

One Patient, Two Mangled Limbs: How We Saved Them

Ab Manap, Muhammad Arif Aizuddin; Fernandez, Jonas

Orthopaedic Department, Hospital Putrajaya, Malaysia

INTRODUCTION:

Mangled extremities have always presented a management conundrum. We report management of mangled upper and lower limb extremities in the same patient.

REPORT:

Male, 20s, pain and bleeding of right upper (UL) and lower limbs (LL) after a motor vehicle accident.

On examination: UL: 75% circumferential wound at proximal forearm, extensor muscles cut, segmentally severed ulna nerve and artery and fracture of radius and ulna bones with exposed radiocapitulum joint. Radial pulse palpable. LL: Degloving wound exposing calcaneum till midfoot, lacerations at distal leg. Dorsalis pedis artery not palpable, reduced capillary refill. Images: comminuted radius and ulna fracture with dislocated radiocapitulum joint and comminuted distal tibia and fibula. Computer Tomography Angiogram (CTA) showed non-opacified anterior tibial artery and ulna artery. Mangled Extremity Severity Score (MESS): 8.

Wound exploration, wiring and external fixation of right upper and lower limb done. Intraoperative findings noted segmental laceration of ulna nerve and artery. The anterior tibia artery was intact, good distal flow once fracture deformity corrected. Definitive internal fixation done once soft tissue permitted. At last follow up, elbow flexion/extension 45-90, unable to pronate/supinate, wrist stiff but able to flex fingers.

DISCUSSION:

The Mangled Limb Severity Score offers treatment guide for severe limb injuries, with a score of $8 \geq$ predictive of amputation. However, PROOVIT study group showed that MESS of 8 predicted in-hospital amputation in only 43.2% of patients (1). A scoring system for upper limb injuries are less established. Studies have shown

that MESS is not a good indicator for predicting upper limb amputation (2). Savetsky et al. proposed a novel Mangled Upper Extremity Score (MUES) for predicting amputation, with a score of $6 \leq$ having 82% specificity for salvage success.



Figure 1 (above): UL injuries and initial fixation

Figure 2 (below): LL injuries and initial fixation

CONCLUSION:

Therapeutic advances in treatment of vascular, orthopedic, neurologic and soft tissue injuries have reduced need for primary amputation. Mangled upper and lower limb injuries in a single patient is rare, requires detailed evaluation as they can be salvaged given the right conditions.

REFERENCES:

1. PROOVIT, J Trauma Acute Surg, 2018
2. Shanmuganathan, Indian J Orth, 2008
3. Savetsky, J Recons Surg, 2019