

A VENOUS ISLAND FLAP FOR THUMB RECONSTRUCTION*

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SUMMARY

A successful transfer of a venous island flap from the dorsum of the proximal phalanx of the index finger to the defect on the proximal phalanx of the thumb is reported.

(*Key Words:* Flaps, Island Flaps, Thumb Reconstruction)

In a child, the reconstruction of a defect on the proximal phalanx of the thumb with an exposed bone and the metacarpophalangeal joint is very difficult. A two stage reconstruction using the cross finger flap or a distant flap invites the most uncomfortable position in the post-operative period and demands co-operation from the patient, which cannot be easily expected of a child. The reconstruction by Foucher's flap (1979) involves difficult dissection because of the small size of the vessels in the child. Hence it was decided to use a venous island flap based on the dorsal metacarpal vein from the dorsum of the proximal phalanx of the index finger to reconstruct the defect on the thumb.

Case Report

A ten year old boy presented with an ulcer of 2.5×1.25 cm on the dorso-ulnar surface of the proximal phalanx of the right thumb with exposed bone and metacarpophalangeal joint (Fig. 1).

The patient sustained injury $2\frac{1}{2}$ months back when his right thumb was caught in a thresher machine. He was initially treated by an orthopaedic surgeon who did debridement and repair of the wound. The wound margins necrosed and the result was an ulcer.

Under general anaesthesia, a flap of 1.5×3.0 cm was marked on the dorsum of the index finger and the course of the dorsal metacarpal

vein was marked. Under the tourniquet, the thumb defect was recreated by excising the fibrous margins and the proximal phalanx was fixed using Kirschner's wire. The incision was placed along the markings of the flap and the course of the vein. The vein was exposed by raising the flap on either side leaving behind the vein and the perivenous fat. The flap was elevated and the dissection was extended to elevate a 3 cm long venous pedicle (Fig. 2).

The flap was transferred to the defect after tunnelling it through the web space and was sutured transversely (Fig. 3). The donor area was covered with the split thickness skin graft. The flap behaved well in the post-operative period and healed without any complications (Fig. 4). The patient was discharged on the ninth post-operative day after the removal of the stitches. The Kirschner's wire was removed three weeks after the surgery and now the patient is being rehabilitated.

Discussion

A number of reports (Baeck et al., 1985, Thatte et al., 1987 and Chavoin et al., 1987) have proved that the venous island flap can be used successfully. But the haemodynamics of this flap is not yet established. In this case, the venous island flap was based on the dorsal metacarpal vein which leaves the dorsum of the index finger from its radial side and at the distal border of the anatomical snuff-box, it unites with the dorsal venous arch to form the

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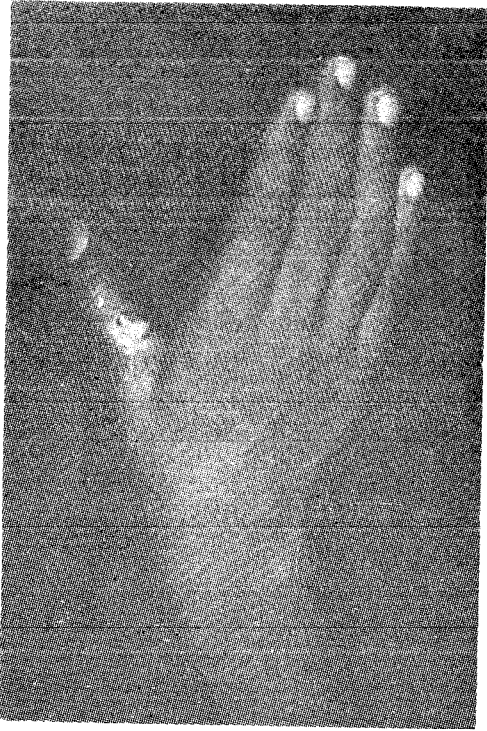


Fig. 1. Pre-operative view showing the ulcer on the dorso-ulnar surface of the right thumb.

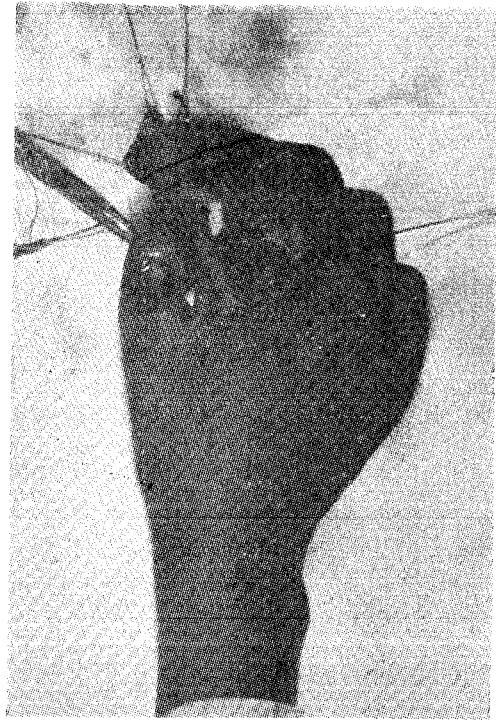


Fig. 2. Intra-operative view with the flap elevated on a 3 cm long venous pedicle after the tourniquet was released.



Fig. 3. Flap transferred to the defect after tunnelling it through the web space.



Fig. 4. Flap well healed 3 weeks after the operation.

cephalic vein. This dorsal metacarpal vein is constantly found in all individuals.

The flap behaved like any other conventional flap. After the tourniquet was released, the vein filled up and the margins of the flap bled normally. During surgery, the capillary filling was normal, the wrinkling became less prominent. Twentyfour hours after the operation there was mild oedema which started subsiding after fortyeight hours and subsided completely within five days. The flap healed without any complications. No anti-

coagulant or antiplatelet agents were used during or after surgery.

Conclusions

A venous island flap from the dorsum of the proximal phalanx of the index finger based on the dorsal metacarpal vein can be safely used to reconstruct the skin defect on the thumb. This simplifies the procedure, reduces the operating time, accomplishes the reconstruction in one stage and minimizes the hospital stay.

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