

Distal Fingertip Replantation without Skeletal Fixation

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ABSTRACT

The replantation of fingertip amputation (through the nail bed) requires repair of the artery and vein on the palmar side. These structures are present in different planes, with the artery being deeper and the veins superficial. The authors believe that vascular repair in such cases is facilitated by stabilization of the amputated part by nail-bed repair alone. This provides a certain degree of flexibility, which allows for easier placement of clamps in the limited space available. Although Kirschner wires were not used for bony fixation, bony union was achieved in all five cases in which this technique was used.

KEYWORDS: Fingertip replant, skeleton fixation, technique

Debridement, identification of the vessels, skeletal stabilization, and vessel and nerve repair are the standard steps in replantation of fingertips.^{1,2} Skeletal fixation in fingertip amputations is usually done with Kirschner wire. In these amputations, both the artery and the vein need to be repaired on the palmar side. The artery is placed more deeply and the veins are found in the sub-dermal plane. Following rigid fixation of the skeleton with K-wire, there is usually very little space available for introducing the approximating clamps. To provide better access, bigger flaps need to be raised. This can be avoided by stabilizing the distal part by nail-bed repair alone. This provides a certain degree of flexibility, which allows easier placement of clamps. If greater stability is desired, it can easily be achieved by taking one or two skin sutures along the lateral margin during replantation.

PATIENT AND METHOD

As one representative of our five cases, a 56-year-old businessman sustained total amputation of the left ring

finger through the base of the nail bed following a door crush injury (Figs. 1, 2). The parts were debrided, and the vessels identified and tagged. The amputated part was attached to the stump by suturing the nail bed to the sulcus, using horizontal mattress sutures. No K-wire was used. The finger was then turned over for vessel anastomosis (Figs. 3, 4). Since the skeleton was not rigidly fixed, a certain degree of flexibility is available which permits easy introduction of the approximating clamps. The arteries are repaired and, with the clamps in situ, the veins and nerves are repaired (Fig. 4B), following which all the clamps are removed. The skin is loosely approximated. The replant was successful. When reviewed 3 years later, the patient had good bony union and an excellent cosmetic result (Figs. 5, 6).

DISCUSSION

We have used a technique of “nail-bed repair” only for stabilization of the amputated part prior to vessel repair in five cases of fingertip amputation. All showed

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