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Interdigital Butterfly Flap in the Hand (The Double-Opposing Z-Plasty)*

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ABSTRACT: In selected cases of palmar contracture at the base of fingers associated with webbing, a well designed interdigital butterfly flap may be used to correct the webbing and provide release of the contracture in both a longitudinal and transverse axis.

The choice of tissue for resurfacing the skin defect following a release of scar contracture of the hand is vital to the function of the hand, since the scars of reconstructive surgery should not restrict mobility.

While skin grafts or pedicle flaps may be required in some cases, use of a local flap, if possible, should be the procedure of choice. Then there is no donor site to deal with and the incisions should heal primarily with good texture, resilience, and stability.

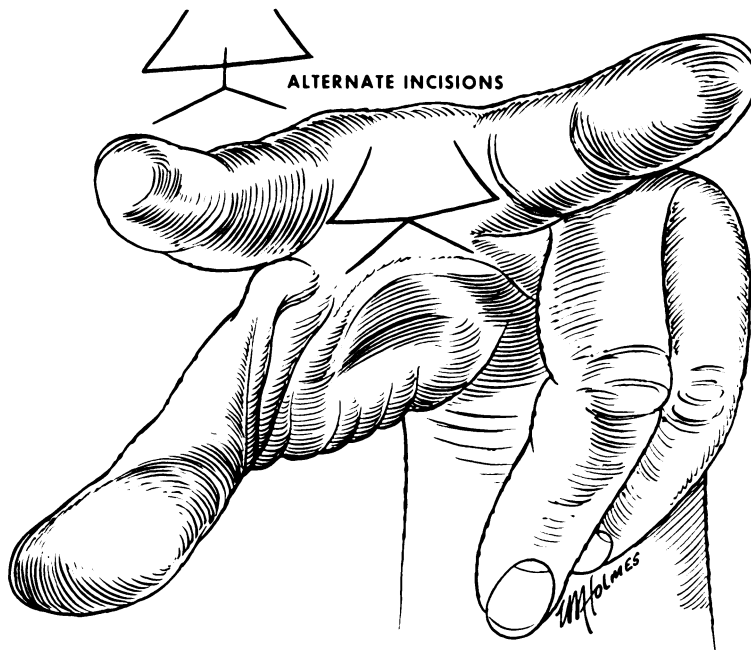


FIG. 1

The interdigital butterfly flap described in this paper applies to the metacarpophalangeal-joint region in the palm and is used for correction of a deficiency of

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the volar skin and webbing where minor contractures can be released in both the longitudinal and transverse directions. The lesion may be a congenital or cicatricial webbing between the fingers, involving the palmar skin. The double-opposing z-plasty (Fig. 1) may also be used for webbing of the thumb or for contracting bands on other surfaces of the body, such as epicanthal folds and axillae.

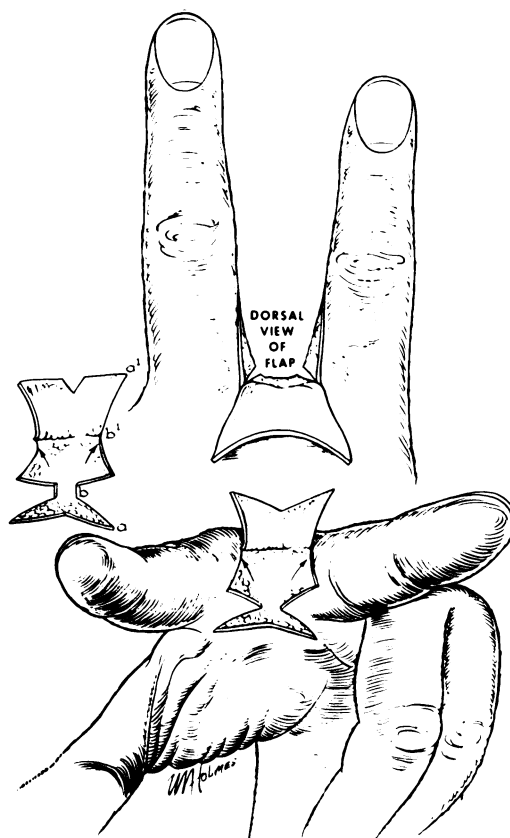


FIG. 2

Procedure

The double-opposing triangular flap (Fig. 1) with common pedicle is elevated on the lateral aspect of adjacent digits with a common pedicle based on the dorsal web. On the palmar surface, an inverted wide angle V or inverted Y incision is made depending on the depth of the web and the amount of release of tissue required (Fig. 2). These incisions may meet from adjacent webs. The defect created is then covered by the interdigitation of the butterfly flap by placing each triangular flap obliquely into the defect of the palm (Fig. 3). The donor defects on the lateral aspect of the digits are closed by completing the transposition of the triangular flaps.

