

The Treatment for Extra Fingers

Running Title: Polydactylia

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Abstract

To demonstrate the techniques used for hand and feet malformations, characterized by multiples digits, and calling attention to the need for attaining normal function of the thumb and index fingers.

Keywords: extra thumbs; polydactylia

Introduction and Objectives

To demonstrate the technique and value of pollicization of the index finger, through the presentation of an extremely rare case of hereditary, bilateral, seven fingers in the hands and six fingers in the feet.

Case Presentation

4 years old caucasian girl, with a bifid thumb plus more 5 fingers in both hands and 6 fingers in both feet. (fig1) Her mother had exactly the same malformations but had never been treated (fig 2).



Figure 1: Child's hands.



Figure 2: Mother's hands.

The operation of pollicization was performed in both hands, under general anesthesia in the same operative session. As a first step, the flap to reconstitute the first interdigital web was drawn. Then the thumb was excised (preserving the adductor muscles) and the

more radial remaining finger was individualized and isolated (fig 3), particular care being taken to preserve the neurovascular bundles and dorsal veins. The intrinsic muscles of the “new index” finger and their tendons were identified (Fig 4), as well as the

transverse carpal ligament, which was sectioned. That was followed by resection of the metacarpo-falangeal joint, with axial rotation and bending of the distal portion of the second phalanx, joined to the stump of the metacarpal bone, to re-establish opponents in the “neo thumb” (with fixation with Kirschner wires). The extrinsic and intrinsic muscles were reattached, as well as the adductor, nothing being done to the flexor/extensor tendons that tend to adapt to the new

conditions. The skin was sutured, checking carefully the circulation, what led to the removal of a few constricting stitches in one of the “new thumbs” to correct mild distal cyanosis (fig 5). The Kirchner wires were removed and rehabilitation started. In the feet the second rays were removed at the same general anesthesia (Fig 6). The feet passed to be normal looking.



Figure 3: Dorsal view of the skin incision, for removing the double thumb.

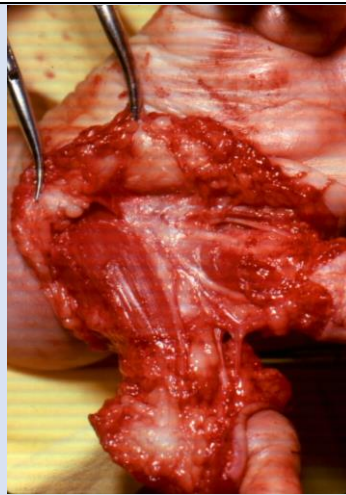


Figure 4: Palmar view of the open surgical wound, showing namely the adductor muscle and the neurovascular bundle, for the new thumb and index fingers.



Figure 5: left hand im the postoperative period.

Results and discussion

In a similar Patient, the new thumbs have almost normal appearance and function is excellent (fig 7, 8 and 9) The operation should not be performed until the hand bones are strong enough to hold the

Kirschner wires and the neuro-vascular bundles can be easily individualized, although it should not be unduly postponed, in order to ease rehabilitation.



Figure 6: Removal of the 2nd finger in the foot.



Figure 7: Hands at early adulthood.



Figure 8: Hands pinching normally.

Conclusions

Policyzation is the treatment of choice for extra fingers in the hands and should be performed as early as safe.

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Consent: Done by the Parents (the mother had a similar malformation...!).

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