Radial neck fractures

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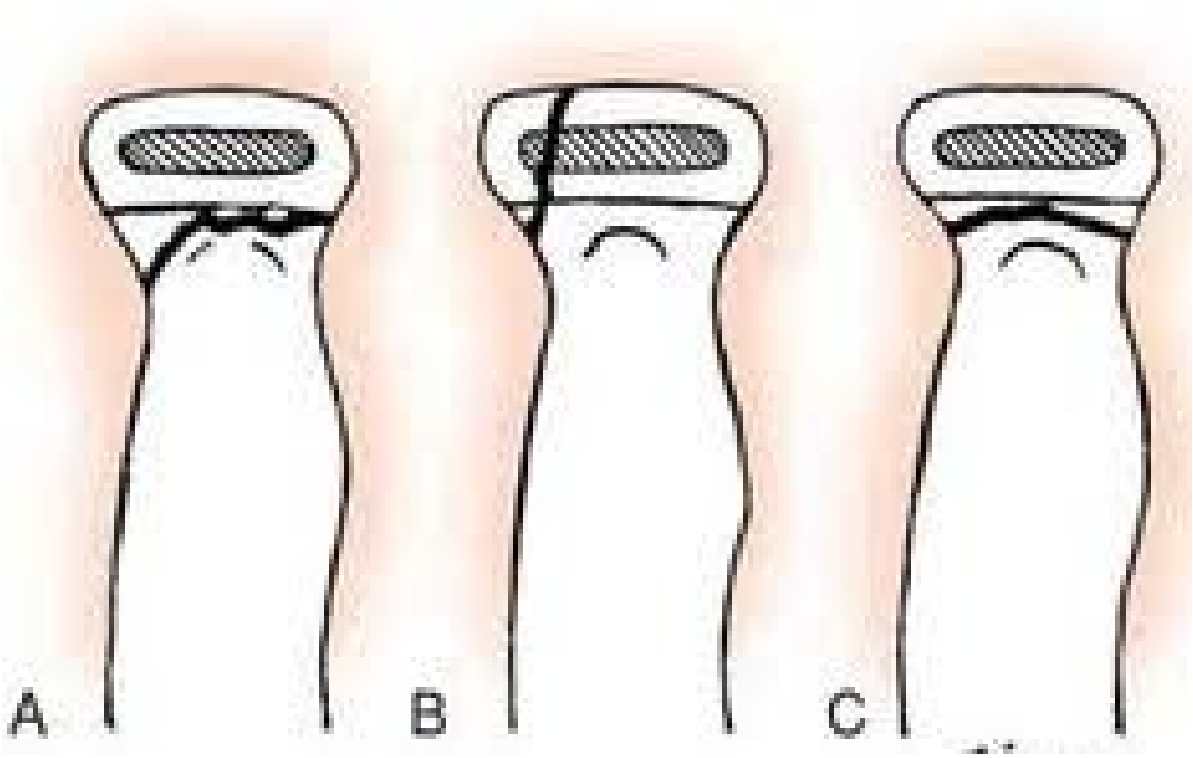
Classification



