Interesting Case Series

Fingertip Amputation Injury

Edward Hahn Jr, MD, and Matthew Trovato, MD

New Jersey Medical School, University of Medicine and Dentistry, Newark, NJ 07103

Correspondence: hahned@umdnj.edu

DESCRIPTION

A 24-year-old man presented with an amputation injury to the fingertip of the middle finger of his left hand. The direction of injury was transverse and complicated by exposed bone.

NEXT

QUESTIONS

1. **How do the geometry of the injury and the age of the patient influence treatment options?**
2. **What are the treatment options for fingertip injuries?**
3. **What are the primary goals of surgical repair for this patient's injury?**
4. **What is the preferred method for repair of this patient's injury?**

DISCUSSION

Fingertip injuries account for 45% of all hand injuries. The middle finger is the most common finger injured. Fingertip injuries can have a significant impact upon the patient as a result of either loss of work, loss of sensation, and/or unsightly deformity.

The goals for repair of fingertip injuries include: preservation of fingertip sensation, limiting the aesthetic insult, and maintaining a painless digit. The optimal treatment is selected on the basis of the geometry of the injury, the amount of tissue involved, the involvement of bone, the particular digit involved, and the age of the patient. Injuries, in which bone is not involved and is limited to superficial soft-tissue loss, will best heal by secondary intention. An injury that involves more than superficial soft-tissue loss is best treated with a primary surgical closure technique. Primary closure treatment options include skin graft, V-Y flap, volar flap advancement, bipedicle dorsal flap, crossfinger flap, and thenar flap.

This young adult's injury was complicated by exposed bone with significant volar and dorsal soft-tissue loss. Therefore, the patient underwent the preferred thenar flap repair. Compared to other surgical options, the thenar flap transfers the greatest amount of soft tissue and uniquely does this utilizing an inconspicuous donor site. The flap should be designed with a proximally based pedicle that is positioned high on the thenar eminence. The width of the flap must be 1.5 times the diameter of the digit to provide the appropriate curvature of the fingertip. It is preferred to maintain a hand position with the metacarpophalangeal joints maximally flexed and the proximal interphalangeal joints minimally flexed. A complication associated with the thenar flap is digit contraction and is especially prevalent in patients older than 40 years. Digit contraction may be avoided if the pedicle is severed within 10 to 14 days and promptly followed by physical therapy. Contraction risk remains elevated in patients older than 40 years, despite these preventative measures.

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