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A NEW METHOD FOR COVERING DEFECTS OVER FOREARM WITH EXTERNAL FIXATOR APPARATUS IN POSITION

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SUMMARY

A case of a mutilating injury of the forearm treated with a multiple entry A. O. external fixator was provided with a flap cover from the abdomen. The manoeuvre used to achieve the flap cover, along with a brief discussion is being presented.

The problem of skin cover in massive crush injuries of the extremity sometimes pose a difficult problem due to associated bony injury, where fracture stabilization device is to be simultaneously used.

Case Report

A 25 years old man was admitted following a vehicular accident with a severely crushed forearm with fractures of radius and ulna (Fig. 1). The extensor group of muscles were grossly contused, crushed and heavily contaminated and a considerable part of this group of muscles was nonviable. Flexor muscles were intact and gross flexor function in the hand was normal. Radial artery was well felt and circulation of the hand distally was adequate. On exploration of the wound severe crushing of the ulnar artery and ulnar nerve and contusion of the median nerve was seen.

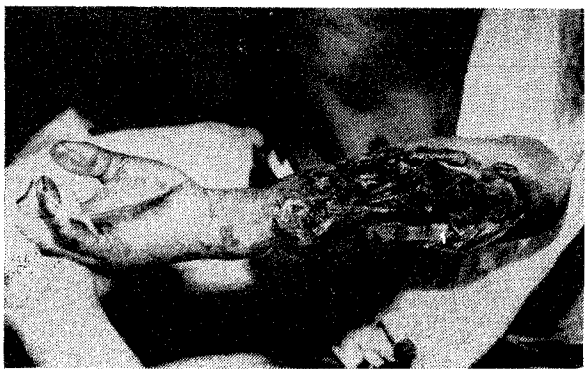

Fig. 1. Crushed right forearm with exposed bone and contused and crushed muscles.

The fractures were fixed using A. O. external fixator apparatus after debridement. After the stabilization, a flap cover for the defect was considered essential for the survival of the hand (Fig. 2). The defect over the ulnar and extensor aspect of the forearm could have been covered easily and comfortably with a large inferiorly based abdominal flap, but for the '9' external fixator pins sticking out from the forearm at different sites in different directions.

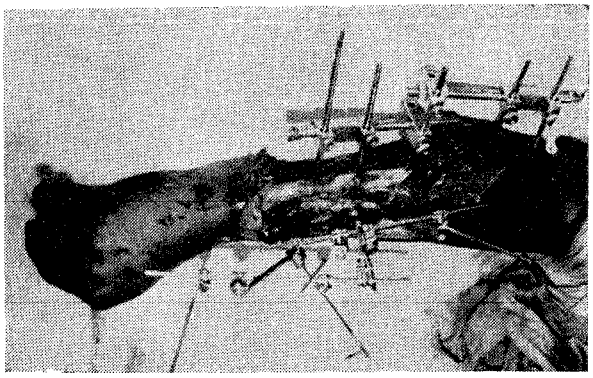

Fig. 2. Defect on the right forearm just prior to flap cover, showing exposed ulna and radius. Defect is extending on either sides of A. O. external fixator pins.

A large inferiorly based abdominal flap was raised and was pierced with 5 pins of the external fixator apparatus lying in the centre of the defect for stabilizing the ulna. This was done by temporarily removing horizontal assembly of the external fixator apparatus (Fig. 3). The

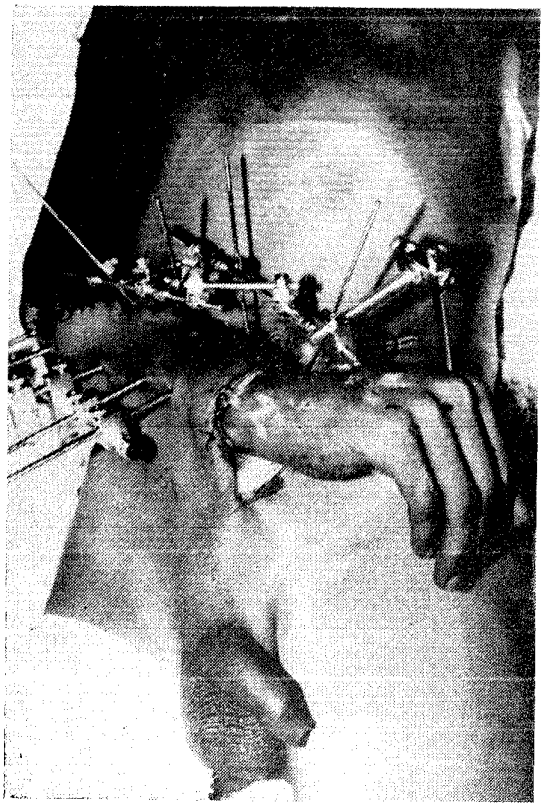

Fig. 3. Pierced inferiorly based abdominal flap in position.

flap thus covered the entire defect except a small portion on the volar aspect, which was also covered after division and insetting of the flap 4 weeks later. Post-operative infection resulted in a partial thickness loss of the left superior corner of this flap which healed by secondary intention. Two months post division the area had healed quite satisfactorily (Fig. 4).

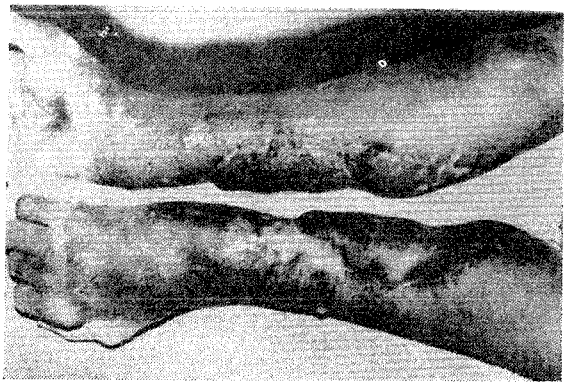

Fig. 4. Two months post division photograph after removal of A. O. external fixator apparatus showing a satisfactorily healed area.

Discussion

A defect like the one described here which was halved into two parts by a row of external fixator pins and where both halves needed flap cover, a single flap without this manoeuvre of piercing and threading the flap over external fixator pins, was not feasible. Though the inferiorly based abdominal flap used to cover the forearm in this case, appears to be a random pattern flap, in actuality it is a multiaxial flap as it includes territories of Groin flap (McGregor, I. A., 1972), Hypogastric flap (Shaw, D. T. et al., 1946) and SEPA flap (Dias, A. D., 1984). The axial vessels of these flaps were taken care of while piercing this flap, thereby safeguarding its vascularity.

Conclusion

A difficult clinical problem is quite simplified by a thoughtful bold decision.

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