

Role of Innovative Splints in Protecting Skin Grafts

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Abstract

Skin grafting are most common surgeries performed in field of plastic surgery. Post-operatively patient may need to maintain the particular position to preserve the viability of the Skin grafts to prevent the direct pressure application over the recently raised loco regional flap. Skin grafts over the back will be very cumbersome for the patient postoperatively to maintain the prone and lateral position to prevent the direct pressure over the Skin grafts. In this case report we will assess the role innovative splint to prevent the application of direct pressure over skin grafts in lower back.

Keywords: Flaps; Protective splints; Innovation.

INTRODUCTION

A Skin grafts is harvested when the surgeon needs to cover the raw area that needs to be covered, known as the recipient site in the local site. Skin grafts can be used to cover the raw area variety of body parts. The head, neck, chest, or breast areas, arms and legs, and the lower back, buttocks, or vagina are all examples. In this case report we will assess the use of innovative ring splints in post-operative care of the surgical site with skin grafts.

MATERIALS AND METHODS

In this case report, 32 year old male came to JIPMER Hospital with the chronic non healing ulcer over the lower back of size 5 X 5 cm for past 10 year post electrical burns. After wide local excision of the ulcer histopathology report came as Squamous cell carcinoma with all margins negative for tumor. After tumor removal size of the tumor ulcer size was around 8 x 8 cm. In view of scarred tissue all around the ulcer, local keystone flap based on the perforator on the right side of the ulcer and transposition flap on left side of the ulcer planned. The raw area created post local flaps from the donor site was covered with split skin grafting from the left thigh. Post-operative care for the flap and skin graft was done with innovative ring splint made from cotton roll and pad made into a ring and fixed around the flap site so that even if the patient lies flat flap site was protected by the splint from direct pressure over the skin grafted site. The cost of making the innovative splint is very minimal and is readily and easily applicable.

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RESULTS

In this case report, patient was comfortable postoperatively with the splint, the patient compliance is good as patient can mobile in any



Fig. 1: Transposition flap.

DISCUSSION

Skin grafts are to be protected post surgery, for monitoring and splinting we will splint the region with the customized splint or Plaster of Paris.¹ This method helps in a way to protect the skin grafts. The positioning and splinting should be important post surgery for skin grafting as it minimizes edema formation, prevent tissue destruction, maintain tissue in an elongated state to facilitate recovery and adopt the anti-contracture position. Physical therapy and splinting should immediately after the injury as they play an important role in different body parts function, especially in hand function. The splints are used to hold parts of the body so that the skin graft and flaps can be immobilized and protected while healing.² The skin can be prevented from shrinkage and contractures while healing. The new grafts and flaps are protected. The deformity is prevented and/or corrected. There are 3 types of splints usually used with namely static, static progressive and dynamic splints.^{3,4} Static or Primary splints are used in the acute phase for skin

direction in bed without any harm to the skin grafted site. The patient was very happy with splint as he feels less pain post-operative with well-padded splint even if the patient lies flat with the surgery over the lower back region.



Fig. 2: Protective Ring splint for local flap

graft protection after surgery or anti-contracture positioning. These splints are applied to adjacent intact skin. Static progressive or postural splints are used after the graft phase when there is no sufficient Range of movements (ROM) obtained with static positioning and exercise. These splints may be implemented for correction and contractures commonly used in burns patients. Dynamic or follow-up splints are used to increase function by providing a slow force to stretch a contracture or provide resistive force for exercise post surgery or post burns.

CONCLUSION

Loco regional flaps, free flaps, Skin grafts are commonly performed procedures in plastic surgery department. In this study we can able to appreciate the role of Innovative Splint in Protection of skin grafts. This was based on single case report, so validity of the splints should be tested by using it widely in many patients in future. These splints can be easily adaptable and can be used in any hospital.

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