



Standard Treatment Workflow (STW)

TIBIAL PLATEAU FRACTURES

ICD-10-S82.109A

DEFINITION

A fracture involving the proximal end of the tibia which may or may not extend to the articular surface and or diaphyseal region

MECHANISM OF INJURY

- High-energy trauma in young patients (RTA)
- · Low-energy falls in elderly

Management of patient as per ATLS protocols **Presentation:**

· Pain, swelling, deformity at or below the

PHYSICAL EXAM

- Look circumferentially to rule-out an open
 - Tenderness below the knee
- Rule out compartment syndrome (blisters, ecchymosis, swelling, pain out of proportion)-
 - Look for distal neurovascular deficit
- A. Airway and Cervical spine
- B. Breathing and ventilation
- C. Circulation and haemorrhage control
- D. Disability and Neurological
- E. Exposure and Environment control

Open Fractures - STW

Urgent referral to higher centre for consideration for Fasciotomy and external fixator application

INVESTIGATIONS

RADIOGRAPHS

- AP View Schatzker classification
- Lateral View Posterior fracture component

Lateral Pure Lateral split Lateral Splitdepression fracture depressed fracture fracture Type 2 Type 3 Type 1 Type 4

Bicondylar

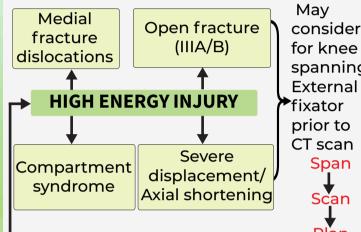
fracture

CT SCANS REQUIRED FOR

- Detailed assessment of fracture pathoanatomy & Preoperative planning
- Column classification Luo

LOW ENERGY INJURY

Preferable to get a CT scan



THREE COLUMN CLASSIFICATION (LUO)

- One column fracture is defined as an independent articular depression with a break in the column
- Zero-column fracture = purely articular

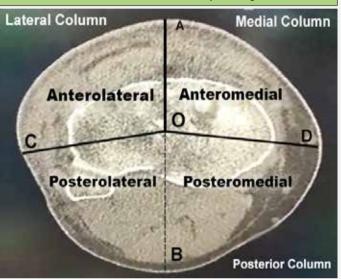


Plate application is based on the column concept. Attempt to reduce and fix each column individually

MANAGEMENT

GOALS OF TREATMENT

Restoration of joint stability

Medial plateau

fracture

- · Anatomical reduction of the articular surface
- Restoration of the mechanical axis of the lower limb

Screws alone

Metaphyseal-

diapyseal dissociation

- Simple split
- Depressed fracture elevated percutaneously

Hybrid External fixator/ Ilizarov: Poor skin condition, post fasciotomy

Refer to tertiary centre

IMPLANT OPTIONS

May

consider

spanning

fixator

prior to CT scan

Span

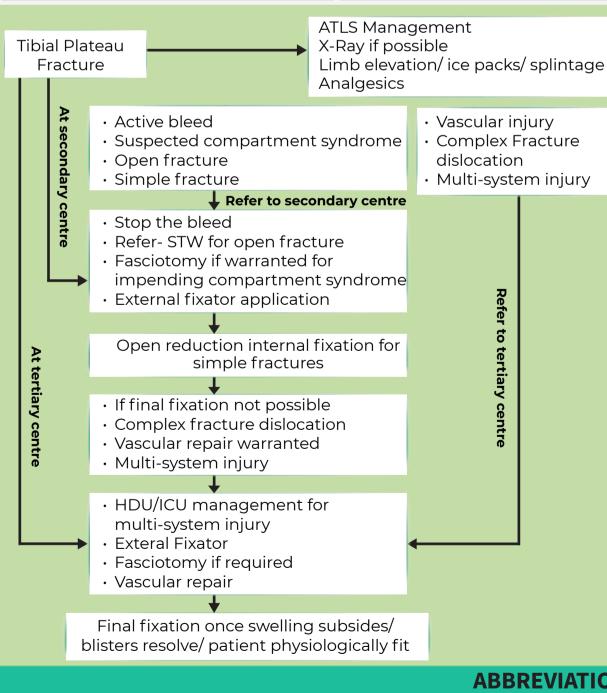
Scan

Plan

Anatomical locking plates

- Buttressing against shear forces or Neutralizing rotational forces
- Additionally Rim plates/ fragment specific small plates/ bone graft substitutes may be used on case to case basis

Tibial Plateau Fracture



X-Ray Assess need for external fixator-Skin condition/ swelling/blisters/compartment syndrome Open reduction internal fixation should be performed only after appearance of "wrinkle sign" Schatzker 4 Schatzker 1 to 3 Medial or Anterolateral approach posteromedial approach based on column involved Articular surface reconstruction by elevating Fracture depression reduction using bone punch via lateral fracture Fixation with split/medial Antiglide plate window

> (Type 2 and 3 fractures)

Placement of

raft screws

and/or plate

Schatzker 5 & 6 Based on the column conceptapproach to each column must be

made and all

columns to be

fixed

First fix one fragment anatomically (usually posteromedial)

Elevate the articular depression if present

Fix each fragment with anatomical locking plates

ABBREVIATIONS

IM Nail: Intramedullary Nail IV/IM: Intravenous/Intramuscular Mess: Mangled Extremity Severity Score

NPO: Nil Per Oral **RL**: Ringer's Lactate **RTA**: Road Traffic Accident

REFERENCES

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ATLS: Advance Trauma Life Support

CT: Computed Tomography

GA: Gustillo Anderson

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