



Reverse W-M plasty in the repair of congenital syndactyly: a new method

N. Karacaoğlan, H. Velidedeoğlu, B. Çiçekçi, N. Bozdoğan, Ü. Şahin and Y. Türkgüven

Department of Plastic and Reconstructive Surgery, Social Insurance Association Hospital of Ankara, Ankara, Turkey

SUMMARY. A W-M plasty is described as a means of establishing an interdigital web in the repair of congenital syndactyly. 25 cases of congenital syndactyly were operated using this method. The web created did not advance distally, nor cause a transverse scar-band.

Syndactyly occurs once in around every 2500 births and should be corrected before the child reaches school age. If the syndactyly is complex and the adherent fingers distort each other, earlier interventions are indicated.

Several surgical methods are used for syndactyly repairs. Though the surgical objectives are the same, differences exist in reconstruction of the interdigital web.¹⁻⁵

Materials and method

We have used a W-M plasty method from 1989-1992 in 25 patients with congenital syndactyly at our clinic. They were aged from 2-14 years at operation (average: 4.4 years), and were followed up from 6 months to 3 years.

In this method, a dorsal triangular flap with its base

at the metacarpophalangeal joint level extending distally two thirds of the length of the proximal phalanx is incised. This flap is then divided into two to obtain two separate flaps (Fig. 1). Then a similar flap is incised on the palmar side of the hand, with its base at the proximal crease and of the same length as the dorsal triangular flap (Fig. 2).

The fingers are separated by classical zigzag incisions or Skoog's method,⁶ care being taken to protect the neurovascular structures. The two triangular flaps from the dorsal and the palmar side are interdigitated to create the web (Fig. 3).

The distal part of the radial aspect in the interdigital cleft is repaired using the flaps, while the other exposed surfaces are repaired by full-thickness or thick split-thickness grafts.

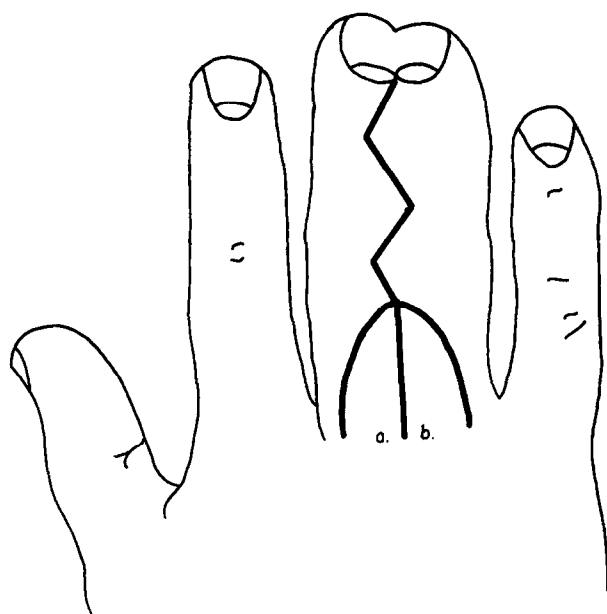


Fig. 1

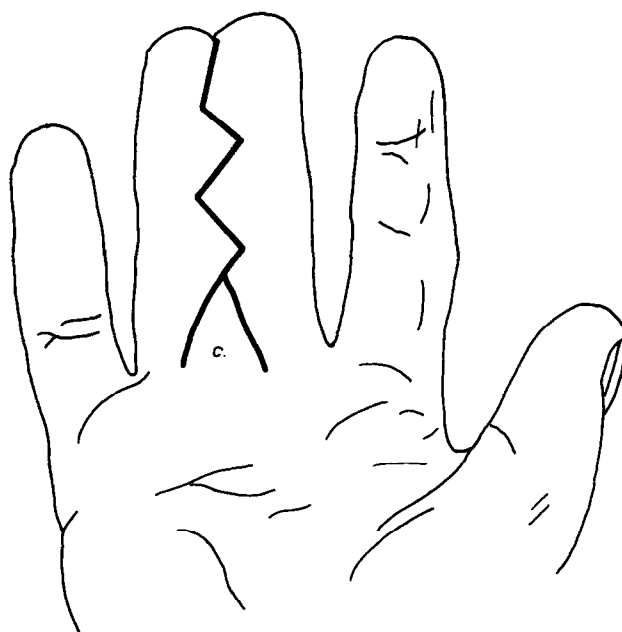


Fig. 2

Figure 1—Planning-dorsal aspect (flap a and flap b). Figure 2—Planning-palmar aspect (flap c).

