DR BOB JANG

Orthopaedic Surgeon

Patient Name _____

Follow-Up Appointment: _____

WHAT IS A DISTAL HUMERUS FRACTURE?

A distal humerus fracture is a break in the lower end of the upper arm bone (humerus), which forms part of the elbow joint. These fractures can involve the joint surface (intra-articular) or occur just above the joint (extra-articular). Due to the complexity of the elbow, these fractures often require surgical intervention to restore alignment and function.

MECHANISM OF INJURY

- **High-Energy Trauma:** Such as motor vehicle accidents or falls from height, which can cause comminuted and displaced fractures.
- **Low-Energy Trauma:** Common in elderly patients with osteoporosis, often resulting from a simple fall onto an outstretched hand or directly onto the elbow.
- **Direct Impact:** A direct blow to the elbow, such as from sports injuries or accidents, can lead to a fracture.

ANATOMY

The elbow is a complex hinge joint involving:

- **Humerus:** The distal humerus forms the upper part of the elbow joint, articulating with the ulna and radius.
- **Ulna:** Provides structural support and primary hinge movement at the elbow.
- **Radius:** Plays a role in forearm rotation and stability.
- **Ligaments:** The medial and lateral collateral ligaments provide stability to the joint.
- **Ulnar Nerve:** Runs behind the medial epicondyle and is at risk of injury or entrapment in distal humerus fractures.

PROGNOSIS

- **Good Prognosis:** If the fracture is well-reduced and early motion is achieved, patients can regain good function with minimal stiffness.
- **Risk of Stiffness:** Elbow fractures, particularly intra-articular fractures, are prone to stiffness if not aggressively rehabilitated.

TREATMENT APPROACH

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Non-Operative Treatment:

- Only considered in cases where the fracture is minimally displaced and stable.
- Requires prolonged immobilisation, leading to a higher risk of stiffness and poor long-term function.

Surgical Treatment (ORIF):

- Most distal humerus fractures require surgical fixation to restore anatomy and allow for early movement.
- Surgery involves realigning the bone fragments and securing them with plates and screws.
- If exposure to the joint is limited, an **olecranon osteotomy** may be performed, where a controlled break is made in the olecranon (elbow tip) to allow better access to the fracture. This is then fixed with plate and screws.
- **Ulnar nerve decompression** is routinely performed to prevent postoperative nerve compression symptoms.
- In some cases, a **distal humerus hemiarthroplasty** or **total elbow replacement** may be required for severely comminuted fractures, particularly in elderly patients with poor bone quality.

POTENTIAL COMPLICATIONS

- **Elbow Stiffness:** Early movement is critical to prevent loss of motion.
- **Nerve Injury:** The ulnar nerve is at risk due to its close proximity; decompression helps minimise long-term neuropathy.
- **Nonunion or Malunion:** The fracture may fail to heal properly, requiring further intervention.
- **Post-Traumatic Arthritis:** Joint surface damage can lead to arthritis over time.
- **Hardware Irritation:** The plates and screws may cause irritation, requiring **hardware removal** once the fracture has fully healed.

POST-OPERATIVE REHABILITATION PROTOCOL

0-2 Weeks:

- Splinting and elevation to minimise swelling.
- Finger, wrist, and shoulder range of motion exercises.
- Pain control with medications.

2 Weeks:

- Follow-up for wound review and suture removal.
- X-ray evaluation to confirm fracture alignment.
- Begin supervised elbow range of motion exercises (as tolerated).
- If an olecranon osteotomy was performed, initial motion may be more restricted.

2-6 Weeks:

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- Progressive range of motion with physiotherapy.
- Avoid lifting more than 1 kg.
- Gradual elbow extension progression.

6-12 Weeks:

- Continue to improve range of motion and strength.
- Start light resistance training.
- Monitor for signs of nerve irritation or hardware discomfort.

3-6 Months:

- Functional rehabilitation and return to daily activities.
- Avoid heavy lifting and high-impact activities until final clearance from your surgeon.
- Discuss hardware removal if experiencing irritation.

FREQUENTLY ASKED QUESTIONS

Can I drive after my operation?

- You will be in a splint or brace initially and will NOT be able to drive for at least 4-6 weeks. Your ability to return to driving depends on your elbow function and pain levels.

Can I shower after my operation?

- Keep the wound and plaster dry for the first 10-14 days. You can use a plastic covering over your arm. After your first follow-up, you may shower normally if the wound is well healed.

Will I need my hardware removed?

- In some cases, plates and screws can cause irritation, particularly at the olecranon osteotomy site. If hardware discomfort occurs, removal can be considered after the bone has fully healed, typically after 12 months.

Precautions:
Follow Dr Jang's Instructions: Adhere to all post-operative instructions provided by your surgeon and physiotherapist.
Avoid Falls: Take precautions to prevent falls, as another fall onto your elbow could result in further injury.
Monitor for Signs of Infection: Notify your healthcare provider immediately if you experience increased pain, redness, swelling, or drainage from the surgical site, as these may be signs of infection.
Protective Measures: Use caution when engaging in activities that could put stress on your healing elbow, and consider using protective equipment if necessary.

Conclusion:

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Recovery from ORIF surgery for a distal humerus fracture requires patience, dedication to your rehabilitation program, and adherence to Dr Jang's instructions. By following the recommended post-operative care plan and working closely with your healthcare team, you can optimise your recovery and achieve the best possible outcome. If you have any questions or concerns during your recovery process, do not hesitate to contact Dr Jang via his rooms or family doctor for assistance.

Yours sincerely,
Dr Bob Jang
Orthopaedic Surgeon.
BMed FRACS (Ortho) FAOrthA

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