

Orthopedic Treatment Guidelines

Purpose:

This guideline is to ensure optimal care is provided to the trauma patient when providing care for orthopedic injuries.

Guidelines defined for the following: 1) hemodynamically unstable pelvis fractures; 2) open fracture management; 3) long bone fx with multiple injuries; 4) geriatric hip fx guidelines.

Hemodynamically unstable pelvic fx management:

- See pelvic fx guideline referred in the Trauma Handbook
- Hemodynamically unstable patients require immediate interventions. Identifying the source of the hemorrhage through assessment (i.e FAST, portable X-ray or DPA)
- Consider the following interventions for unstable pelvis:
 - Activation of MTP
 - Application of pelvic binder or sheet
 - Consider embolization consulting IR
 - External fixation
- See REBOA guideline referred in the Trauma Handbook

Open fracture management:

- Patients identified with open fractures should receive IV antimicrobials within 1 hr of presentation.
- Open fracture management should include operative irrigation and debridement within 24 hrs after initial presentation whenever possible. Definitive fixation should be performed after appropriate surgical debridement, and if necessary, a soft tissue coverage plan has been made.
- A minimum of 24 hrs of antibiotics should be administered from the start of the surgical procedure. For highly contaminated wounds, antibiotics may be continued for 72 hrs. Antibiotics for greater than 72 hrs should consider a second operative treatment.
- Patients with open fractures should be evaluated for potential need of a tetanus vaccine. If pt's last booster was 10 years or unknown, a tetanus vaccine should be given.
- Pt's requiring soft tissue coverage associated with open fractures should be covered within 7 days by plastic surgery.

Long bone fx with multiple injuries:

- Long bone fractures should be stabilized as soon as clinically indicated. If patients are under resuscitated or resuscitation efforts are incomplete, other alternatives to definitive fixation need to be considered, (including external fixation, traction, splinting)
- Damage control orthopaedics is utilized for critically ill or injured patients. Damage control interventions should be performed when the need is to preserve life or limb until the patient is resuscitated.

- Damage control orthopedics prioritizes resuscitation and correction of the following: coagulopathy, hypothermia, metabolic derangements, and soft tissue injuries over early definitive surgical repair.
- Time of fixation Timing of fixation is determined based on patient's overall clinical picture, including but not limited to: base deficit, Hb, lactate level, metabolic status, respiratory function, temperature, soft tissue deficits. Long bone definitive fixation will be performed when patient is clinically stable to undergo intramedullary nailing or ORIF; and when soft tissue defects can be addressed.
- Order of fixation Is to be determined by the orthopaedic surgeon, with discussion with the general surgery trauma team and anesthesia. Preferential treatment is given to those injuries to allow for early mobilization (femur fractures), or those being temporized by external fixators and/or traction. Order of fixation is also determined by the overall clinical picture of the patient. This may need to be modified intraoperatively based on the clinical status of the patient, as well as the fracture patterns, patient positioning, and operative procedures that need to be performed.

Geriatric hip fx guidelines:

- Surgical intervention reduction/fixation for geriatric hip fractures should occur within 48 hrs. as clinically indicated.
- Geriatric/Medicine consultation are considered for proper evaluation pre/post op for assistance with medical management and comorbidities.
- Special considerations for the geriatric hip fracture should be considered:
 - VTE prophylaxis
 - Delirium prevention and management (CAM assessment with delirium precautions)
 - Dietitians consult and nutritional supplements.
 - Metabolic Bone disease consult
 - Early mobilization PT/OT rehab services
 - Vision screening and prevention methods
- Refer to Geriatric Trauma Inpatient practice management guideline.

Additional Traumatic Orthopedic Injury Specific Guidelines (located in Trauma handbook):

- Pelvic Fracture Management Guidelines
- Tibial Plateau fracture management
- Hand protocol-open injury
- Hand protocol- closed injury
- Trauma Patients Requiring Orthopedic Surgery DVT prophylaxis for Orthopedic Fractures
- Geriatric Fracture Service (Geri Hospital 6) Admission Criteria
- Trauma Team Expectations with Geriatric Fracture Admission
- Orthopedic Trauma DVT Prophylaxis on Discharge

References:

American College of Surgeons & Orthopedic Trauma Association. (2015, November). ACS

TQIP Best Practices in the Management of Orthopedic Trauma.

https://www.facs.org/media/mkbnhqtw/ortho_guidelines.pdf.

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