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VIEWPOINT

Major Upper Limb Replantation: An Account of Patient Tenacity

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Upper extremity amputations are associated with significant morbidity. Since the report of the first successful replantation of the limb, there have been many replantations of digits, hands, and limbs around the globe.[1] As the amputation level moves proximal to the wrist level, the replantation becomes more complex with higher chances of local and systemic complications owing primarily to the higher muscle bulk.[2] Besides technical difficulties, a lack of rapid medical response teams and poor public awareness about the procedure and part preservation remain significant challenges in developing countries. We report on the composure and perseverance of one such patient, which was instrumental in the successful replantation following a forearm amputation.

A 25-year-old man presented to Trauma services of our hospital with traumatic amputation at the level of upper one-third of the left forearm (Fig. 1). The patient was working on a flour mixing machine when his left forearm metal bracelet (called "kada" in local parlance) got stuck in the sharp rotating blade of the machine. This led to partial amputation of the forearm, with the machine dragging the forearm along with upper torso inside the chamber. Since no one was available in the vicinity for help, the patient applied force in the opposite direction, resulting in the complete amputation of the left forearm. Maintaining his composure, he switched off the machine and picked the amputated part from within the machine chamber and ran into the neighborhood for help (**see Video 1 [online]**, which displays a flour mixing machine with blades moving in the chamber). Riding pillion with his nearby acquaintance on a 2-wheeler with his amputated part in the other hand, the duo rushed to the hospital 11 kilometers away. He was given first aid and was finally shifted to our trauma services within 4 hours, where emergency replantation was started. The amputated part was debrided (Fig. 1B) and explored for the neurovascular structures. Corresponding neurovascular structures were identified in the amputated stump. The microvascular and microneural reconstruction was done after bone shortening of 2.5 cm and internal fixation with square nails. Vascular reconstruction required interpositional vein graft for the radial as well as ulnar artery anastomosis. It was followed by venous reconstruction. End-to-end cephalic and basilic vein anastomosis was done. For superficial dorsal vein, interpositional vein graft was used for a tension-free anastomosis. Median and ulnar nerves were co-apted end to end. Musculotendinous units were also reconstructed. The fasciotomy in hand and the proximal forearm was done as a safeguard against the compartment syndrome. The patient was closely monitored for the signs of reperfusion injury and was successfully discharged with a salvaged limb after 21 days. (**see figure, Supplemental Digital Content 1**, which displays a postoperative salvaged limb after 21 days, **http://links.lww.com/PRSGO/B442**). The patient is currently undergoing physiotherapy and regular follow-up.

Proximal limb amputations result in severe functional and psychological consequences, with significant disturbances in quality of life.[3,4] Here is an example of a patient who stayed calm despite a significant injury and no nearby help available. He never knew about the microvascular aspect of reconstruction but was aware that digits can be sutured back with adequate viability if it can be done early on. With this rudimentary knowledge, he retrieved the amputated part and somehow reached the nearby primary health care facility, where he was referred to our trauma services with appropriate part preservation. We feel that his presence of mind in face of great adversity was the key to timely intervention and successful salvage of this major amputation. However, there remains a need of more awareness programs, both among public and healthcare workers alike, regarding this important aspect of our discipline.

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DISCLOSURE

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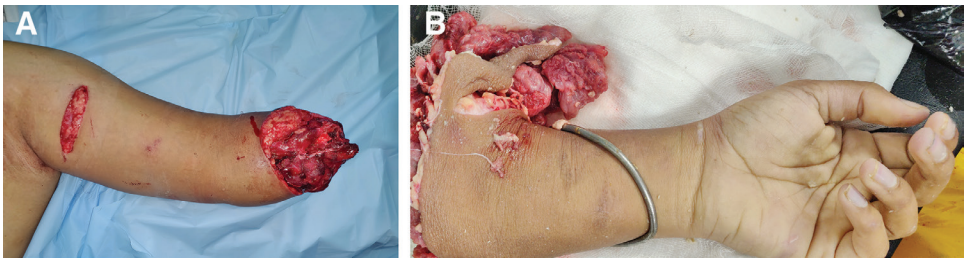

Fig. 1. The upper limb at presentation. A, Amputation stump with the avulsed soft tissues. A laceration of approximately 6 cm is present in the proximal arm. B, Amputated part with avulsed muscles and tendons. Metal bracelet (" Kada") is seen at the wrist.

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