Shoulder Girdle Fractures (Clavicle and Proximal Humerus)

Objectives
1. Understand the relevant anatomy
2. Perform a focused clinical evaluation
3. Know the appropriate radiographic studies
4. Appreciate the various management options and potential indications
5. Comprehend different techniques for surgical treatment

Anatomy
- Clavicle

S-shaped with one apex anteromedial and one posterolateral
Bordered by the acromioclavicular joint lateral and sternoclavicular medially
Fractures can be classified as midshaft (80%), lateral-third (15%), and medial-third (5%)

- Proximal humerus

Four parts: humeral head, humeral shaft, greater tuberosity, lesser tuberosity
Main deforming forces include rotator cuff, deltoid, and pectoralis major

Clinical Evaluation
- History: mechanism of injury, association injuries, neurologic symptoms, activity level, comorbidities

- Physical Exam: open wounds, skin at risk, deformity, neurovascular status

Imaging Evaluation
- Clavicle

Radiographs should be obtained with patient in upright position and arm at the side
Views should include anteroposterior view and 30^{o} cephalad tilt

- Proximal humerus

Radiographs should include anteroposterior, scapular-Y, and axillary lateral views
CT scans are useful to assess comminuted fracture patterns, determine articular involvement, and plan for operative intervention

Treatments
- Indications for non-operative versus operative treatment are controversial and largely dependent on fracture pattern and displacement, associated injuries, and functional status
- Non-operative: sling for comfort with early passive range of motion followed by active range of motion

Surgical Techniques
- Clavicle

Fixation implants generally used include plates and intramedullary nails
Plate positions can vary from superior to anteroinferior with considerations including implant prominence and stability

- Proximal humerus

Two main surgical approaches for ORIF include deltopectoral and anterolateral deltoid split
Anatomic locking plates are often used; intramedullary nails are options with certain fracture patterns
Hemiarthroplasty and reverse total shoulder arthroplasty can be surgical options in rare cases

References
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