PAEDIATRIC ACUTE CARE GUIDELINE	
Fractures – Forearm	
Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Fractures – Forearm

This guideline is specific for the assessment and management of forearm fractures

Background

- Fractures of the radius and ulna are common in children
- The usual mechanism is a fall onto outstretched hand (FOOSH)
- There may be various combinations of complete, greenstick or bowing (plastic deformity) fractures

General

- Midshaft radius and ulna fractures are common in school age children
- Unless there is significant deformity, angulation or displacement, they can be managed with a simple above elbow plaster
- Isolated shaft fractures of the ulna are rare – always look for an associated radial fracture or radial head dislocation
- Monteggia Fracture-Dislocation is a proximal or mid-third ulna fracture, with associated dislocation of the radial head. It occurs from 2 years of age to puberty.
- Galeazzi Fracture is a fracture of the radial shaft with radio-ulnar joint disruption. It is much less common than Monteggia fracture dislocations.

Assessment

- Always include the elbow and wrist when ordering X-Rays in suspected forearm

fractures
- Plastic deformity (bowing) usually occurs in the < 10 year old age group and is important to recognise
- Any clinical deformity of the forearm usually requires reduction

History

- The most common mechanism of injury for forearm fractures are falls onto an outstretched hand (FOOSH) with forward momentum
- Direct blows to the forearm account for a smaller proportion of radius and ulna shaft fractures
- Consider non-accidental injury. Complete an Injury Proforma form in all children < 2 years (A3 folded sheet located in the Doctor's offices)

Examination

- There is usually swelling, tenderness and decreased range of movement, especially pronation and supination
- There will be obvious deformity with displaced fractures
- Remember to always examine the elbow and wrist joints
- Look for open wounds and neurovascular deficits

Investigations

Radiology:

- Standard AP and lateral views of the whole forearm including the elbow and wrist joints. See Radiological Requests – Limb X-Rays.
- Assess the radiocapitellar line and radio-ulnar joint. See Elbow Region Fractures.
- For a description of the types of fractures see Fractures – Overview

Management

- Minimally displaced and minimally angulated fractures should be immobilised in an above elbow plaster and followed up in the Orthopaedic Fracture clinic
- Displaced, angulated and clinically deformed fractures usually require reduction

Initial management

- Analgesia
- Examine for neurovascular injury (if deficits evident manage immediately) – urgent Orthopaedic Team referral
- Ice and elevation of effected limb
- Immobilise suspected fracture before X-Rays (e.g. splint, board)
- Keep fasted if there is clinical deformity

- Antibiotics for compound fractures and consider tetanus

Further management

Midshaft Radius & Ulna

- Midshaft fractures may be greenstick, complete or bowed
- Fractures with no or minimal displacement/angulation are managed in an above elbow backslab with Orthopaedic Fracture clinic follow up in 7-10 days. See Outpatient Clinics.
- Fractures with clinical deformity, angulation > 10 degrees or any displacement should be discussed with the Orthopaedic Team urgently for possible reduction
- Up to 15 degrees of angulation may be acceptable in young patients if there is no obvious clinical deformity. Keep these patients fasted until review by the Orthopaedic Team.

Plastic deformity of radius and ulna with volar tilt	Greenstick fracture of radius shaft with 20 degrees of dorsal angulation and minimally displaced ulna fracture	Transverse fractures of radius and ulna with complete displacement of radius and significant dorsal angulation

Monteggia Fracture-Dislocation

- Proximal or mid-third ulna fracture, with an associated dislocation of the radial head
- Clinically there may be elbow swelling and pain in addition to an obvious forearm (ulna) fracture
- Always assess the radiocapitellar line on lateral elbow radiographs (see Elbow Region Fractures) as radial head dislocations are often missed
- Isolated radial head dislocation never occurs. Always look for an associated ulna fracture which may be a subtle plastic deformity
- All Monteggia fracture-dislocations should be referred to the Orthopaedic Team urgently for reduction

Monteggia fracture dislocation – ulna shaft fracture with radial head dislocation

Galeazzi Fracture Dislocation

- Radial shaft fracture (usually distal third) with distal radioulnar joint disruption
- Clinical distal ulnar prominence with joint instability may be present
- Galleazzi fractures should be referred to the Orthopaedic Team urgently for reduction

Fractures of Radius & Ulna Requiring Urgent Orthopaedic Referral

- Neurovascular compromise
- Compound fractures
- Significant displacement or angulation
- Clinical deformity
- Monteggia fracture dislocation
- Galeazzi fracture

Referrals and follow-up

- All children who have a plaster placed should have a plaster check at 24 hours. They can return to the Emergency Department to be assessed by the triage nurse.
- All radius and ulna shaft fractures should be followed up in the Orthopaedic Fracture clinic in 7-10 days. See Outpatient Clinics.

Health information (for carers)

- Pain Management Health Fact Sheet
- Patients with Plaster Health Fact Sheet
- Advise parents of the signs and symptoms of compartment syndrome

Tags

dislocation, forearm, fracture, fractures, galeazzi, midshaft, monteggia, radius, ulna

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