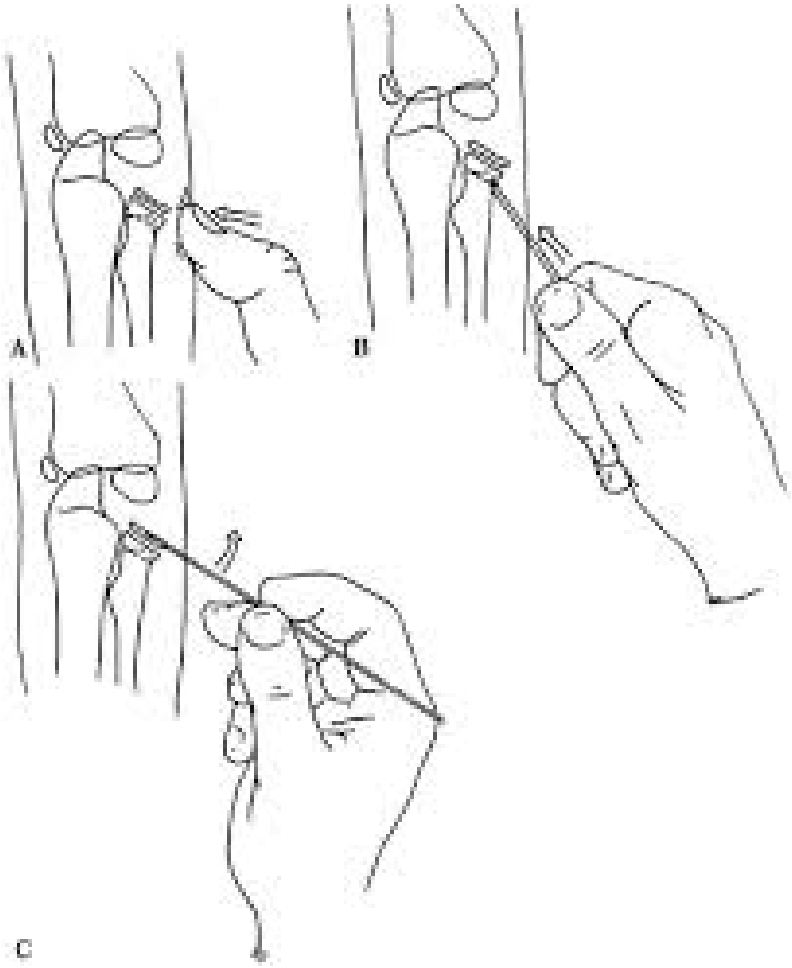
Closed Reduction

•Patterson maneuver : hold the elbow in extension and apply distal traction with the forearm supinated and pull the forearm into varus while applying direct pressure over the radial head

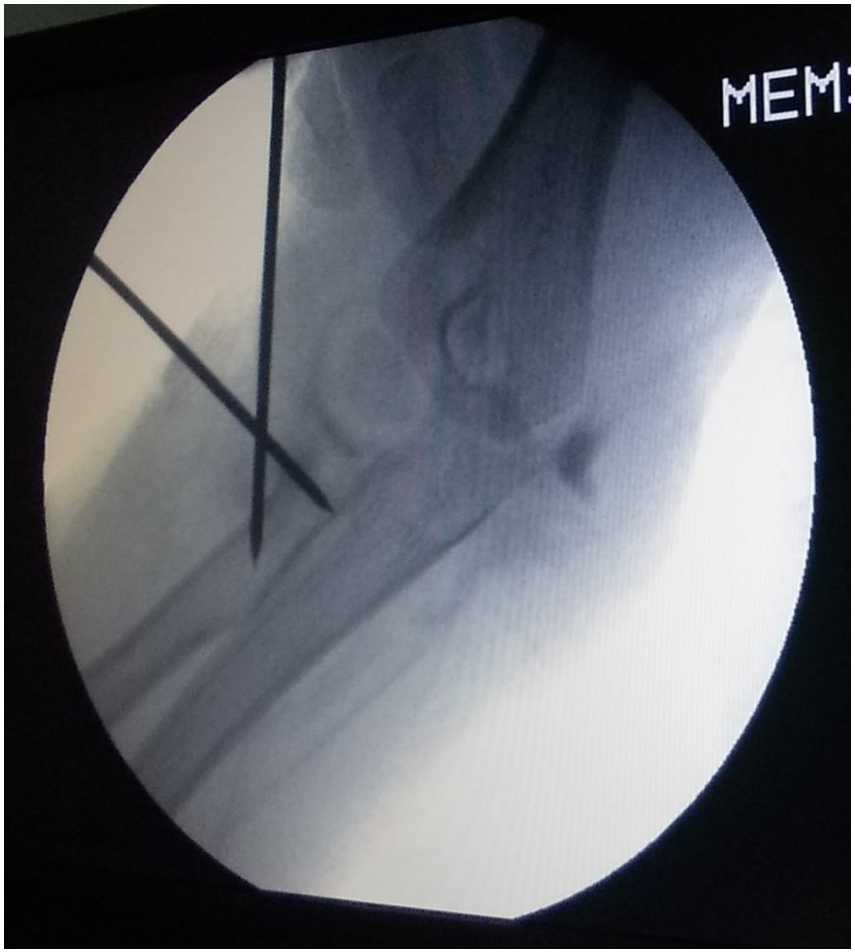
•Israeli technique : pronate the supinated forearm while the elbow is flexed to 90° and direct pressure stabilizes the radial head.