Since the senior author (D.T.S.) first designed the interdigital butterfly flap for the release of burn-wound contracture (Fig. 4), we have used it for skin contracture due to avulsion injury as well. In surgical treatment of Dupuytren's contracture it is useful in release of adduction contracture with webbing of the fingers following a resection of interdigital ligaments and may be combined with other z-plasty procedures.

The procedure deepens the web while releasing contracture in both transverse and vertical directions and is applicable for congenital complete or incomplete syndactyly.

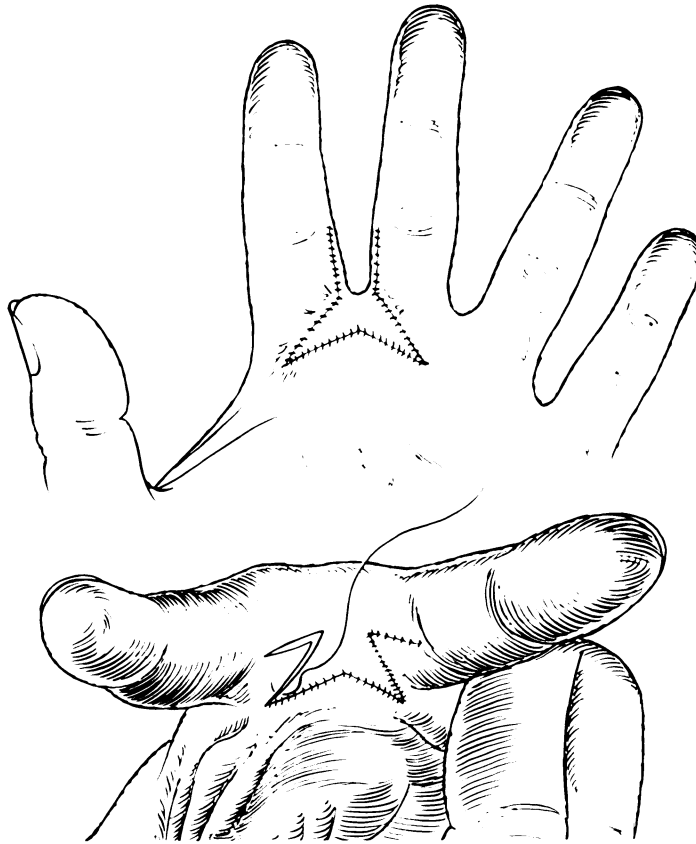


FIG. 3

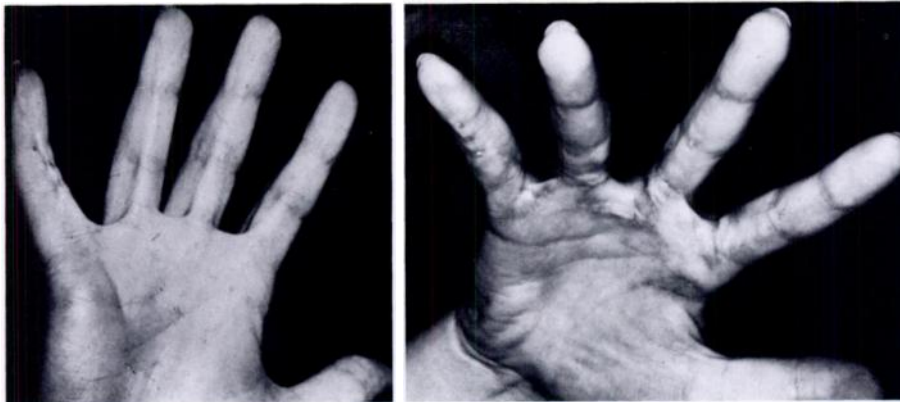


FIG. 4

A reverse butterfly flap can also correct a dorsal surface defect or web from burn scar contracture.

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