

Extended use of the Mustardé dancing man procedure

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Summary—Webs other than epicanthal folds can be corrected by the Mustardé "dancing man" procedure. A series of 20 patients is presented in whom this method has been used to correct either minor degrees of congenital syndactyly or burn scar contractures in fingers.

Vertical skin deficiency causing an epicanthal fold combined with lateral displacement of the medial canthus led to Mustardé (1963) developing the "jumping man" procedure for correction of this deformity. The technique involves advancement of the medial canthus and obliteration of the epicanthal fold by paired transposition flaps.

Minor congenital syndactyly represents the analogous situation of tissue deficiency as does burn scar web contracture. Correction can be carried out by skin grafts, which tend to contract with recurrence of the problem, or by local flaps. Simple Z-plasty is successful in minor scar contractures, and can be improved by the four flap modification of Woolf and Broadbent (1972). Shaw *et al.* (1973) described a double-opposing Z-plasty and recommended its use for volar, congenital or Dupuytren's contractures but added that it could be inverted for dorsal scarring secondary to burns. The double Z-plasty and Y-V advancement described by Hirschowitz *et al.* (1975) is identical in principle to the Mustardé operation but with less advancement. The VM-plasty (Alexander *et al.*, 1982) uses narrow flaps and requires some sacrifice of tissue (Fig. 1).

We have used a modification of Mustardé's technique for the correction of finger-web contractures for the last 15 years.

Materials and method

Twenty-seven webs in 20 patients were operated on by this method during the 10-year period between 1972 and 1982. Congenital syndactyly was corrected in 11 patients (14 webs) and burn scar contractures accounted for the remaining nine patients (13 webs). The age range at operation for congenital cases was between 2 and 17 years with an average of 7.4 compared with 5 to 24 (average 11.2) for the burns. The distribution of webs is outlined in the

Table. Small split skin grafts were required as an additional procedure in four cases when flaps alone would not provide sufficient tissue to deepen a web (three congenital and one burn).

The standard procedure for correction of epicanthal folds as described by Mustardé (1963) requires some minor modifications when used on finger webs. The desired depth of web is determined visually and "A" marked proximal to this on the dorsal skin (Figs 1 and 2A). Point "B" is on the volar edge of the existing web. The flaps are drawn with all sides of equal length and not as described by Mustardé. The angle of the triangular flap in eye corrections is determined by the lid margins but should be approximately 60° when applied to finger webs (Fig. 2B). The flaps are cut and transpose easily on separating the fingers (Fig. 2C). The suture materials and dressings are those used routinely in the unit.

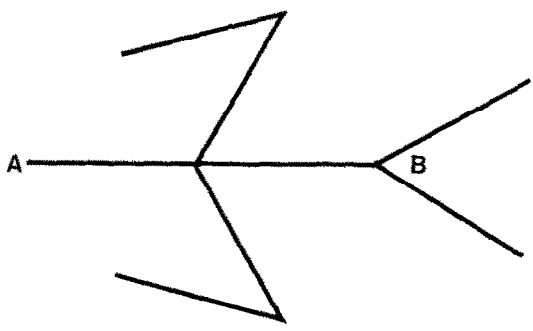
Results

Results were described in the hospital case notes at discharge from routine review as being good/satisfactory following 23 of the procedures and worthwhile in one congenital syndactyly. Information was not available for two of the congenital webs and one burn case. No patient required secondary operations on a web corrected by the Mustardé technique.

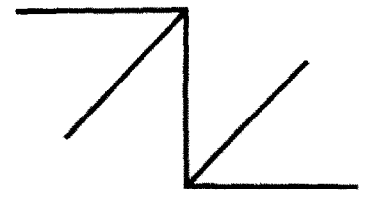
Table 1 Distribution of operations indicating cause and web.

	Thumb	Index	Middle	Ring	Little
Congenital	2	0	8		4
Burn	1	6		1	4

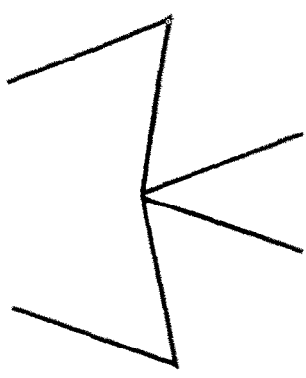
The final case involved a web between two toes.



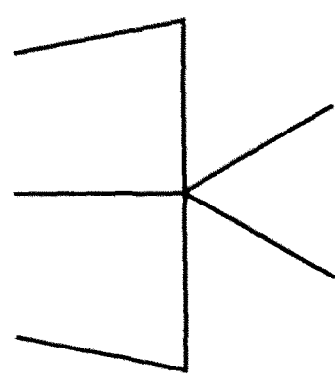
Mustardé (1963)



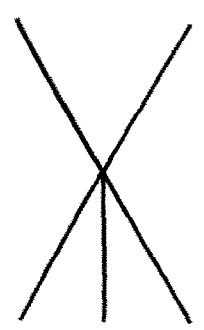
Woolf & Broadbent (1972)



Shaw et al (1973)



Hirshowitz et al (1975)



Alexander et al (1982)

Fig. 1

Figure 1—Diagrammatic representation of techniques.



Fig. 2

Figure 2—Correction of congenital thumb web. (A) Flaps marked on dorsal surface. (B) Flaps marked on volar surface. (C) Flaps cut demonstrating passive transposition of flaps on separating digits. (D) A different case showing well healed scars marked with ink and demonstrating a good deep web.

Discussion

The advantages of the Mustardé procedure are the utilisation of local tissue, with reconstruction of an adequate web of satisfactory depth and appearance. When used to correct burn scar contracted webs the presence of inelastic scar tissue places some limitation on the benefit achieved but is not necessarily a contraindication. The position of the distal edge of the web can be predetermined and flaps designed accordingly. Recurrence has not been a problem in this series and the final scarring is unobtrusive (Fig. 2D).

The technique is reported here to give Mustardé the full credit for its origin, and to stress that many subsequent designs are merely modifications of his procedure.

References

Alexander, J. W., MacMillan, B. G. and Martel, L. (1982). Correction of postburn syndactyly: an analysis of children

with introduction of the VM-Plasty and postoperative pressure inserts. *Plastic and Reconstructive Surgery*, **70**, 345.

Hirshowitz, B., Karev, A. and Rousso, M. (1975). Combined double Z-plasty and Y-V advancement for thumb web contracture. *Hand*, **7**, 291.

Mustardé, J. C. (1963). Epicanthus and telecanthus. *British Journal of Plastic Surgery*, **16**, 346.

Shaw, D. T., Li, C. S., Richey, De W. G. and Nahigian, S. H. (1973). Interdigital butterfly flap in the hand (the double-opposing Z-plasty). *Journal of Bone and Joint Surgery*, **55A**, 1677.

Woolf, R. M. and Broadbent, T. R. (1972). The four flap Z-plasty. *Plastic and Reconstructive Surgery*, **49**, 48.

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