•elastic bandage technique: tight application of an elastic bandage beginning at the wrist continuing over the forearm and elbow may lead to spontaneous reduction

Joy stick method



Arthrogram assisted

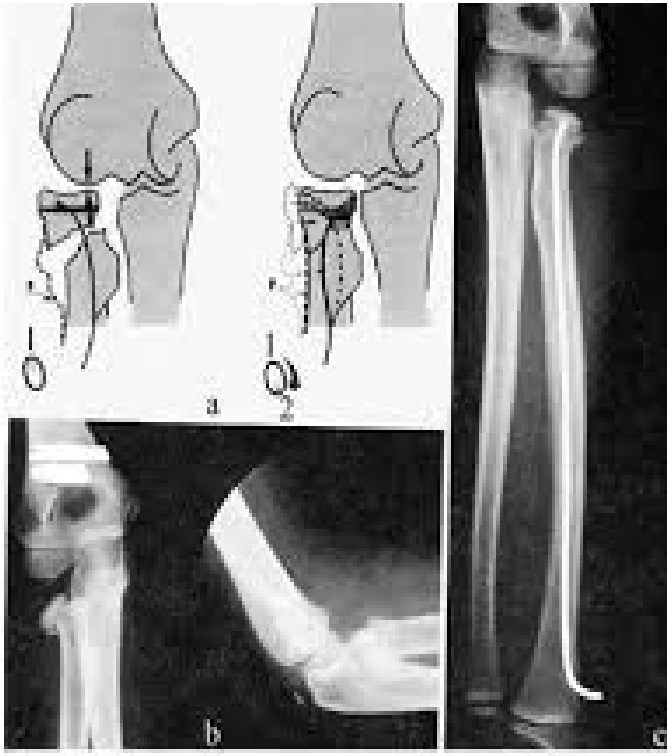


Unstable reduction

Trans capitellar K wire

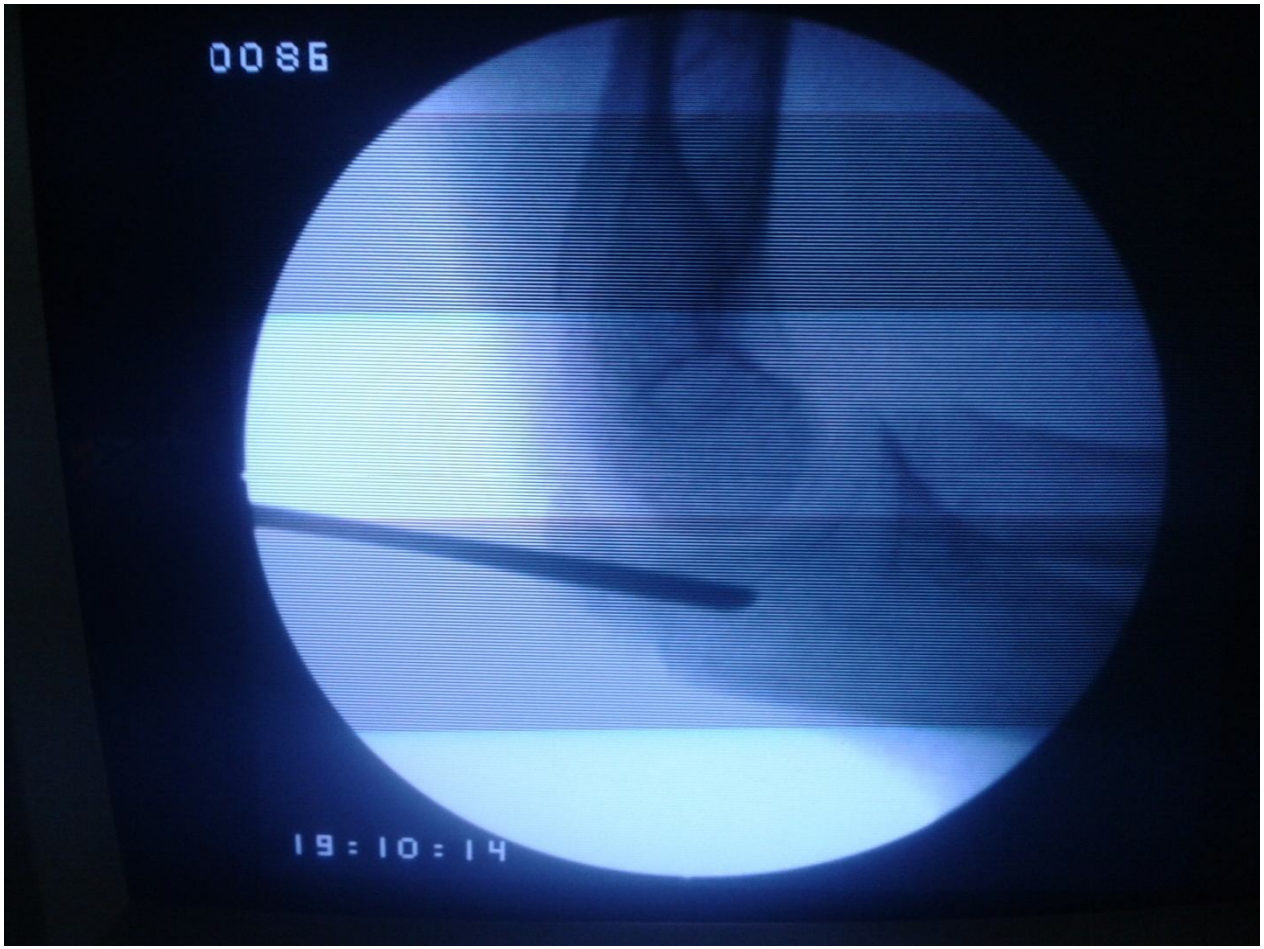
Advance
reduction K wire

Metazeau Technique



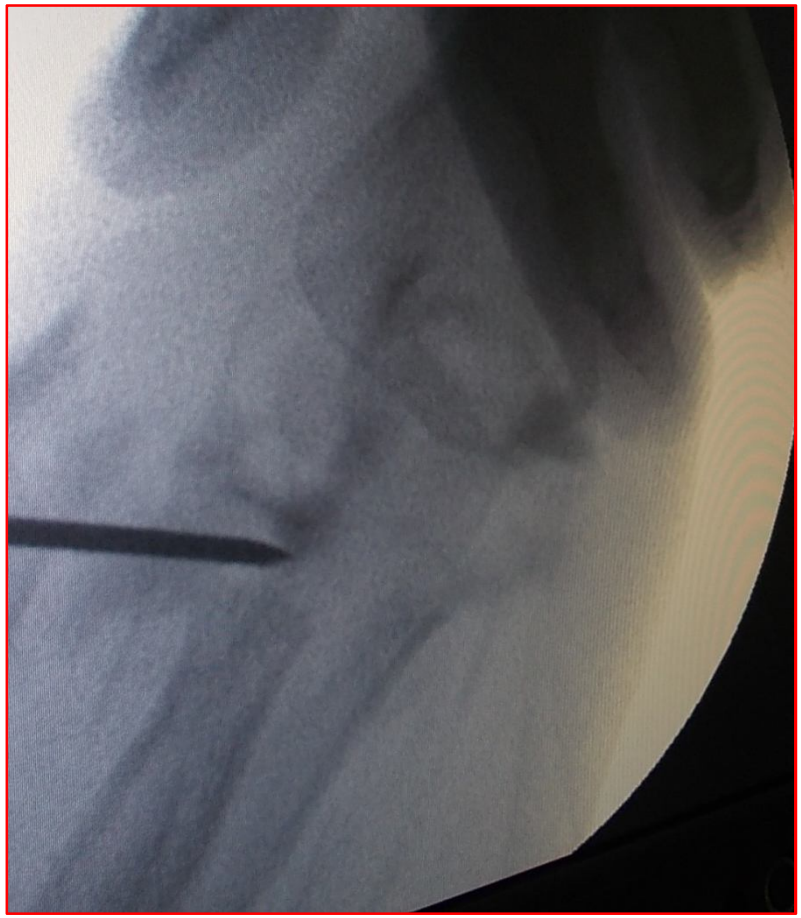
Case discussion