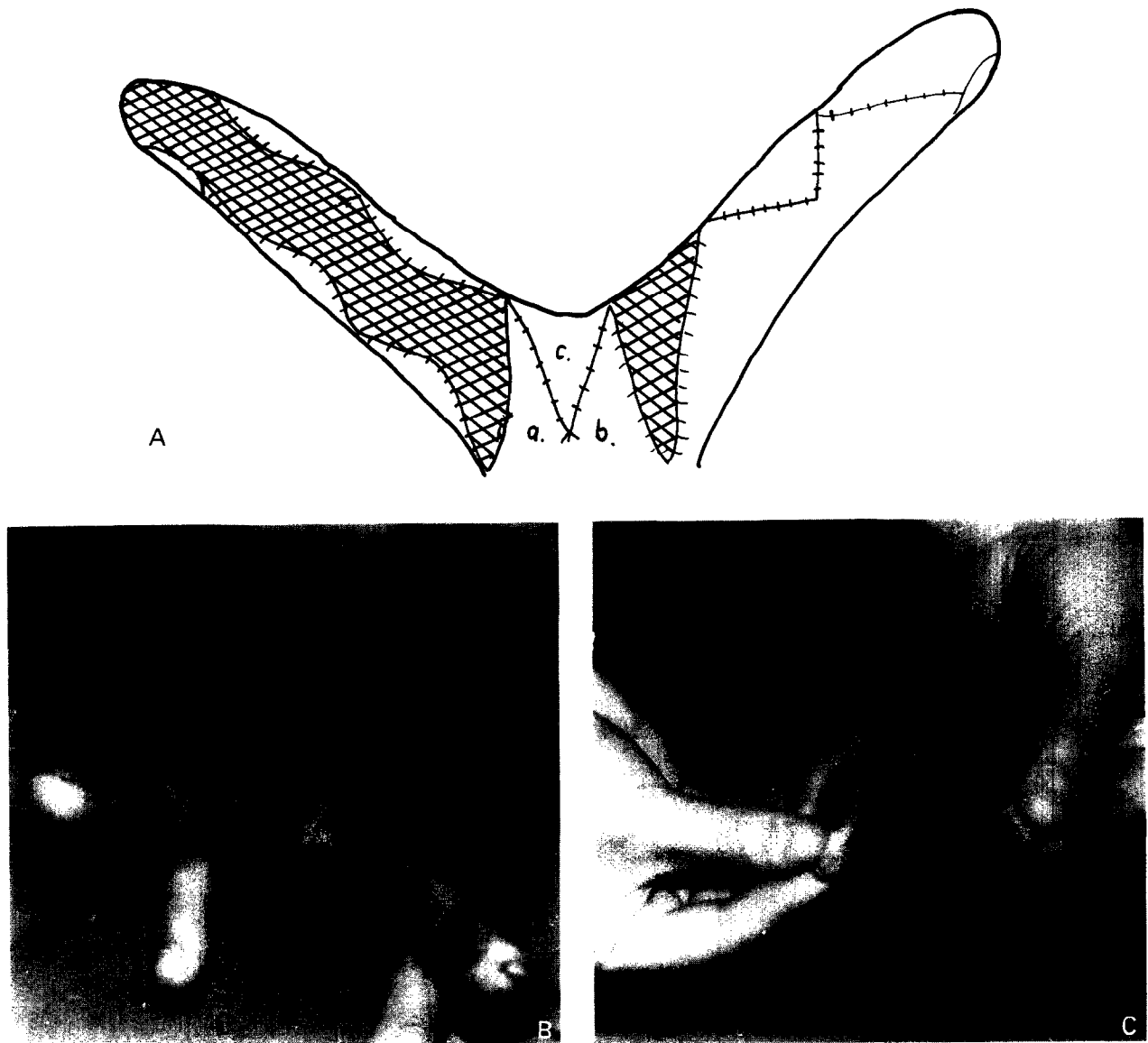


Fig. 3

Figure 3—(A) Semi-diagrammatic completed repair. (B) Suturing completed (in complete syndactyly). (C) 1 year after operation.

Results

Linear contractures occurred on the edges of grafts in two cases. These contracture bands required release by Z plasty. No other complications were encountered. The reconstructed web did not advance distally and remained satisfactory in appearance and function. No transverse webbing was seen.

Discussion

The problems occurring after syndactyly repair require secondary surgical operations. The most important of them is web creep (a recurrence of the webbing).

Toledo and Ger reported web recurrence after repairs using the Cronin and Bauer methods.⁷

Percival and Sykes⁸ reviewed 100 patients with 218 surgically treated syndactylies operated upon over a

10-year period. They constructed the web using three different methods. The base of the web was constructed using local skin flaps, based either dorsally or ventrally, as quadrilateral flaps,¹ interdigitating dorsal and ventral flaps,² or dorsal horseshoe flaps.⁹ They reported 22% recurrence of webbing. The incidence of web creep was similar for all three techniques.⁸

In another study, one partial web recurrence was reported in 22 patients.¹⁰

Standard methods of syndactyly correction still carry a significant failure rate.

We have not observed web creep and transverse webbing in the W-M plasty method. Secondary repair has not been requested, except in two patients who had linear contractures on the edges of grafts. The non-occurrence of web creep and transverse webbing is due to the fact that the three separate triangular flaps are interdigitated in the form of a W, so any potential future web creep and transverse webbing are minimized by the W-M plasty.

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The Authors

N. Karacaoğlan, Assistant professor, Division of Plastic and Reconstructive Surgery, Ondokuzmayıs University, Samsun, Turkey
H. Velidedeoğlu, Consultant Plastic Surgeon
B. Çiçekçi, Consultant Plastic Surgeon
N. Bozdoğan, Consultant Plastic Surgeon
U. Şahin, Assistant in Plastic Surgery
Y. Türkgüven, Chief
 Department of Plastic and Reconstructive Surgery, Social Insurance Association Hospital of Ankara, Ankara, Turkey.

Requests for reprints to: Dr. Naci Karacaoğlan, Şair Baki sok. Kılıç apt. No. 7/1, Yukarıyancı, Ankara, Turkey.

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