SUMMARY & CONCLUSION

Soft-tissue defects of limbs commonly occur in the context of high-energy trauma.

Treatment of high-energy lower-extremity trauma with soft-tissue injury remains a formidable problem. These injuries often occur in the multiply injured trauma patient, which makes management even more difficult. Current motor vehicle air bag designs have reduced mortality and the incidence of facial fractures, but do not offer adequate protection of the lower extremities in accidents. The management of lower-extremity trauma has evolved over the last two decades to the point that many extremities that would have required amputation are now routinely salvaged. Treatment requires a team approach with the orthopedic, vascular, and plastic surgeons as part of the team. Soft-tissue management includes micro vascular free tissue transfers, local muscle flaps, and a better understanding of the role of local fasciocutaneous flaps and skin grafts for treatment of defects.

Only a thin layer of skin and subcutaneous tissue covers the tibia along its entire medial border. The paucity of soft tissue contributes to the region's vulnerability and limits the choice of reconstructive options.

Mangled lower extremities require adequate wound-coverage techniques to ensure limb salvage. In addition to the usual problems of providing coverage for exposed bone, tendon or cartilage in an open wound.

Reconstruction is guided by the principle that coverage of a wound should be performed as quickly and efficiently as possible. Once the wound is clean and well vascularized, a reconstructive option is chosen from the reconstructive ladder: (a) allowing the defect to heal by

secondary intention; (b) closing the wound primarily; (c) applying a split- or full-thickness skin graft; (d) rotating or advancing a local random flap; (e) rotating a pedicled flap; (f) transferring a microvascular free flap. Simple coverage methods can be applied (secondary intention, delayed primary closure, or simple skin graft) if there is no tendon, joint, or bone involved**.**

Negative pressure wound therapy (NPWT) is a treatment modality that has become widely adopted for a broad range of wound indications since its advent over 15 years ago. NPWT is a generic technology, which can deliver a broad range of treatment goals.

During the last few years, the strategy for treatment of lower limb soft tissue defects has changed due to the introduction of new models of local flaps. Improvement in the anatomical knowledge on cutaneous, subcutaneous, and intramuscular vessels originating from major vascular axis of the limbs has allowed development of several types of flaps, which today are commonly employed in clinical practice.

Reconstruction of the lower extremity with a free tissue transfer has been accepted as a standard procedure since the 1980s. Free flaps transferred to the lower extremity have been associated with a significant incidence of vascular complications and flap necrosis varying from 15 to 20%.

Recently new methods for reconstruction of soft tissue have been developed using stem cell therapy and gene therapy. These methods are waiting for better results in the future in the treatment of these cases.

This study concluded that there are many traditional and modern methods that can be used according to the case and available methods.