

# Exposed Skin Grafting in Various Surgical Conditions

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**Background:** A descriptive study was conducted at SIMS from December, 2002 to November 2005 to see the results of exposed skin grafting in various surgical conditions.

**Method:** One hundred patients underwent exposed skin grafting. Most of the patients had surgical wound after excision of carbuncle, diabetic foot debridement, due to trauma and due to burn these wounds are dressed daily until they became clean, red granulation. We applied split thickness skin graft.

**Results:** In this study 56 were male and 44 were female with a median age 42.6 years in male and 43.3 years in females. Thirty five percent (35%) had surgical wound after excision of carbuncle. Twenty five percent (25%) had surgical wound after debridement of diabetic foot and 25% had wound after trauma. Eleven percent (11%) had wound after burn. In all these patient we performed delayed exposed grafting and results are alright without any rejection. Early exposed skin grafting performed in 3% of cases after release of contracture and after mastectomy in 1 male patient. One patient after mastectomy had partial rejection.

**Conclusion:** Exposed skin grafting is a simple and cheap method and can be done in both delayed granulating wound and early surgical wound.

**Key words:** Exposed skin grafting, Delayed exposed grafting, Carbuncle.

## Introduction

The exposed skin grafting technique was initially developed as a solution to the ineffectiveness of bolus grafting in areas which can not easily be immobilized. Even with the most elaborate methods of fixation and immobilization the bolus dressing with the underlying graft tended to slide to and for setting up shearing movements between graft and bed which prevented vascular link up. The pressure dressing, instead of being the means of providing immobile contact, became the means of preventing it.<sup>1</sup>

Removal of dressing had the effect of eliminating these shearing strains. With the graft laid in position and protected from being rubbed off, the natural fibria adhesion between graft and bed allowed the graft to tolerate minor movements of the patient without interfering with the sequence of vascularization and fibrous tissue fixation.

Exposure solved the problem shearing movements, but not the problem of haematoma. Problems of haematoma did not arise when a granulating area was grafted using exposed grafting and this fact provided the key to success in the post-resection defect by the use of delayed exposed grafting.<sup>2,3</sup>

## Patients and Methods

During last 3 years December 2002 to November 2005. One hundred patients underwent exposed skin

grafting. Most of the patients had surgical wound after excision of carbuncle and traumatic wound. These wound are daily dressed when they became clean, red, then we applied split thickness skin graft. We take split thickness skin graft from the thigh and applied to recipient area and graft laid exposed. We daily washed the graft with normal saline and lubricate the wound. Graft is also protected from friction and trauma.

## Results

This is a descriptive study conducted at Services Institute of Medical Sciences in the Department of Surgery from December 2002 to November 2005 (3 years). One hundred patients underwent exposed skin grafting for various surgical conditions. In our study 56 were males and 44 were female with a median age 42.5 years in males and 43.3 years in females. The various surgical conditions are shown in the Table 1.

Most of the exposed skin grafting done in patients after excision of carbuncles. Thirty five percent (35%) of patient underwent excision of carbuncles. Then these patients dressed daily when wound red granulating thin exposed grafting performed. Twenty five percent (25%) of the patients had traumatic wound due to road traffic accident and due to fall. These patients also dressed daily when wound became healthy, we performed grafting. Twenty five percent (25%) had diabetic foot. We debride the diabetic foot, when wound became

**Table 1:** Exposed skin grafting in various surgical groups.

Surgical Conditions	Male	Female	Total Number	Percentage	Rejection of Graft
Excision of carbuncle	15	20	35	35	Nil
Diabetic foot	17	8	25	25	Nil
Traumatic wound	18	7	25	25	Nil
Burn	4	7	11	11	Nil
Excision/release of contracture	1	2	3	3	Nil
After mastectomy in male	1	0	1	1	Partial rejection

Healthy and applied the graft. Eleven Percent (11%) of patients had deep burn these patients also underwent delayed exposed grafting. Excision of contracture done in 3% of cases followed by early exposed skin grafting. One male patient had fungating anaplastic carcinoma of present. After mastectomy early exposed grafting was performed. All these patients take the graft but one patient had partial rejection. This patient had anaplastic carcinoma of breast and early exposed grafting done but due to infection this patient had partial rejection.

## Discussion

Skin grafting is a simple and a cheap method for treating ulcers if done in the early phase it can lower health care costs.<sup>4</sup> Delaying the application of a full or split thickness graft may be an advantages alternative method of surgical reconstruction in selected cases. Partial healing by secondary intention is useful for filling in deeper defects and usually produces a wound that is much smaller and of more normal contour than the original defect.<sup>5</sup>

Exposed grafting demands a degree of cooperation from the patient, and it has to be used with discretion in children.<sup>6</sup> Even in adults cooperation can not be expected during recovery from the anaesthesia and transfer from operating theatre to bed. Exposed skin grafting needs extra care while transferring the patient and postoperatively. Most of our patients are diabetic and in this most affected condition is diabetic foot and excision of diabetic carbuncle. After debridement we performed daily dressing of wound and when wound became healthy and granulating we performed exposed split thickness grafting. The results of exposed grafting in these diabetic patients were alright without any rejection. Machey<sup>7</sup> also wrote the letter to the editor of Br. J Plast Surgery and said that exposed skin grafting is successful in different situation.

The coverage of defects is a broad field with

which the surgeon is confronted daily within traumatic, tumoral or other context. Indeed there are various types of skin graft although a common denominator is the need for a good recipient site in order to allow an adequate take.

We also performed early grafting in burn patients and after excision of contracture. Early exposed grafting in these patients were successful without any rejection. Prasanna (2004)<sup>8</sup> in Oman also performed early grafting in 13% of cases and 87% of cases delayed grafting was performed. The results of surgery were successful without any morbidity and mortality. Shah (1990)<sup>9</sup> also performed immediate exposed skin grafting in children. Results of grafting were alright without need for further surgery.

In developing countries like Pakistan exposed skin grafting is successful, simple and cost effective. It saves the operative time and cost. Although it needs high degree of cooperation from the patient and postoperative care to avoid avulsion of graft.

## Conclusion

Exposed skin grafting is a simple and cheap method. It can be performed successfully in early surgical wound and in delayed granulating wound but needs high degree of cooperation from the patient.

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