

USES OF SEPA FLAP IN RECONSTRUCTION OF DEFECTS OF HAND-A REVIEW OF 25 CASES

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KEY WORDS
Monoaxial delay.

ABSTRACT

The SEPA flap based on superficial External Pudental Artery, raised from lower abdomen is used to cover defects of hand. A series of 25 cases is done, out of which 5 cases were dealt in the emergency whereas 20 cases were dealt in elective operations. Both unilateral and bilateral flaps were used. The results are encouraging but vary significantly upon the severity of injury.

INTRODUCTION

Hand injury is fairly common. It involves damage to skin and underlying structures to a varying extent. Dorsum of hand is the commonest site affected. Skin cover has to be soft and supple to preserve the structures damaged or exposed at

the time of injury or else to facilitate future reconstructions and to control wounds infection. There are various methods available for cover of full thickness, over the injured hand. Such as random abdominal flaps, groin flap, hypogastric flap, reverse radial artery forearm flap and free flaps. SEPA flap is one of them which was originally described by Dias (1984) and used by Thatte (1987).

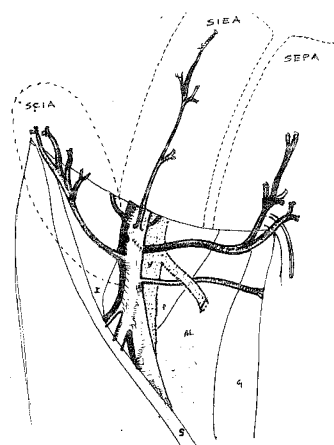
MATERIAL AND METHODS :

25 cases of hand injury were subjected to reconstructions by SEPA flap. All cases were males. Most of the cases were between second and fourth decade of life. Youngest patient was a ten year old boy while the oldest patient was a fifty-five year old male. Sixty percent cases were due to agricultural machines (Thresher, Charakal, Sugar cane crusher etc.) thirty-two percent were due to explosive devices (Bomb blast, fire arms) and eight percent were due to traffic accidents (Road and rail). In majority of cases (18 cases) the SEPA flap was applied to cover the dorsum of hand. Rest of the flaps were applied over the defects of forearm. In two cases flap was wrapped round to cover the dorsum and part of the palmar surface. In most of the cases bony injuries were observed (Single metacarpal-4 cases, multiple metacarpals-14 cases, forearm bones-2 cases).

SEPA flap was applied in a elective operation in 20 cases while in 5 cases it was applied in emergency after meticulous debridement of the wound. Bilateral flap was used in 20 cases and unilateral flap was used in 5 cases. All operations were done under general anaesthesia. The donor site in cases of bilateral flaps was closed by split skin while that of unilateral flap, it was always

closed directly post operative immobilization was achieved by plaster of paris bandages wrapped around the elbow and trunk together. After removal of stitches-plaster cast was replaced by crape-bandage. The flaps were detached between 21 to 28 days post op. Axial vessels were never ligated prior to division. The division of the pedicle and inseting of flap were done in single sitting.

BASIC PRINCIPLES OF SEPA FLAP :



The SEPA flap is an axial pattern flap based on the superficial external pudendal arterio-venous system. The base of the flap lies in pubic and inguinal region. The vessels lie just lateral to the pubic tubercle and ascend upwards between two layers of the superficial fascia of anterior abdominal wall, towards the umbilicus. The lateral flap is raised along with the two lines running vertically 2.5 cms. away from the corresponding pubic tubercles. In case of an unilateral flap, midline forms the medial border. The artery after originating from femoral artery lies superficial to scarpa's fascia and gradually become more superficial. So the flap can be thinned in distal half. The anatomical basis of SEPA flap has been well described by U.A. Patil, A.D. Dias and R.L. Thattle (1987).



Photographs showing :

- i) Pre-operative view, defect over dorsum of hand.
- ii) SEPA being raised.
- iii) Post op. view.

Incisions are started from above. Both the layers of superficial fascia of anterior abdominal wall are taken together leaving the external oblique aponeurosis bare. Incisions are extended below according to the need.

RESULTS :

23 cases were successful, there was failure in 2 cases (One unilateral and one bilateral) Marginal necrosis was observed in 2 cases. In 2 cases the donor sites required re-grafting.

DISCUSSION

Various types of flaps have been described and used to cover hand such as thoraco-epigastric flap (Webster), hypogastric flap (Show & pyne 1946), groin flap (MC-Greagar and Jackson-1972), bipediced abdominal flap (Antia and pandey 1976) etc. Arnold (1979) reported the use of omental flap and mathes and Nahai advocated T. F-L myocutaneous flap for resurfacing of hand defects. The role of forearm flap has been emphasised by various workers in reconstruction of hand defects. (Guofan and Baogri-1978) stock et al 1981, Foucher, 1984) Free flaps such as free groin and dorsalis pedis flaps etc. have definite role in one stage coverage of hand defects. (Teylor-1977).

In our series though few flaps were bulky no patient desired thinning of the flap.

CONCLUSION :

In cases of injuries of hand, SEPA proves to be a simple flap with easy design having better immobilization, comfortable lie of the hand and is a highly reliable flap.

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