**FRACTURES OF THE PROXIMAL HUMERUS.**

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**Fractures of the proximal humerus usually occur after middle age and most of the patients are osteoporotic post-menopausal women.**

**In 20% of the cases there is considerable displacement of one or more fragments and a significant risk of complications due to bone fragility, damage to the rotator cuff and the prevailing co-morbidities. Deciding between operative and non-operative treatment can be very difficult.**

**Mechanism of injury:**

 **A fall on the outstretched arm. This one can also cause dislocation of the shoulder. Sometimes, there is both a fracture and dislocation.**

**CLASSIFICATION AND PATHOLOGICAL ANATOMY:**

 **The most widely accepted classification is that of NEER (1970). Four major segments involved in these injuries are:**

**1. the head of the humerus**

**2. the lesser tuberosity**

**3. the greater tuberosity**

**4.the shaft.**

**CLINICAL FEATURES:**

**1.Pain**

**2.Bruise on the upper part of the arm.**

**3.May have signs of axillary nerve or brachial plexus injury.**

**INVESTGATION:**

**>X-ray**

**>CT SCAN.**

**TREATMENT.**

**Minimally Displaced fractures.**

 **Are vast majority.**

 **Arm in a sling for1to 2 weeks**

 **Rest**

 **Analgesics.**

 **Gentle passive movements of the shoulder.**

 **>6 weeks’ fracture unites active exercises are encouraged.**

**TWO PART FRACTURES.**

 **Gently manipulation and arm sling for 4weeks.**

 **Analgesics**

 **Open reduction and fixation when closed reduction fails.**

**GREATER TUBEROSITY FRACTURES.**

 **Occurs with anterior shoulder dislocation and reduces once reduction is done. Difficult one may require a small incision and screws put.**

**ANATOMICAL NECK FRACTURES.**

 **Rare**

 **Fixation with screw in young patients**

 **Older patients’ prosthetic replacement. (HEMI-ARTHROPLASTY).**

 **There are high chances of avascular necrosis of humeral head.**

**THREE PART FRACTURES.**

 **Involve displacement of surgical neck and greater tuberosity.**

 **Best managed by open reduction.**

**FOUR-PART FRACTURES.**

 **The surgical neck and both tuberosities are displaced. They are severe injuries with high risk of complications:**

1. **Vascular injury.**
2. **Brachial plexus damage.**
3. **Chest wall injury.**
4. **Later avascular necrosis of the humeral head.**

**Difficult to treat and the treatment of choice is prosthetic replacement of the proximal humerus. Be warned>these are operations of the Expert.**

**FRACTURE DISLOCATION:**

**Two-part fracture dislocation (greater tuberosity with anterior dislocation and lessor tuberosity with posterior) can be reduced by closed means.**

**Three-part fracture dislocation when the surgical neck is also broken usually require open reduction and fixation.**

**Four-part fracture dislocation have a poor prognosis>prosthetic replacement is recommended.**

**COMPLICATIONS.**

**a). Vascular and nerve injuries**

**b) Avascular necrosis**

**c) Stiffness of the shoulder.**

**d) Malunion**

**FRACTURES OF THE PROXIMAL HUMERUS IN CHILDREN.**

* **They occasionally occur during birth.**
* **In infancy the physis can separate>Reduction does not have to be perfect and a good outcome is usual.**
* **In older children metaphyseal fractures or type II physeal fractures occur considerable displacement and angulation can be accepted. (compensatory growth occurs).**
* **Pathological fractures are not unusual as the proximal humerus is a common site of bone cysts and tumours in children.**
* **Fracture through a simple cyst usually unites and the cyst often heals spontaneously>ARM SLING FOR 4-6 WEEKS.**