

Cusp of Plastic Surgery and Orthopaedics- the Answer to Post Traumatic Complex limb Reconstruction

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Traumatic injury to extremities following high energy transfer often results in loss to soft tissue along with bony injury. Though salvaging a limb takes a priority following resuscitation, it requires a multidisciplinary approach. Once the patient is received by a trauma unit and the resuscitation is started, the attending Plastic Surgery unit and the Orthopaedics unit should be called upon to evaluate the extremity. Majority of Grade III B injuries require an integrated approach. With both units acting in unison, the best possible outcome for the patient results. After the patient is stabilised, the limb salvage takes a priority. The attending Plastic unit should take the decision for limb reconstruction in consultation with the orthopaedics unit. Debridement is done by Plastic Surgery team and bone fixation by the orthopaedics team. Thereafter decision on limb reconstruction is taken.

Early intervention by a Plastic Surgeon makes room for early aggressive debridement which is the key to decrease the number of procedures and hence morbidity associated with it. The orthopaedics team takes decision regarding fixation of the bone simultaneously. If external fixation is needed, the decision on appropriate position for insertion of pins is taken in consultation with the Plastic Surgery team as it may affect the choice of flap cover. A good bone fixation is the key to early mobilization.

Soft tissue injury may have several components. The injury or loss of skin, subcutaneous tissue, muscle, tendon, nerve and vessel will require reconstruction of the corresponding tissue. It may be done in single or multiple stages. Exposed vital structures require early cover by local, regional or distant soft tissue cover. It has been seen that best outcomes post debridement result when soft tissue cover is given within 72 hours. It results in least chances of infection and flap failure.

Injury to nerve can be acknowledged early by repair. The resulting regeneration and its ultimate outcome depends on the distance between the site of injury and the neuromuscular junction. Late repair can be done by nerve grafts nerve or tendon transfer, depending upon the injury.

Loss or injury to musculotendinous units require repair of tissue or tendon transfer in late cases. Vascular repair or reconstruction is important in salvageability of the limb.

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Nerve injury in lower limb is per se not an absolute indication for amputation. With the best of the reconstructive surgery options, it is possible to give a functional lower limb.

Reconstruction of the bone loss has to be assessed early. It can be reconstructed either by vascularised or non vascularised bone grafts. Lengthening of the bone by Ilizarov method is another option for filling the bone gap. The patient has to be explained at the beginning about the long duration of rehabilitation required to achieve a good result.

The Plastic-ortho cusp provides the best outcomes where complex three dimensional composite reconstruction is required. The ultimate aim of the reconstruction is to provide a pain free stable and sensate limb. This is only possible when a good bony fixation is combined with an early and appropriate soft tissue cover along with reconstruction of the missing components. Though the two are of the busiest units in the hospital and may have difficulty in amalgamating due to time constraints, their combination provides the best care and results in finest of the outcome of the patient both in functional and aesthetic aspects.

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