Case Series-Open Reduction Internal Fixation With Plating Of Distal Radius Fracture

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Introduction:

Distal radius fractures account for a substantial proportion of orthopedic injuries, posing significant challenges in achieving both anatomical restoration and functional recovery. Among the myriad treatment options, Open Reduction Internal Fixation (ORIF) has emerged as a cornerstone in the surgical management of complex distal radius fractures. This study seeks to delve into the intricacies of ORIF, shedding light on its application, nuances, and the multifactorial considerations that guide orthopedic surgeons in the decision-making process.

The decision to pursue ORIF is influenced by various factors, including fracture displacement, instability, and patient-specific characteristics. Surgical intervention becomes imperative when conservative measures prove insufficient in maintaining adequate reduction or when functional impairment is pronounced. This study aims
to explore the rationale behind choosing ORIF, evaluating its efficacy in achieving anatomical alignment, and assessing the subsequent impact on patient functionality.

Through a retrospective analysis of cases treated with ORIF, we endeavor to delineate the correlation between patient demographics, fracture patterns, and postoperative outcomes. By dissecting the complexities inherent in these fractures, we aspire to contribute valuable insights that may inform future clinical decisions and enhance the overall management of distal radius fractures. This research not only addresses the technical aspects of ORIF but also emphasizes the importance of a patient-centered approach in optimizing recovery and restoring the functionality of the wrist and hand.

Inclusion and exclusion criteria play a crucial role in the selection of patients for Open Reduction Internal Fixation (ORIF) in cases of distal radius fractures. These criteria help ensure that the surgical intervention is appropriately indicated and that patients are likely to benefit from the procedure. Here are general inclusion and exclusion criteria:

**Inclusion Criteria:**
- Displaced Fractures
- Instability
- Articular Involvement
- Functional Considerations
- No posterior soft tissue involvement.
- Failure of Conservative Treatment
- Open Fractures
- Patient Age and Health

**Exclusion Criteria:**
- Non-displaced Fractures
- Minimal Symptomatic Fractures
- Medical Comorbidities
- Patient Refusal
- Unstable Medical Conditions
- Non-Compliance
- Severe Soft Tissue Injury
- Severe Osteoporosis

**INVESTIGATIONS:**

Antero posterior(A.P) and lateral Xrays of wrist joint were taken in all patients

**MATERIALS AND METHODS:**

7 cases of distal radius fracture were recovered

**Case presentation:**

35-YEARS old male patient presented with pain over right wrist and difficulty in moving the wrist patient gives alleged history of slip and fall on outstretched hand. Patient was taken to hospital for further treatment. Xray right wrist was taken to diagnose any fracture due to the fall.
Surgical intervention

1. Patient Positioning:
Place the patient in a supine position on the operating table.
Administer appropriate anesthesia (general or regional) based on the patient's condition and surgeon's preference.

2. Preoperative Planning:
Review imaging studies (X-rays, CT scans) to understand the fracture pattern and plan the surgical approach. Determine the need for additional procedures such as ulnar styloid fixation or ligament repair.

3. Sterile Preparation and Draping:
Thoroughly clean and prepare the surgical site. Drape the limb in a sterile fashion, exposing the distal radius and surrounding areas.

4. Incision:
Make an incision based on the chosen surgical approach (volar, dorsal, or combined).
Considerations:
Volar Approach: Typically provides good exposure for fractures with volar displacement.
Dorsal Approach: Useful for dorsal or comminuted fractures.
Combined Approach: May be necessary for complex fractures.

5. Soft Tissue Dissection:
Carefully dissect through the soft tissues to expose the fractured site. Protect neurovascular structures and maintain meticulous hemostasis.

6. Fracture Reduction:
Perform a gentle reduction of the fracture, correcting any angulation or displacement. Utilize fluoroscopy to verify and confirm proper alignment.
7. Fixation:
Choose appropriate fixation devices:
Plates: Anatomically contoured volar or dorsal plates.
Screws: Variable-angle or fixed-angle screws for stable fixation.
Kirschner Wires: Temporary fixation or for specific fracture patterns.
Place fixation devices to secure the fracture fragments in the desired alignment.
8. Bone Grafting (if necessary):
If dealing with comminuted fractures or bone defects, consider bone grafting for additional support.
9. Soft Tissue Repair:
Address any associated soft tissue injuries. Ensure proper closure of incisions in anatomical layers.
10. Postoperative Imaging:
Confirm the placement of hardware and the achieved fracture reduction using fluoroscopy.
11. Immobilization:
Immobilize the wrist in a splint or cast to protect the surgical site during the initial healing phase.

RESULTS:

Anatomical Restoration:
Successful ORIF aims to restore the normal anatomy of the distal radius, ensuring proper alignment and joint congruity.

Fracture Healing:
Properly performed ORIF facilitates bone healing, reducing the risk of nonunion or delayed union.

Improved Function:
Patients often experience improved wrist function, range of motion, and grip strength compared to preoperative levels.

Pain Reduction:
Relief from preoperative pain is a common positive outcome, contributing to better overall quality of life.
Early Mobilization:
ORIF with stable fixation allows for early mobilization and rehabilitation, minimizing stiffness and promoting faster recovery.

Reduced Complications:
A well-executed procedure can minimize the risk of complications such as malunion, hardware failure or infection.

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REFERENCES: