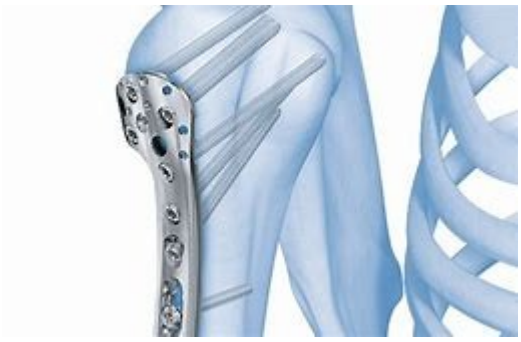
ORIF for proximal humeral fracture

Procedure Summary

Using modern design of plate and locking screws, they are design to hold the bone and helps it to heal. If the tuberosities are involved, they are reattached to the bone / plate with strong suture materials.
The ORIF is based on 4 basic principles which are anatomic reduction, stable fixation, preservation of blood supply and early, active mobilisation.
The procedure has the risk of stiffness, infection, metalwork cutout, avascular necrosis and non union.



Technique 1- Deltopectoral approach: a muscle splitting approach. No further tendon detachment is required as access to the joint can be achieved through the fracture itself

Technique 2 - Anterio-superior approach: gives better access to the greater tuberosity, but the anterior deltoid is detached and repaired at end.

Technique 3 - Arthroscopic assisted intramedullary nailing: a keyhole approach to repair the tuberosities and percutaneous fixation with an IM nail.

Notes: Rehab is geared towards protecting the repair of the tuberosities and the tissues disrupted during the surgical approach

AIM: 1 year to achieve good ROM- as a general guide the best outcome possible is to achieve 120° flexion and 20° external rotation and hand to waist level but is often significantly less than this. Relief of pain is the primary aim and ROM a secondary aim. (Refer to procedure summary above as well)

Patients can be discharged once returned to independent living with ADL's and function as required dependant on the patient.

Trauma Protocol:

DO NOT stress, strengthen or stretch the muscles that attach to the greater tuberosity for 6 /52 (supraspinatus, infraspinatus, teres minor).

Sling
6/52

Day 1- 6 weeks:

- Importance of pain control
- ice pack use + +
- sling use
- sleeping position (e.g remove sling and use body strap for support)
- washing and dressing
- movement of unaffected joints eg fingers, wrist and elbow (depending on op procedure and restrictions)
- Postural advice and scapular setting
- Encourage waist level ADL's (e.g. brushing teeth, eating).

Patients discharged at Day 2 if they can do HEP, use sling and pain is well controlled.

Exercises taught on the ward

Pendulum
Passive shoulder ER to neutral.
Hand, wrist and elbow ROM.

Follow-up Physiotherapy

2/52 post op.
Start passive shoulder flexion up to 90°/ pulley to 90° for 6/52.

Follow Phase 1a and b whilst:

-avoiding IR/HBB for 6/52.
-limiting ER to neutral for 6/ 52.

Phase 1 Aim: to increase joint ROM passive to active

Range of movement progressing gradually through the following

1a Passive ROM (controlled by the patient)
1b Active assisted ROM

NOTE - ER limited to 30° for 2/12.
- encourage SCAPTION rather then pure abduction.
- progress using short to long lever principles.
- Add isometric strengthening in flexion and ER (focus on ER rather than IR in the early stage as patients rarely have IR weakness given the ratio of internal rotators to external rotators.)
- Avoid abduction combined with IR or ER for 2/12.

3 months onwards:

Phase 2 Aim: Stretching at end of range and strengthening

2a Stretches at end of range

- encourage stretches to be done by the patient using a broom handle etc rather than by physiotherapist
- attention to posterior capsule stretch (within relevant restrictions).

2b Strengthening against resistance only once patient is achieving functional AROM and no pain to resisted muscle testing.

- include strengthening of rotator cuff, UFT, LFT, serratus anterior, biceps, triceps, deltoid as per assessment.

4 months onwards:

(If required)

Phase 3 Aim: full active rehab/ higher level function

Start sport specific rehab.

Patients can return back to competitive sports when achieving full AROM and normal strength.

General guidelines

Consultant post op follow up

All patients are normally followed up in clinic with consultant at 2/52 post op with xray on arrival in fracture clinic

Driving

Usually possible post op at 2/12+.

This is dependant on patient function and safety and specific post op instructions. Patients should always check with the DVLA and insurance company.