



## A CASE OF HAND REPLANTATION FOLLOWING GUILLOTINE AMPUTATION AT WRIST LEVEL.

**Dr.S.Aram**

Assistant Surgeon, Dept. of Plastic Surgery, GRH, Madurai.

**Dr.K.Geetha\***

Assistant Professor, Institute of Pharmacology, Madurai Medical College, Madurai.  
\*Corresponding Author

**ABSTRACT** Industrial injuries contribute major part of morbidity during the prime earning age. With technological advancement, automated machineries are forming part and parcel of our day to day life. Ours being a developing country, we are half way through in investing fully in the field. So we tend to carry out the tasks with machineries operated by man power. This warrants alertness while handling it on the part of the persons and proper maintenance and installment of appropriate safety measures to avert machinery injuries which is the responsibility of the employer. Hence we are presenting a case history of a 35 year old printing technologist, who had a guillotine amputation of right hand at wrist level, promptly landed in a reconstructive centre. He was operated in stages and with intensive, appropriate physiotherapy, regained his functional capacity satisfactorily.

### KEYWORDS :

#### HAND REPLANT

A 35 year old Engineering graduate working as Designer in a Printing press sustained injury while working in the machine. His right hand got cut at wrist level. He was immediately rushed to the hospital within one hour of injury. As soon as he reached the hospital the resuscitative team, Lab services were put into action. On physical examination, the patient had a pulse rate of 120 per minute and blood pressure of 100/60 mm Hg. The patient was immediately shifted to operating room. On examination it was Guillotine amputation. Bleeding from cut vessels stopped by applying vascular clamps and compression dressing. The amputated part was taken for dissection at once. Radial Artery, Ulnar artery, Median Nerve, Ulnar Nerve, FDP to four fingers, FPL tendon were isolated on volar aspect. On the dorsal aspect, three veins, Radial Nerve, Extensor digitorum & EPL tendons identified. Distal row of carpal bones – Trapezium, Trapezoid, Capitate & Hamate were removed. Meantime Supraclavicular Block was given to the right upper limb, tourniquette applied & dissection started. Skeletal stabilization was achieved by passing 2mm K wire from 3<sup>rd</sup> metacarpal into radius & 5<sup>th</sup> metacarpal into Ulna. Hand was stabilized. All proximal ends of identified structures were dissected out.

Vascular approximating clamps were applied to radial artery & Ulnar artery. Anastomosis done with 10-0 Ethilon. Median & Ulnar N' were repaired with 8-0 Ethilon epineural sutures. FDP to four fingers and FPL were repaired with 3-0 Ethilon by modified Keissler Mason suture as core & cooptation sutures with 7-0 Ethilon TQ and approximating clamps released. Bleeding from dorsal veins were seen. Fingers became pink with capillary filling in the nailbeds. Vascular clamps applied to all the three dorsal veins & anastomosed with 10-0 Ethilon. Extensor tendons were tagged. Hemostasis achieved & skin sutured without tension with 3-0 Ethilon. Immobilisation done with dorsal POP slab. Patient was put on Inj Heparin 5000u stat. appropriate parenteral antibiotics, anti oedema measurs. Viability was closely monitored on hourly basis for the first 24 hours. At the end of it viability of hand was confirmed. On III POD, DT removed. And POP retained. Sutures were removed after 2 weeks and POP after 4 weeks. K wires were also removed at that time. Physiotherapy was initiated. After three months of intensive physiotherapy, flexion of fingers and thumb were achieved satisfactorily. Patient was admitted again and extensor repair planned. On exploration, the extensor muscles were retracted. The gap was more than 7cm. Fascia Lata graft harvested from Right thigh. It was split into 5 divisions. One was given to FPL & others for Extensor digitorum tendons. After four weeks of immobilization, physiotherapy was restarted augmented by electrical stimulation to intrinsic. After three months of extensor repair patient was observed to have a reasonable protective sensory recovery as well as flexion & extension of all fingers and wrist.

#### DAY OF INJURY



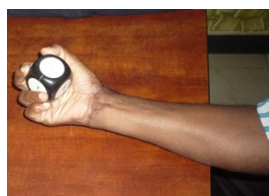
#### DAY-3



#### AFTER 6 MONTHS WITH INTENSIVE PHYSIOTHERAPY



#### AFTER 6 MONTHS WITH INTENSIVE PHYSIOTHERAPY



#### DISCUSSION:

Machinery injuries are common in developing countries as ours.

Various occupations like printing technology, packaging industries, saw mills, Lathe works, cardboard industries, Jinning & spinning mills are functioning with cutting machines operated by manpower, but the list of other objects includes knives, stones, sharpened wooden sticks, screwdrivers, nails, spikes, iron rods, arrows, pencils, ice picks, chopsticks, scissors.<sup>(1),(2),(3)</sup>

In many families they will be the sole earning members and the morbidity they face following such incidences is grave. This emphasizes the absolute need for implementation of safety alarms as well as sensors for automatic switching off if such untoward incidence happens. Few industries forgo such stringent measures overcoming the safety of the workers to make more productivity.

Another concern in such injuries is that the morbidity they face following recovery. The duration of convalescence they have to undergo & physiotherapy support to make the hand functional both in motor & sensory aspect. Adding to the brunt is lack of awareness to reach a competent centre for the possible replantation. Hence this case is presented to create awareness among machinery handlers both employers as well as employees for implementing safety measures & to follow them. And the golden hour of vascular survival should not be missed at any cost in all possible injuries, the method to transfer the amputated part, significance & knowledge of such replants to be created through attainable ways & means.

#### REFERENCES :

1. Seex K, Koppel D, Fitzpatrick M, Pyott A. Trans-orbital penetrating head injury with a door key. *J Craniomaxillofac Surg* 1997;25:353-5
2. Kelly DF, Nikas DL, Becker DP. Diagnosis and treatment of moderate and severe head injuries in adults. In Youmans JR, ed. *Neurological Surgery*. 4 th ed. Philadelphia: WB Saunders; 1996. p. 1618-718.
3. Bhaganagare A, Nadkarni T, Goel A. Penetrating craniocerebral injury with nails: Case report. *Indian Journal of Neurotrauma (IJNT)* 2007;4:63-4.