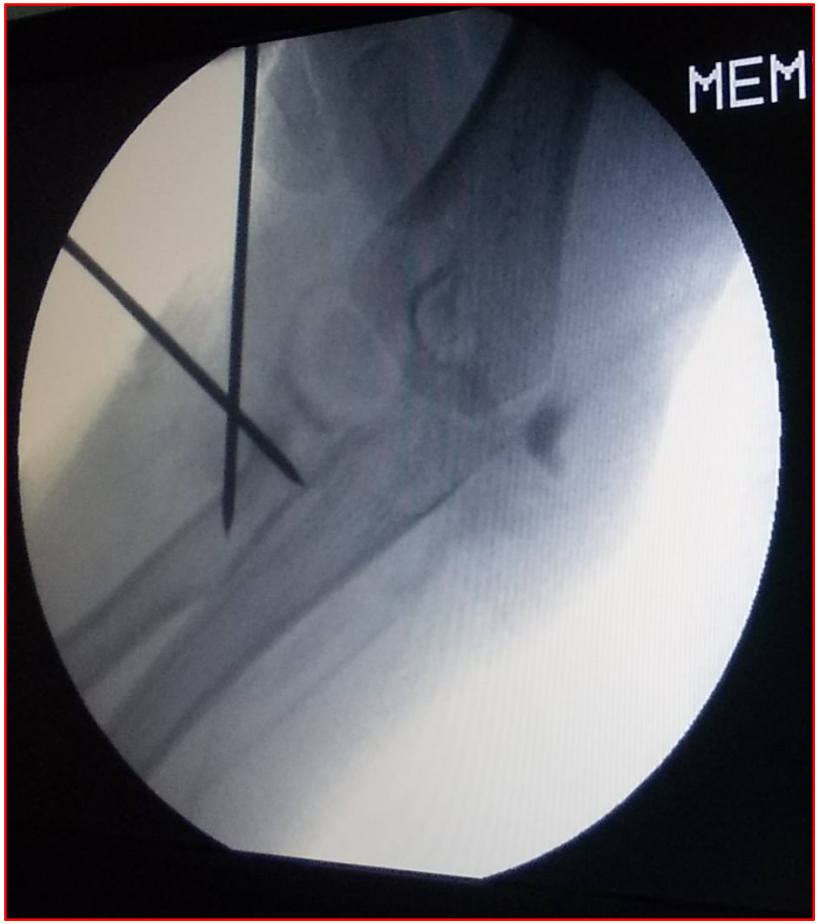
Rush rod



5 yr. old child with h/o fall

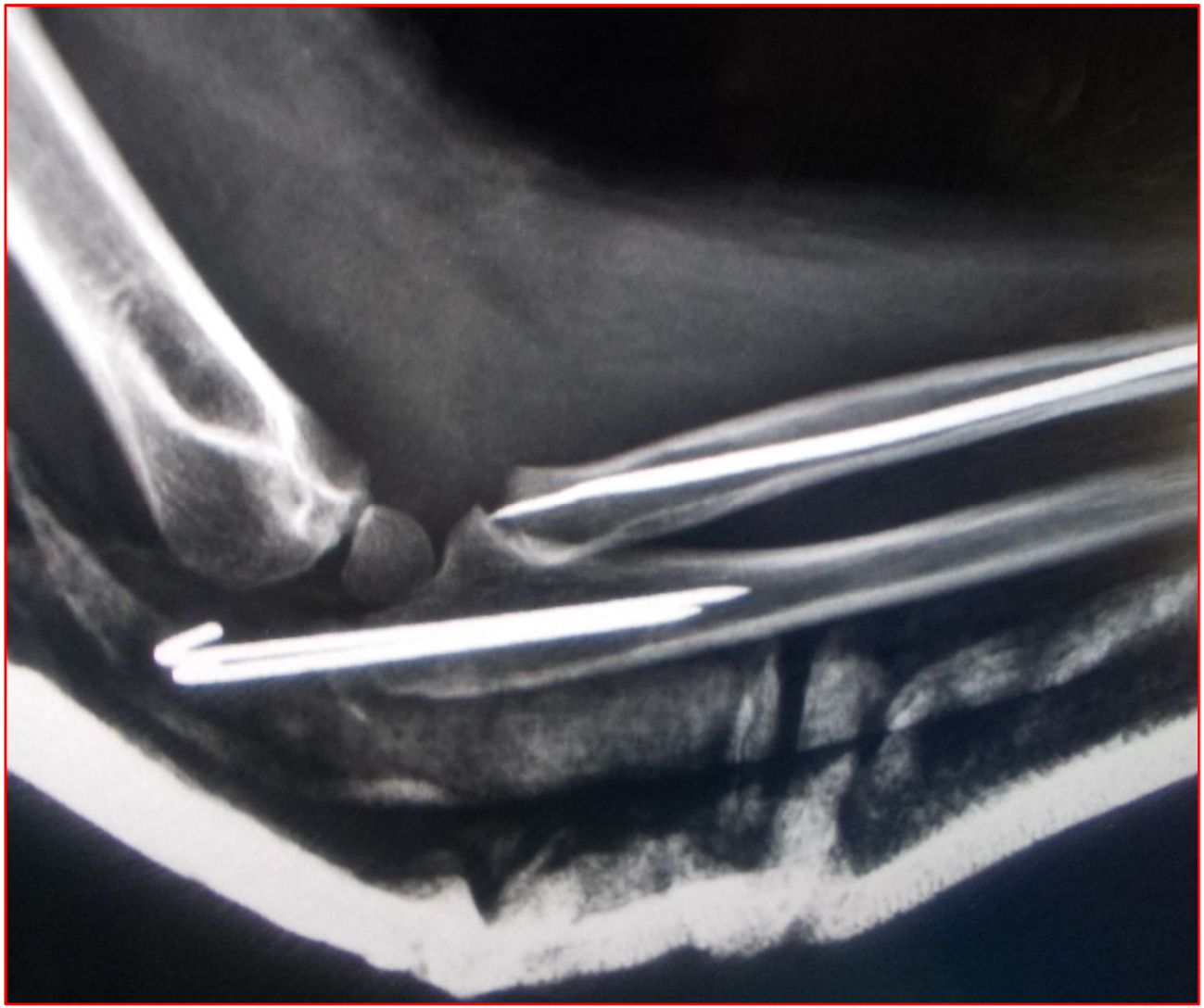
Joystick and arthrogram



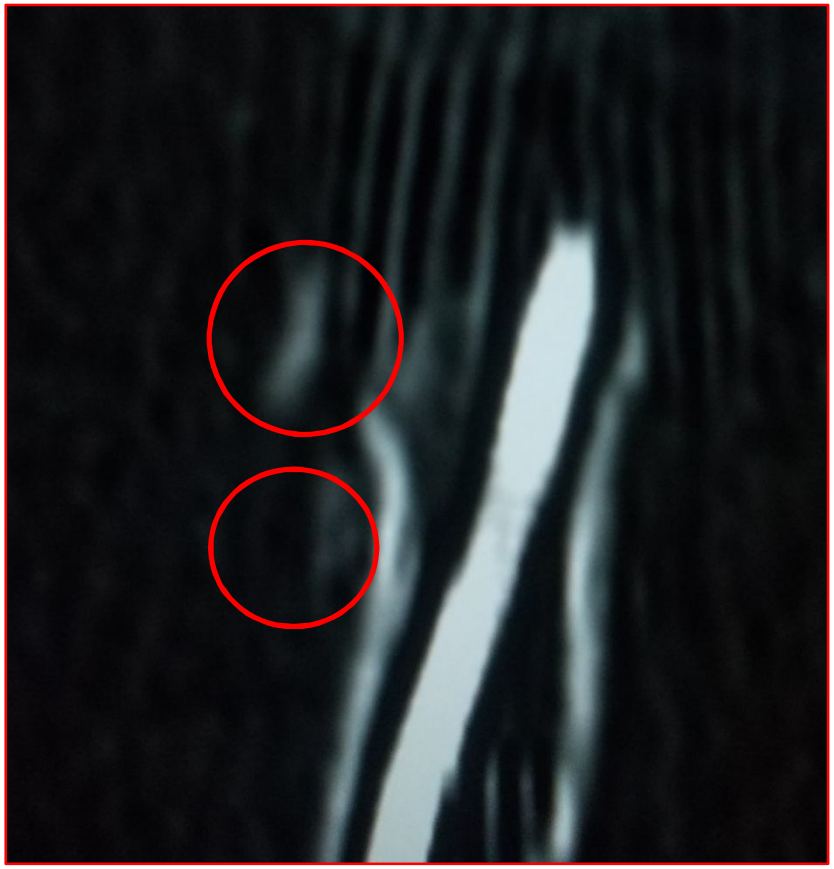


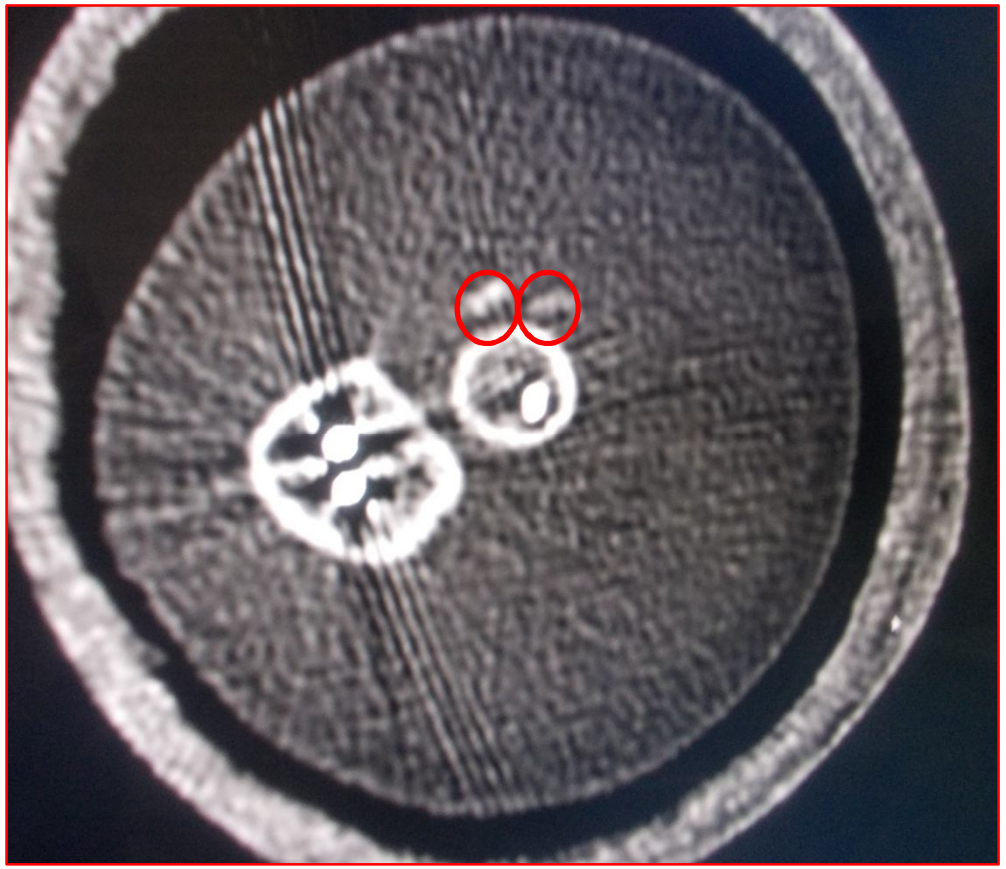
TENS for stabilizing the radial head

Post operative X ray



CT scan





1 yr. follow up

Radiographs at 1 yr.

Accetable Reduction:

- **younger child:**
    - < 10 deg of residual neck angulation will correct w/ growth;
    - up to 30 deg of residual angulation can be accepted;
    - angulation is > 30 deg
        - closed manipulative reduction or percutaneous pin to manipulate frx;
- **age > than 10 yrs:**
    - poor results w/ angulation > 30 deg, or translocation > 3 mm;
    - inability to reduce angulation < 45 deg, requires ORIF
        - crossed K-wire fixation of the proximal radius is preferred;
    - inability to pronate and supinate the forearm more than 60 deg, is another sign that that the reduction is not adequate;

passive supination and pronation is 60-70 deg in both directions;

- **reduction maneuver;**
  - elbow is completely extended & forearm is then fully supinated;
  - determine direction of displacement of radial head;
  - firm digital pressure is applied to acheive reduction;
- **displaced frx:**
  - may require open reduction;
  - closed manipulative reduction is attempted under GET
  - manipulation should achieve < 30 deg of angulation to be acceptable;
  - attempt reduction by applying a valgus stress and simultaneous direct manipulation w/ the surgeon's thumbs;
  - percutaneous K-wire manipulation may be attempted before resorting to open reduction;
    - pronating the forearm moves the posterior interosseous nerve away from the radial head;
  - note that the residual intact periosteum / capsule will provide some intrinsic fracture

Thank you