

Primary Thumb Reconstruction in a Mutilated Hand



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KEYWORDS

• Ectopic replantation • Toe-to-hand transfer • Partial thumb defects • Mutilating injuries

KEY POINTS

- Thumb reconstruction is the priority in any reconstructive plan.
- Toe transfer is an effective method of thumb reconstruction.
- Trim toe transfer (from great toe) gives better result than second toe transfer.
- Reducing the donor site morbidity by transfer of second toe to the harvested great toe site increases patient satisfaction and acceptance of the procedure.
- Conventional techniques like pollicization and Littler neurovascular island flap can be helpful in patients who decline toe transfer or do not have toes.

INTRODUCTION

Without doubt, the most effective way of restoring the amputated thumb function is by replanting it. Any major effort is justifiable to do so. This article discusses succinctly the classic alternatives and expends more time on others. **Box 1** summarizes the ideal methods (the first being replantation, not discussed here) and contains the topics dealt with in this article.

Ectopic Banking

Ectopic banking was first described by Marco Godina.¹ It consists of temporarily reconnecting an amputated or devascularized element in a nonanatomic position. The main reasons for doing so are in cases where there is concomitant major soft tissue damage around the thumb or if the patient is critically ill, and thus major surgery is not wise. The rationale to indicate ectopic

banking in the former case is that debridement can be staged, and cover can be delayed, while in the latter, surgery can be carried out expeditiously and under regional anesthesia. Most authors have found the ideal place for ectopic replantation as the contralateral forearm.² Generally, after several weeks, the digit is elevated in continuity with the radial artery and local veins, thus preserving the previous anastomoses, and planted in the proper location. In most published cases, a flap in continuity, or a flap from another location, is needed concomitantly. This is so, because as stated previously, the major indication for ectopic replantation is precisely an associated soft tissue defect.

The authors must confess that their personal experience with ectopic banking of digits is nil. This is so, because although there is an indication for resorting to ectopic replantation in the fatidic

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Box 1**Summary of the methods the authors use to deal with thumb amputation**

- **Replantation**
- Ectopic banking
- **Ectopic replantation (spare parts)**
- Intercalated defects:
 - **Partial toe transfer**
- Terminal defects:
 - Littler flap
 - Pollicization
 - **Toe-to-hand transfer**

The authors' preferred methods are in bold.

coincidence of a major soft tissue defect around the amputated thumb and a critically ill patient, the authors believe most other cases can be solved by means of combining a (flow-through) free flap at the same time as the replantation. Despite the fact that at first glance it may be considered as a nonsensical venture, thinking objectively, it is not. The flap permits one to skip the area of damage in the thumb and proximal stump, allowing much faster and safer anastomoses, as the surgeon can much more radically debride damaged tissues. The authors' preferred flap is the dorsalis pedis (**Fig. 1**), but the contralateral radial forearm flap (perhaps the only indication the authors have found for using this flap presently) is even better.

Lesser catastrophic soft tissue losses can be dealt by local flaps. For dorsal defects, the authors

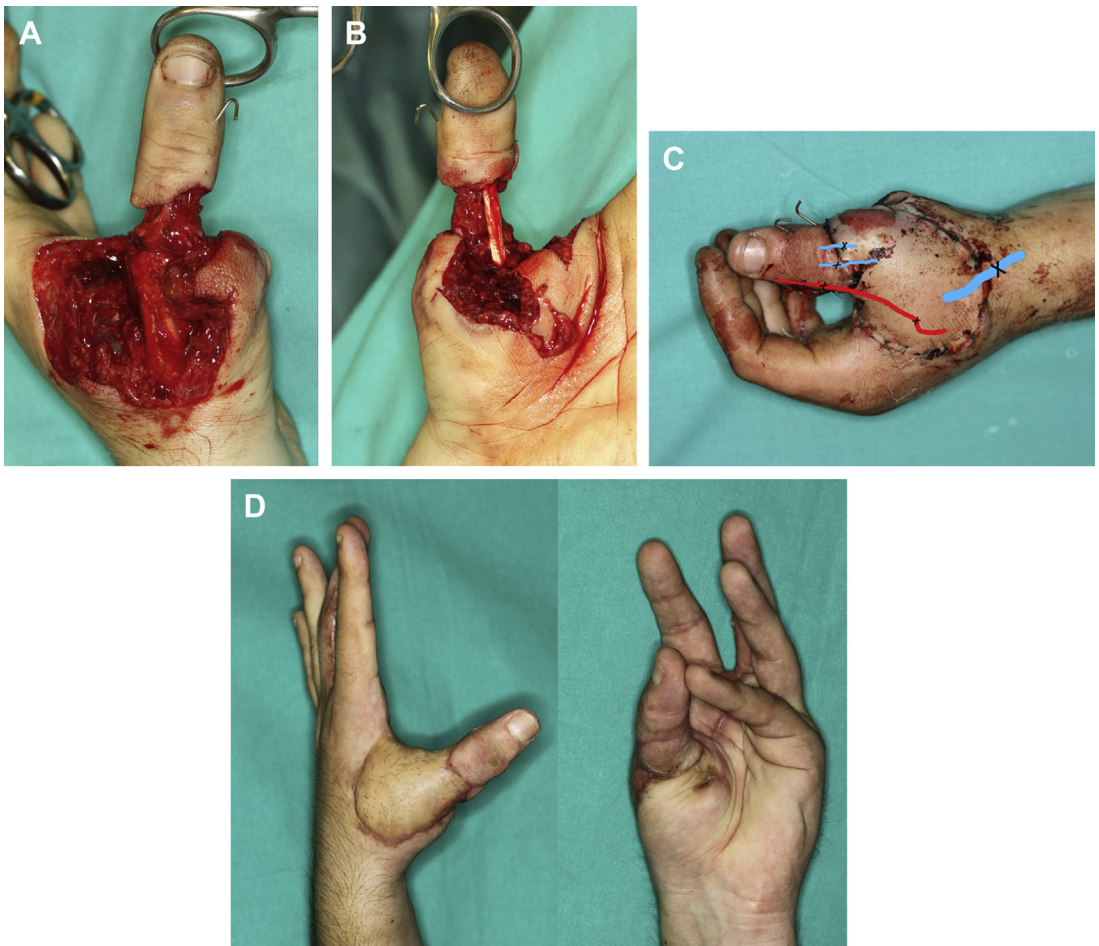


Fig. 1. (A) Status after debridement and fixation of the thumb in its position demonstrating massive soft tissue defect. (B) The dorsalis pedis flap has been used as an arterial and vein carrier. (C) Function 8 weeks after the accident. (D) Result. (Copyright © 2016 Dr Piñal.)

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