

# ORTHOPAEDICS



FOR PRIMARY  
HEALTH CARE



## LION

LEARNING INNOVATION VIA  
ORTHOPAEDIC NETWORKS

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# Humeral shaft fractures

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## Learning objectives

1. Assess for neurovascular injuries.
2. Understand which injuries need to be referred.
3. Learn a safe technique to immobilize fractures adequately.

## Introduction

Humeral shaft fractures are fractures extending from below the surgical neck to the supracondylar ridge.

The mechanism of injury may be a high energy impact (falls from height, road accidents) or low energy impacts, such as a fall from standing height or trivial trauma as in pathological fractures.



## Clinical assessment

- Observe the advanced trauma life support (ATLS) approach for all high energy impact patients.
- Examine and document the neurovascular status, most notably, the radial nerve.
- Document the status of the soft tissue envelop.

## Management

Attempt conservative treatment in a U Slab for six weeks.

### Acceptable position

- More than 50% apposition.
- Less than 30° valgus or varus deformity.
- Less than 30° anterior or posterior angulation.

Failure to achieve and maintain these position goals should dictate the surgical treatment of the fracture.

## Absolute indications for surgery

- Open fracture
- Fracture with neurovascular injury requiring repair
- Failure of conservative treatment
- Nonunion
- Malunion

## Relative indications for surgery

- Segmental fracture
- Pathological fracture
- Multiple fractures
- Ipsilateral shoulder or forearm fracture
- Other forms of soft tissue compromise
- Patient's work or leisure requirements

## Common complications of humeral shaft fracture

- Neurovascular injuries – high index of suspicion of radial nerve palsy is warranted for the distal third spiral fracture (Holstein Lewis fracture)
- Malunion
- Nonunion
- Joint stiffness

## References

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## ABOUT THE BOOK

Informed by experts: Most patients with orthopaedic pathology in low to middle-income countries are treated by non-specialists. This book was based on a modified Delphi consensus study\* with experts from Africa, Europe, and North America to provide guidance to these health care workers. Knowledge topics, skills, and cases concerning orthopaedic trauma and infection were prioritised. Acute primary care for fractures and dislocations ranked high.

Furthermore, the diagnosis and the treatment of conditions not requiring specialist referral were prioritised.

\* Held et al. Topics, Skills, and Cases for an Undergraduate Musculoskeletal Curriculum in Southern Africa: A Consensus from Local and International Experts. JBJS. 2020 Feb 5;102(3):e10.

## THE LION

The Learning Innovation via Orthopaedic Network (LION) aims to improve learning and teaching in orthopaedics in Southern Africa and around the world. These authors have contributed the individual chapters and are mostly orthopaedic surgeons and trainees in Southern Africa who have experience with local orthopaedic pathology and treatment modalities but also in medical education of undergraduate students and primary care physicians. To centre this book around our students, iterative rounds of revising and updating the individual chapters are ongoing, to eliminate expert blind spots and create transformation of knowledge.

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