

STANDARD TREATMENT WORKFLOW (STW)

Supracondylar Fracture of Humerus in Children

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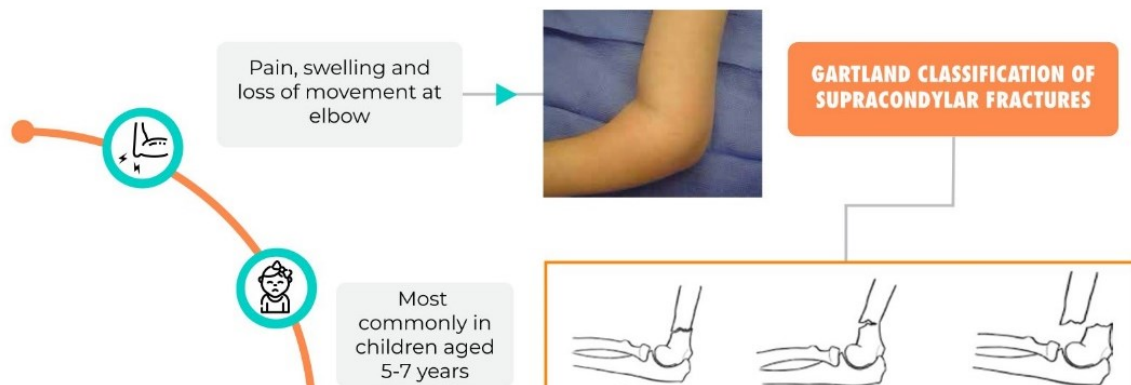


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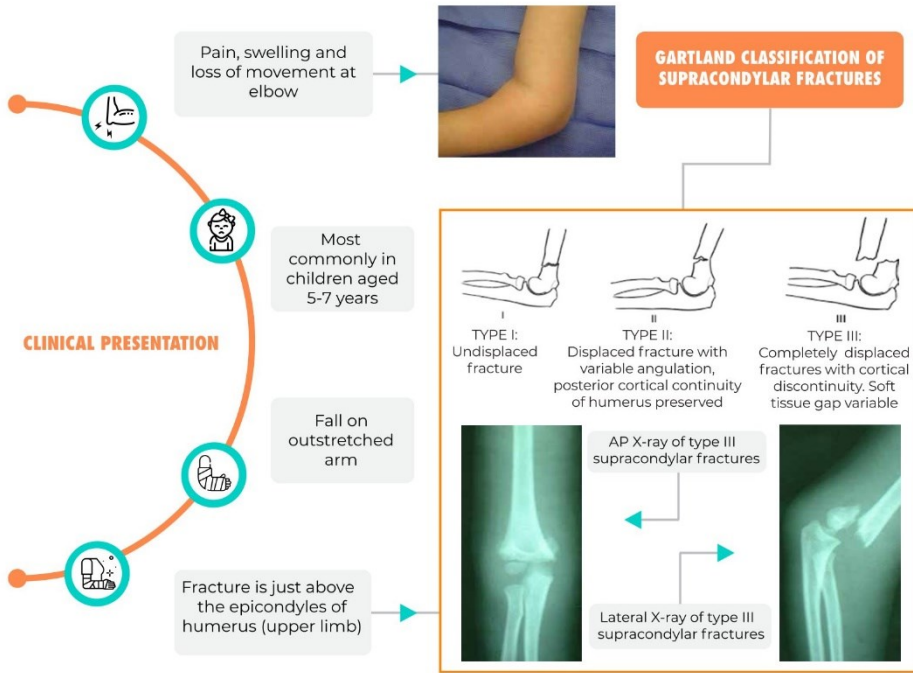
SUPRACONDYLAR FRACTURE OF HUMERUS IN CHILDREN

ICD-10-S42.413A



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EXAMINATION

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- Swelling
- Deformity
- Ecchymosis
- Limited active and passive elbow motion

DISTAL NEUROVASCULAR EXAMINATION (ALWAYS COMPARE WITH NORMAL LIMB)

VASCULAR EXAMINATION

- Assess radial pulse
- Assess vascular perfusion

WELL PERFUSED	POORLY PERFUSED
Warm and pink	Cold and pale

🚨 If vascular injury is suspected it should be treated as an emergency

NEUROLOGICAL EXAMINATION

- Median nerve
 - Radial nerve
 - Ulnar nerve
- Detailed examination of these nerves should be carried out if suspected

INVESTIGATIONS

ESSENTIAL

Radiographs: AP and lateral x-ray elbow. The comparative x-ray of contralateral elbow should be done, if suspicion is strong and x-ray of injured elbow appears normal

DESIRABLE

Immediate arterial doppler/ CT angiography (in case of suspected vascular injury)

TREATMENT

MANAGEMENT OF OPEN FRACTURES

PRIMARY CARE

- Inj Tetanus toxoid
- Pain management
- Liberal saline wash
- Removal of visible dirt and debris
- Sterile dressing and splintage
- First dose antibiotic after test dose (Broad spectrum antibiotics)
- Refer to higher center

SECONDARY/ TERTIARY CARE

All of above plus Reassess patient

MANAGEMENT OF CLOSED FRACTURES (IF X-RAY NOT AVAILABLE FOLLOW THE SIMILAR MANAGEMENT IN SITUATIONS OF SUSPICION)

PRIMARY CARE

- Pain management
- Splintage using triangular sling/ lateral elbow sling/ well padded moulded cramer wire splint in the position of deformity
- If vascular injury is suspected it should be treated as an emergency
- Refer to higher centre

SECONDARY/ TERTIARY CARE (X-RAY AVAILABLE)

TYPE I:
Immobilise: Above elbow well padded cast with 90 degree elbow flexion for three weeks
Follow-up: X-ray at 1 week to assess for displacement

TYPE II: One attempt of closed reduction under anaesthesia with radiological control
a) Closed reduction possible: above elbow plaster cast in flexion of elbow (10 degrees short of radial pulse) and pronation of forearm. Observe the patient for distal neuro-vascular deficits and swelling for at least 24 hours. Follow-up Xray should be done at 5 days for any displacement
b) Closed reduction failed/ impossible: Open reduction and pinning

TYPE III: supracondylar fractures/ flexion type/ medial column collapse
a) Neurovascular deficit absent: Closed reduction and percutaneous pinning (CRPP)
b) Neurovascular deficit present: Open Reduction and pinning;
C) Nerve injury without Vascular Injury: reduce fracture and observe for recovery of nerve injury for 3 weeks
in case of suspected/ proved distal neurovascular injury refer to tertiary centre. Emergent closed reduction of displaced pediatric supracondylar fractures must be performed in patients with decreased perfusion of the hand

These are signs of Compartment syndrome (Volkman's ischaemia) and may require urgent fasciotomy, along with management of vascular injury and fracture fixation

RED FLAG SIGNS FOR REFERRAL

- Pain on passive stretching
- Paresthesia
- Paralysis
- Pallor
- Pulselessness

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit the website of DHR for more information: (stw.icmr.org.in) for more information. ©Department of Health Research, Ministry of Health & Family Welfare, Government of India.