



## CLAVICLE FRACTURES AND ORIF (OPEN REDUCTION INTERNAL FIXATION) OF THE CLAVICLE.

This information aims to help you understand your condition and gain maximum benefit from your treatment. It covers the most commonly asked questions. However, every individual is different, and you should ask as many questions as you like.

### SHOULDER ANATOMY

The acromion is the bone you can feel on the top of your outer shoulder. At the front of the shoulder the acromion articulates with the collar bone (clavicle) at the acromioclavicular (AC) joint

### CLAVICLE FRACTURES

The most important factors in treatment planning are the 'displacement' (how far the pieces are away from each other) and the amount of 'comminution' (how many pieces there are).

Clavicle fractures as a whole are very common.

Fractures in the middle (mid-shaft fractures) are by far the most common type.

Fractures closer to the ACJ (lateral third fractures) are much less common.

Most mid-shaft clavicle fractures are treated in a sling for about 4-6 weeks.

The sling does not hold the bone ends together but simply supports the weight of the arm and so limits pain

Complete healing can be slow and may take up to 3-6 months. Sometimes clavicles fracture do not heal. This is known as a "non-union". The risk of non-union for midshaft fractures can be estimated.

TABLE II "Ready Reckoner" for Estimating the Risk of Nonunion

Overall Displacement (mm)	Risk (%)			
	Noncomminuted Fracture in Nonsmoker	Comminuted Fracture in Nonsmoker	Noncomminuted Fracture in Smoker	Comminuted Fracture in Smoker
10	2	3	6	10
15	3	6	12	19
20	7	12	23	34
25	14	23	39	52
30	26	39	57	70
40	62	74	86	92

If a displaced fracture heals it will no longer be in the normal shape of a clavicle. This is called a 'malunion' This can lead to ongoing shoulder problems, especially in athletes and manual workers because the normal alignment of the shoulder girdle is altered leading to dysfunction with high demand activities.

Surgery may be recommended for mid-shaft fractures because of the risk of non-union or malunion

Lateral third clavicle fractures behave differently and have a higher risk of non-union. Surgery is therefore generally recommended if there is any displacement.

#### Advantages of ORIF clavicle

Earlier return to work and activities (80% vs 55% engaged in moderate activity after 2 weeks)

Less pain (as the fracture is stabilised)

Better chance of healing (as the bone ends are lined up together) - risk of non-union is 5% after ORIF.

Less chance of deformity (mal-union)

#### Disadvantages of ORIF clavicle

Risk of infection

Numb patch below scar which gets smaller over time but some may be permanent

Possible scar problems (which could be cosmetically unattractive)

Failure of fixation

Still a small risk of non-union

Irritation of soft tissue by the metalwork potentially requiring metalwork removal (one third of patients)

Extremely small risk of damage to the large blood vessels that are under the clavicle (but this can be potentially life-threatening)

## THE OPERATION

You will come to hospital on the day of surgery. You will have a general anaesthetic. A nerve block may also be used. The surgery usually takes 1 hr. An incision is made over the collar bone. The bone ends are put together and held with a plate and screws.

## AFTER SURGERY

You may go home either on the same day or the day after surgery

You will see a physiotherapist before you leave hospital.

Time in a sling depends on the fracture type.

For midshaft fractures most people use a sling for around 2 weeks as symptoms dictate.

For lateral fractures you must wear a sling for 6 weeks.

The speed of recovery is variable. It can be rapid or seem slow. Most improvement occurs in the first 6 months.

The end of recovery is around 12-24 months after surgery.

The fracture is usually healed by 3 months.

Further general information is available in the 'Information for patients undergoing surgery' leaflet.

## APPOINTMENTS AFTER SURGERY

10-14 days; 6 weeks, 3 months, 6 months, 12 months.

## REHABILITATION EXERCISES

Specific rehabilitation exercise sheets will be given to you in hospital and during your follow-up visits.

Only do the exercises shown to you in hospital and demonstrated to you in clinic. Do not remove the sling until you are told to do so. Your therapist will suggest whether you can do the exercises yourself at home or would be better with regular supervised physiotherapy sessions. You will need to get into the habit of doing the exercises several times a day for around 6 months.

The following applies to midshaft clavicle fractures (for lateral clavicle fractures – see ACJ injuries)

### MILESTONES

0-2 weeks

Sling full time

2-6 weeks

Wean out of sling.

Use the sling between exercises if needed for comfort

Use the arm for light activities with no load

6-12 weeks:

Normal day to day use of the arm is allowed.

Strengthening starts

3-6 months:

Progress strengthening

6 months +:

Full activity

### RETURN TO WORK/SPORTS

Work (light duties / office) 1-2 weeks

Swimming (breaststroke) 3-4 weeks

Driving 3-4 weeks

Work (manual) 3-6 months

Light lifting 3-4 months

Heavy lifting 4-6 months

Swimming (freestyle) 3-4 months

Golf 3-4 months

Contact sports 6 months

## DRIVING

You cannot drive while you are using a sling.

Once you have been told that you can remove the sling you can drive when you feel that you have full control of the vehicle. It is your responsibility to make this decision.

## LIKELY OUTCOMES

The main aim of surgery is to improve short time pain and function and achieve healing of the fracture to allow the shoulder to function normally in the long-term. This is almost always achieved. Sometimes the metalwork is removed after a year or so. There is almost always a patch of numbness under the clavicle. This usually gets smaller over time and after a while is usually barely noticeable but sometimes an area of numbness is permanent.