



A STUDY OF PROGNOSTIC FACTORS FOR SURVIVAL OF TUBED GROIN FLAP POST DIVISION

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ABSTRACT BACKGROUND:

Tubed groin flap is an axial pattern flap based on superficial circumflex iliac vessels and has been a workhorse pedicled flap for reconstruction of major hand defects. Distal flap necrosis post division is seen in few cases which require secondary procedures. In this study we have evaluated the prognostic factors for survival of tubed groin flap after division.

MATERIAL & METHODS:

A prospective study done from Jan 2014 to Dec 2015 in patients who underwent tubed groin flap cover for fingers and thumb defects. A total of 30 patients were included in this study. Pre operative findings, flap dimensions, post operative findings in flaps and post division inset behaviour of the flap were recorded.

CONCLUSION:

Survival of tubed groin flap post division is better when the defect is less than 6 cm, flap length is less than 12cm, width of flap is more than 12cm and division of flap is less than 8 cm from the inset. Flap survival is better in absence of infection

KEYWORDS : Tuber groin flap, Flap necrosis

INTRODUCTION

Tubed groin flap is an axial pattern flap based on superficial circumflex iliac vessels and has been a workhorse pedicled flap for reconstruction of major hand defects. Post division & insertion of the flap after three weeks, distal flap necrosis is seen in few cases which requires a secondary procedure. In this study, we have evaluated the prognostic criteria for survival of tubed groin flap post division.

MATERIALS AND METHODS:

A prospective study was done from January 2014 to December 2015 in patients who underwent tubed groin flap cover for fingers and thumb defects. A total of 30 patients were included in this study.

The operative procedure was done under supraclavicular block or axillary block of involved upper limb and spinal anaesthesia for groin flap harvesting. Wound debridement, length of stump measurement, lint pattern, planning in reverse, marking and harvesting of groin flap on ipsilateral side was done and flap inset given. Post inset, the circumference at the inset site and at the base of the flap was measured. Post operative monitoring of flaps for complications done and recorded.

On 10th post op day, suture removal was done. The behaviour of the inset and the seam line were monitored on 12th post op day. Flap division was done on 21st day. The distance of flap from the inset was measured. Flap inset given within 48 hrs of division. The level of necrosis was measured after 48 hours of inset. Secondary procedure like ssg, secondary suturing was done as required. Patient discharged after complete healing and followed up every week.

OBSERVATIONS AND RESULTS

The highest distribution of patients were in age group of 21-30years (14 patients), followed by 11-20years (12 patients) and 2 patients more than 30 years of age. The sex distribution was 29 males and 1 female. 21 patients had injuries involving the dominant right hand and non dominant left hand in 9 patients. The most common mode of injury was due to industrial accidents comprising 17 patients, ring avulsion injury in 10 patients and 3 patients with cracker burst injury.

Thumb was involved in 14 patients, ring finger involved in 8 patients and mid finger in 3 patients, index in 1 patient. The results of this study has been tabulated as below

Table 1: Correlation of length of defect and flap survival

Length of defect	No necrosis	Necrosis	Total
<6 cm	18(69.2%)	8(30.7%)	26
6-9 cm	2(50%)	2(50%)	4

Table 2: Correlation between length of flap and flap survival

Length of Flap	No necrosis	Necrosis	Total
4-8cm	4(66.7%)	2(33.3%)	6
8-12cm	15(71.4%)	6(28.6%)	21
>12cm	1(33.3%)	2(66.7%)	3

Table 3: Correlation between width of flap and flap survival

Width of Flap	No necrosis	Necrosis	Total
4-8cm	4(57.1%)	3(42.9%)	7
8-12cm	12(63.2%)	7(36.8%)	19
>12 cm	4(100%)	0	4

Table 4: Correlation between circumference at inset and flap survival

Circumference at inset	No necrosis	Necrosis	Total
3-6 cm	1(100%)	0	1
6-9cm	10(62.5%)	6(37.5%)	16
>9cm	9(69.2%)	4(30.8%)	13

Table 5: Correlation between behaviour of inset line and flap survival

Behaviour of inset line	No Necrosis	Necrosis	Total
Clean	20(83.3%)	4(16.7%)	24
Infected	0	6(100%)	6

Table 6: Correlation between distance of division from inset and flap survival

Distance of division from inset	No Necrosis	Necrosis	Total
4-8cm	15(17.4%)	6(28.6%)	21
8-12cm	5(55.6%)	4(44.4%)	9

Table 7: Correlation between behaviour of seam line and flap survival

Behaviour of seam line	No Necrosis	Necrosis	Total
Clean	17(73.9%)	6(26.1%)	23
Infected	3(42.8%)	4(57.2%)	7

DISCUSSION

In our study, flap survival after division is better when the defect is less than 6 cm.

Flap survival is better when the length of the flap is less than 12 cm. Flap lengths ranging from 4-8cm and 8-12cm, the complete survival was 66.7% and 71.4% respectively. Distal necrosis was high when flap lengths were greater than 12 cm comprising 66% of patients.

Flap width more than 12 cm had better survival rate when compared to

flap width less than 12 cm. 39.85% of patients with less than 12 cm flap width developed distal necrosis.

Circumference of the inset more than 9 cm showed better survival. In 17 patients with circumference less than 9 cm, distal necrosis occurred in 35.3% when compared to 13 patients with circumference greater than 9 cm, distal necrosis occurred in 30%.

Analysis of behaviour of inset line showed that in 20 patients (83.3%) of non infected cases, the flap survived completely and 4 patients had distal flap necrosis with non infected inset line. Infection was found in 6 patients in whom all had distal flap necrosis.

Correlating the distance of division from inset and flap survival after division, distance of division between 4-8 cm was seen in 21 patients amongst whom distal flap necrosis was recorded in 6 patients (28.6%). In 9 patients, distance of division was found to be more than 8 cm amongst whom distal flap necrosis was noted in 4(44.4%) and indicated that the flap survival was better when distance of division is less than 8 cm from inset.



CONCLUSIONS:

1. The length of defect less than 6cm, length of flap less than 12cm and width of flap more than 12cm contribute to better survival of flap post division
2. The circumference of inset more than 9cm, behaviour of inset line and behaviour of seam line in the absence of infection also influence better flap survival.
3. Flap survival is better when the distance of division from inset is less than 8cm.

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