

2013 OTA BSFF

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Systemic trauma: evidence based recommendations for fracture fixation in 2013

General Principles

Early fracture fixation should be performed for all major fractures to reduce bleeding from the fracture site, fracture site mobility associated pain.

Open fractures

Early irrigation and debridement should be performed. Pulse lavage is no longer in favor. If more than 2nd degree open, ideally a plastic surgeon should be present. The usage of VAC systems is the rule as is planned second look debridement. Definitive fracture can be performed after initial washout unless there is gross contamination or crush injury. The latter calls for external fixation.

Vascular injuries

They should be taken care of with the vision of expected length of the procedure and the degree of reperfusion injury if an extremity is completely hypoxic. As a rule, in expected long hypoperfusion the method of fixation should be less time consuming, in short hypoperfusion, definitive fracture fixation is the standard of care.

Severe multi system trauma

Recently, the “*Inflammation and the Host Response to Injury Collaborative Research Program*” has gathered the largest available prospective data set on early patient assessment in patients with blunt multiple trauma. They reconfirm that major hemorrhage is associated with high mortality. For clinical assessment of patients, several factors are important, among them pulmonary function, inflammatory status, degree of hemorrhagic shock and the acid base status. Usually, clearance for major surgery is performed by General Surgeons, but careful planning and close cooperation can improve the ability to get to the patient early and perform definitive stabilization of at least some major fractures. The separation between stable, borderline, unstable and in extremis patients is valid. All stable patients should undergo definitive fixations. In Borderline patients that stabilize after volume treatment, the same approach can be used. Borderline patients that do not improve should undergo temporary fixation using external fixators. The same applies for unstable patients. Patients in extremis should be taken to the OR to treat their life threatening hemorrhage, but their fractures should not be stabilized definitively.

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