

**GROANS OF THE GROIN FLAP**

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**SUMMARY**

*The groin flap in India does not behave as well as it does in the temperate climate. Therefore all is not well, when a groin flap is used. The problems observed by us in our five year study of sixty groin flaps have been highlighted through this paper.*

**Introduction**

McGregor devised Groin flap in 1972 based on its unique vascular characteristic (McGregor and Jackson, 1972). The anatomical lie of the vascular pedicle was studied and found to have little variation in location and course. The commonest use has been primary transfer to cover defects over the hands, although distant transfer as substitute for abdominal tube, can be performed safely (McGregor, 1972; Thind, 1976 and Bhattacharyya, 1980).

The complication on transfer of an axial pattern flap cause the surgeon and the patient to groan. The groaning is generally a whimper in this flap. In other words whereas major necrosis is rare in this flap (McGregor, 1972; Bhattacharyya, 1980), the major complication do occur rather frequently. There is no documentation of the minor complications in the literature, therefore this retrospective study was undertaken.

**Material and Methods**

During the five year period from 1981-1986, sixty groin flaps transfers were performed to provide the full thickness cover. The flaps were raised by standard technique. The widest being 10 cms. Delaying procedure was done to gain extra length beyond the anterior superior iliac spine where required. Out of the sixty flaps only four were in females. The youngest patient was 10 years old, while the oldest was sixty years old. The age distribution is shown in Table I.

**Table I. Age distribution**

Age in years	Nos. of patient	%
0-10	1	1.6
11-20	3	5
21-30	40	66.7
31-40	14	23.3
above 40	2	3.3
Total	60	

The flap was transferred directly to recipient site in 52 patients and through the wrist carrier in other 8 patients. Fifty one flaps were transferred to hand, seven to foot and leg, one to scrotum and one to forehead (Table II).

**Table II Recipient sites**

Site of transfer of flap		%
Hand	51	85
Foot+leg	7	11.7
Scrotum	1	1.7
Forehead	1	1.7
Total	60	

The causative factors of defects, covered with this flap are shown in Table III.

The donor site was closed by direct suture in 50 patients, the other 10 patients required split skin grafting. Delaying of the flap before detachment was performed in 10 patients.

**Table III. Causative factors**

Causative factors of defects		%
Crush injury hand	17	28
Burns hand	12	16.66
Lacerated injury hand	10	20
Blast injury hand	4	6.66
Frost Bite hand	1	1.67
Injury thumb	7	11.67
Injury leg+foot	7	11.67
Ulcer scrotum	1	1.67
Burns forehead	1	1.67
Total	60	

### Results and Discussion

Preponderance of males in our study is similar to other works (Bhattacharyya, 1980). Out of sixty patients 54 were in the age group between 20-40 years, being the most active age group.

An axial pattern flap raised in a healthy individual by a standard technique is not expected to have any complications. Out of sixty flaps thus used 29 patients developed 37 complications of various nature (Table IV).

**Table IV. Complications Noted in 37 out of 60 patients (Groans)**

Nature of complications	
Rim necrosis of flap	25
Donor site infection (Direct suture group)	6
Donor site infection (Skin graft group)	2
Suture Dehiscence at the wrist carrier	2
Frank necrosis	2
Total	37

More than one complication in one patient explain 37 complications in 29 patients. Commonest complication noticed was 1/2 cm rim necrosis of flap at the time of inseting the flap to the recipient area. The complication occurred in 25 of our patients. Frequency of this complication was noticed by other workers also. (Stark and Kernahan, 1959).

This was more common in those cases where the detachment and inseting was done during the same operation. Inseting after one week of detachment was recommended to prevent this complication (Stark and Kernahan, 1959; McGregor, 1972). We found that delaying the inseting by one week caused contracture/shortening of the flap. Therefore, we started inseting the flap after 48-72 hours of detachment with gratifying results.

Direct suturing of the donor defect was possible in all but 10 patients. The resultant stretched scar in a few patients was comparable to a skin grafted patch. Infections of the donor area occurred in 6/50 in direct suture group and 2/10 in the skin grafted group. The soddening of the donor area due to sweat occurred invariably because the hand rested over that area. However in two cases who had thick layer of fat, a pocket was noticed at the medial end on the donor area where direct closure was done. Fortunately these infections did not affect the transfer of the flap.

The suture dehiscence at the wrist carrier was noticed on 4th day in two cases. The cause is uncertain, since the same tubes on reattachment healed by primary intention. These tubes did not show oedema or inflammation when getting detached.

The most devastating complication of frank necrosis of 5 cms x 7.5 cms was seen in two patient out of 60. Other workers have reported incidence of 2/35 and 2/20 (McGregor, 1972; Thind, 1976; and Bhattacharyya, 1980). Out of these two patients one had circumferential electrical burn of the wrist with damaged tendons. A long flap was used to provide the cover in one sitting. Probably this was a very ambitious procedure. The other patient had deep burns of face, forehead and scalp with exposed frontal bone. The portion of the flap attached to the forehead necrosed but still half of the tube attached to wrist survived. Delaying of the flap before detachment and formal ligation of the feeding artery has been recommended

to prevent this complication (Stark, 1967 and McGregor, 1972). In our view the delay and ligation of vessels do not affect the survival of the flap. We have done formal delay only in 10 patients and no delay was done in 50 patients. Once the flap is detached from the donor site it is practically a random pattern flap. The more important factor for flap survival then seems to be the condition of the recipient area.

### Conclusion

To conclude, groin flap is a versatile axial pattern flap with excellent survival potential. Frank necrosis is rare. Rim necrosis can be avoided by delaying the inseting for 48-72 hours.

Minor complication do not affect the flap transfer but do cause the surgeon to groan and patient echos the doctor.

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