



## Index Finger Pollicization For Traumatic Thumb Amputation

### Plastic Surgery

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### ABSTRACT

Pollicization is a hand surgery technique which substitutes a functioning finger for a deficient thumb. The most common indication is thumb hypoplasia with absence or instability of the carpometacarpal joint. However, there are additional causes that may negate thumb function, such as trauma, macrodactyly, multi-fingered hand and a mirror hand.

We present a rare case of 14 year old male with a traumatic loss of left thumb and loss of index finger extensors, 4 years back in a crush injury. Index finger was pollicized & extensor tendons were reconstructed improving the function and aesthetics of the hand.

### KEYWORDS:

Amputated thumb, trauma, pollicization, index finger .

### CASE REPORT :

A 14 years old male presented with traumatic loss of left hand thumb in a crush injury 4 years back while travelling on a bike with his father they met with a road traffic accident which lead to a degloving injury and ultimately lead to the necrosis of the thumb and loss of extensors of the index finger of the left hand . Patient was at that time operated and amputation of the thumb was done followed by skin grafting over the left hand. Now patient presented with difficulty to grasp/ hold things and performing daily activities with the left hand. This lead to making him slow in doing daily activities as compared to other children of his age group which lead to an inferiority complex in the child and effected him psychologically to. The deformity of his hand made him shy of presenting himself in front of others which lead to making the child an introvert and reduced his communication skills.

On examination, the thumb was absent and there was malunion of index finger metacarpal along with loss of index extensors on dorsum of hand. Rest fingers were functionally normal.

Intra operatively first we carried out the division of intra metatarsal ligaments, after which we transferred the index finger with head of metatarsal and intact neurovascular pedicle, followed by positioning of index finger as thumb with the extensors of the thumb

### PRE OPERATIVE PICTURES



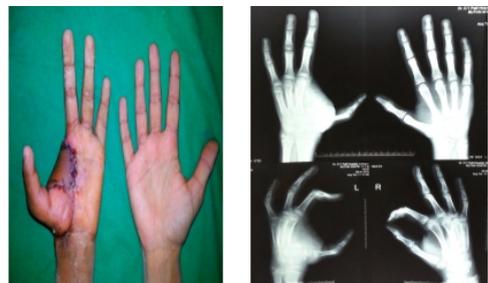
I.e : Index finger was pollicized using the head of 2<sup>nd</sup> metacarpal to replace absent trapezium and using the previous cut thumb extensors were used to reconstruct and achieve neo thumb extension. The first web space was reconstructed with a groin flap and detachment of the hand from the groin flap was done after 3

weeks. Improvement in functioning of left hand enabling him to do his day to day activities with ease and also enhancing the aesthetics of the hand.

### INTRA OPERATIVE PICTURES



### POST OPERATIVE PICTURES



### DISCUSSION :-

Children with congenital absence or marked hypoplasia of the thumb usually are very skill full in the use of their hands . Despite this natural dexterity , the important pulp to pulp pinch is missing. Pollicization is a hand surgery technique in which a thumb is created from an existing finger. Typically this consists of surgically migrating the index finger to the position of the thumb in patients who have lost their thumb traumatically or who are born without a functional thumb. As well as causes that may negate thumb function, such as macrodactyly, multi-fingered hand, and a mirror hand. The technique of pollicization represents a consolidation of contributions from surgeons over the last 100 years. A meticulous stepwise approach from incision to closure is necessary to optimize

outcome. This procedure came in to existence after the thalidomide tragedy after which many children were born with a thumb malformation . The main function of the thumb is apposition without which the hand cannot grasp and do other functions hence patients with malformation of fingers cannot do routine work and post pollicization procedure patients are able to carry out normal functions and hence this procedure is very important in malformations of thumb and traumatic injuries to the thumb.



**4 MONTHS POST PROCEDURE**