Pre-operative Care
For Surgery of Forearm Fracture

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Pre-operative Nursing Considerations for Surgery of Forearm Fracture

1. Patient’s problems
   - Diagnosis: Clinical features, x-ray examination
   - Painful
   - Functional Deficit

2. Surgical Preparation for patient
   - Anaesthesia
   - Fracture Treatment Intervention

3. Perioperative Standards of Care and Practice (AORN)
   - Patient Safety and Comfort
### OT List

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<th>Name</th>
<th>Sex/Age</th>
<th>Provisional diagnosis</th>
<th>Operation</th>
<th>Mode of anaesthesia</th>
<th>Surgeons</th>
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<td>F/34</td>
<td>Fracture Radius and Ulna</td>
<td>Open Reduction and Internal Fixation</td>
<td>GA</td>
<td>Dr. Y</td>
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Treatment of Forearm Fractures

**Aims:**

1. Restoration of length and their anatomical relation
   - normal forearm axis
2. Restoration of rotational movement
   (Dr. C H WONG, 2001)

- Reduction: Open, Closed
- Casting
- Fixation – Internal, External
Preparation

Considerations include:

1. Equipment required for the Surgery
2. Equipment for anaesthesia
3. Room Size
4. Selection of OR bed
5. Patient
Preparation - Equipment required for Surgery

Instrument for fracture reduction, plate application and screw insertion, implants.

Power Instrument for k-wire or screw insertion.
Equipment required for ORIF

Communication with surgeon for special instruments and implants is important
Radiographic Equipment and Image Intensifier

- Intraoperative or postoperative evaluation
OR Room

Large Room – for multiple surgery
- for X-ray Machine

- X Ray film viewer
- Compress air Outlet for pneumatic Power instrument
- Electrosurgical Unit
- Suction Unit
- OT table With Hand table
Common Modes of Anaesthesia for Surgery of Forearm Fracture

1. **General Anaesthesia** – reversible state of unconsciousness with amnesia, analgesia, reflex suppression, and muscle relaxation.

![Anaesthetic Machine](image1)

![Equipment for intubation](image2)
2. Peripheral Nerve Blockade

*Brachial Plexus Block:* Local anaesthetic injected around the nerve producing both sensory and motor blockade. Axillary technique often used for forearm and hand surgeries

- **Usual Duration:** 2 hours, up to 10 hours

- Good for **Postoperative pain control.**

- **Contraindications:** Neurovascular impairment of operative limb, Sepsis in Axillary, Patient allergic to local anaesthetic drug, patient’s refusal
Utrasound Machine for guiding insertion of needle

Local Anaesthetic drug & injection device
3. **Intravenous Regional Anaesthesia**  
**Bier Block**

- *Double tourniquet cuffs* applied to operative arm and inflated.
- Then *local anaesthetic injected into distal peripheral vein* to provide anaesthesia.
- *Tourniquet time is crucial*. Cannot be less than 30 mins or greater than 90mins
- *Constant monitoring* of conscious state, blood pressure, pulse rate and oxygen saturation
- *Assessment* of circulatory status and return of sensation critical *postoperatively*
Preparation of Patient

1. **Patient Identification**

Correct Site Surgery
Ensure RIGHT Patient having RIGHT Operation
On the RIGHT side
**Positioning of Patients**

**Aims**
1. Maximum exposure to surgeons
2. Allow Reduction of fracture possible
3. Effective Management to prevent complications, e.g. pressure sore, nerve damage..

**Position**
- Commonly supine with arm rested on hand table of same height of OR table
- Application of finger traps for Wrist arthroscopy
Use of Tourniquet

- Frequently used for procedures involving forearm.
- To provide a bloodless field to facilitate surgical dissection and fracture fixation.
- Potentially dangerous, should be applied carefully and monitored constantly while in use.
1. *Use appropriate size cuff.* Cuff should overlap a minimum of 3 and a maximum of 6 inches.

2. Use the *cuff with largest width* whenever possible to minimize local pressure effect and to give a more effective occlusion effect.

3. Exact *tourniquet pressure* has not been standardized. Clinical practice for forearm: 50mmHg – 75mmHg above systolic pressure
4. **Inflation time** should be kept to a minimum. Recommended not more than 90 mins.
5. **Adequate padding** to avoid soft tissue damage
6. Skin prep. Solution should not be spill under the tourniquet to avoid chemical burn.
7. **Post-operative evaluation** is crucial.
Measures to Prevent Surgical Site Infection

Although patient’s factors may increase the risk of post-operative infections, our preparation and care can help minimize it.

1. Antimicrobial Prophylaxis
   - Given 30 to 60 minutes before surgical incision.
   - Injected intravenously at least 10-15 minutes before inflation of tourniquet cuff.
2. Temperature Regulation

- Patient whose core temperature below 36°C has increased incidence of wound infection.
- Maintain ambient room temperature at 22°C and higher for high risk patients
- Limit patient body exposure
- Use warm IV and irrigation fluid
- Use force warm air blankets as far as possible.
3. **Skin Preparation**

- Use clipping if removal of hair is really needed.
  
  Done immediately before the operation

- Take a shower or bath the night before if possible.

- Appropriate antiseptic agents for skin preparation
4. **Aseptic Technique**

- Use sterile items within sterile field
- Work and move in a manner that maintain sterility of the field.
- Adequate sterilization of instruments.
- *NO flash sterilization* for all Implants and instrument sets used for implant.
- Sterile dressing for 24 to 48 hours postoperatively
Good pre-operative planning and implementation of care can enhance the quality of care provided for patient, and help patient to restore function with a minimum complications
Thank You