REFERENCES


Treatment and prevention of “hook nail” deformity with anatomic correlation

The hook nail deformity is a relatively common complication after fingertip amputation. It can be corrected or prevented with a carefully performed surgical procedure. The nail plate is removed. The redundant nail bed that is folded over the tip of the terminal phalanx is carefully removed with an additional 2 mm that is supported by the terminal phalanx so that wound healing will not draw the nail bed over the tip of the phalanx again. The fingertip is then resurfaced by a V-Y advancement flap, with precautions taken to avoid all tension in the flap. (J Hand Surg 1993;18A:617-20.)

V. P. Kumar, FRCS, and K. Satku, FRCS, Singapore, Republic of Singapore
Fig. 1. A, Longitudinal section of distal segment of finger showing nail bed (black) resting entirely on terminal phalanx (striped). B, Line diagram of section shown in A.

Fig. 2. Diagram showing redundant nail bed folded over tip of fractured phalanx. The development of the V-Y advancement flap is also shown.
"Hook nail" deformity

Fig. 3. Diagram showing sufficient resection of nail bed and local advancement flap in reconstruction of pulp defect.

Fig. 4. A, X-ray film showing traumatic loss of tip of terminal phalanx of index finger in patient with fingertip injury. B, Same digit 4 months after reconstruction by described technique.
tion studies. Mere pulp support must necessarily result in recurrence of the hook nail deformity when the pulp fails to provide a rigid support. Indeed, the original article by Atasoy et al.\(^2\) shows this recurrence in one example followed up for 3 years, although the appearance of the nail is satisfactory in their second example, which had only a 6-month follow-up.

**Technique**

We propose a simple alternative procedure for the hook nail that adheres to anatomic principles. The nail is carefully removed. The excess nail bed that projects beyond the remnant of the terminal phalanx and up to 2 mm of the part supported by the terminal phalanx is sharply excised (Fig. 3) to provide for subsequent contracture of the pulp that may draw the remnant nail bed over the tip of the phalanx. The pulp may be reconstructed simply with a local V-Y advancement flap (Figs. 2 and 3) without the need for a cross-finger flap, which may compromise fingertip sensation and may be associated with complications at the donor site. Precautions are taken to eliminate all tension in the advanced flap. The flap is adequately mobilized and advanced to completely cover the bare terminal phalanx. It is then pinned to the tip of the phalanx. Sutures between the flap and the nail bed are also avoided. These additional steps prevent the nail bed from being drawn over the remnant terminal phalanx during wound healing. As long as the nail bed does not come over the tip of the terminal phalanx, the hook nail deformity will not recur.

We also propose a simple emergency room procedure to prevent the hook nail deformity after fingertip injuries. The redundant nail bed over the lost portion of the terminal phalanx is resected along with up to 2 mm more of nail bed supported by the phalanx to make up for pulp contracture. The fingertip is then resurfaced by standard techniques.

The drawback of our technique will be a nail that is shorter than normal. The advantages include simplicity, normal fingertip sensation, minimal morbidity, and absence of donor site complications.

We undertook this study and proposed this technique after seeing several patients with clean-cut amputations of the fingertips in which both the nail bed and the phalanx were lost at the same level. With our technique, we were able to achieve a reasonably esthetic result (Fig. 4).

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**REFERENCES**