

Microsurgical Reconstruction of Extremities

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Incidence of high tension, high velocity mutilating injuries of extremities following Militancy Trauma is on rise in last few Years, even in Civilian Surgical Practice. These mutilating and some times life threatening injuries with or without neuro-vascular damage are difficult to treat, especially if they are associated with infections like Gas Gangrene.

Since 1970s, Primary reconstruction of mutilating injuries and techniques of tissue transfer have expanded with microsurgical composite tissue transplantation and various Musculo-cutaneous flaps. Jet age and high tech. Precision surgery have changed our philosophy for treatment of high tension, high velocity mutilating injuries of extremities, ranging from incomplete amputations to extensive crushing and degloving of important vessels, nerves, muscles and skeletal system, repair of major blood vessels and nerves and primary or secondary musculo-cutaneous or Osteo-muscular flaps, have profoundly changed the contemporary art of Reconstructive Surgery.

Historically, in 1906, Nobel Laureate Alexis Carrel presented steps of Surgery of Blood Vessel and described many innovative procedures, which are still employed in vascular surgery. In 1960s replantation of amputated digits & extremities were introduced and thereafter the Reconstructive Microsurgery has made tremendous inroads in Surgical Armamentarium.

Various micro-surgical reconstruction, undertaken as primary or secondary procedures in high tension, high velocity mutilating injuries (Militancy Trauma) of extremities are presented in this study. Four patients had life threatening infection (Gas Gangrene), which could be eliminated by an aggressive surgical debridement, antibiotics and hyperbaric oxygen therapy. Early immobilization of the bony skeleton, using varying combination of external Fixator, had permitted an early stabilization of vascularity of the affected part. Primary or secondary micro surgical reconstruction, using muscle or Osteo-muscular flap was performed in all cases. Latissimus dorsi is one of the most versatile flaps being used as muscular, Osteo-muscular, musculo-cutaneous and / or Osteo-musculo-cutaneous flap. A living bone graft, under continuous physiologic stress, gradually regains its normal strength and consolidates to match the host bone at the recipient site. Vascularized fibular graft based on Peroneal vessels and 6th and 7th ribs, based on periosteal blood supply coming through the Serratus anterior muscle, have been used either as composite flap or a symbiotic flap.

Long-term functional results with a follow up ranging between 1-12 are presented here.