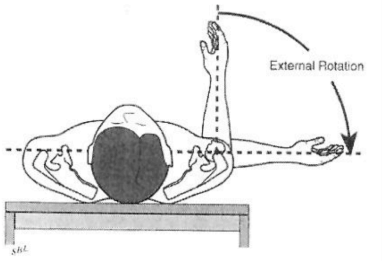
[ ] Begin in 4 weeks

With both elbows by your side and your arms bent at 90 degrees, hold a stick (e.g. cane, cut-off broom stick) between your hands. By using the good arm, gently push the operated arm outward from your body using the stick. **Keep your elbow against the side of your body.** Do not use the muscles of the operated arm to move the shoulder, use the good arm and push the operated arm using the stick. It is easiest to perform this exercise lying down. As you feel more comfortable you can perform this exercise standing. You should increase the amount of external rotation slowly according to the limits below:

Turn the arm outward from the body:

[ ] as much as possible

[ ] to 30 degrees

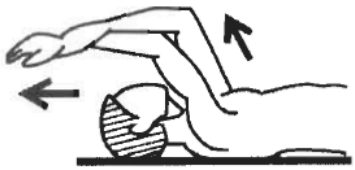


D. Forward Elevation Exercise:

[ ] Begin this exercise 2 weeks after surgery

[ ] Begin this exercise 4 weeks after surgery

While lying on your back, gently raise your arm up towards your head and over your shoulder. You should initially perform this exercise by using the good arm and helping to push the operated arm up. As you slowly feel more comfortable you can increase the range of motion over the shoulder and decrease the amount of help from your good arm. Once you can comfortably lift your arm completely above your shoulder you can perform this exercise standing. To transition from a lying to a standing position, it is easiest to do this progressively by using a reclining chair and start the exercises lying down and then slowly and progressively raising the seat back up (usually over days or weeks), as you feel comfortable.



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