



MANAGEMENT OF POST BURN CONTRACTURE PATIENTS WITH SPLIT THICKNESS SKIN GRAFTING

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ABSTRACT

Background: Post burn contractures are distressingly common and severe in developing nations and considered as a significant problem in developed countries as well. Despite advances in the overall management of burn injuries, severe post-burn contractures continue to be a formidable foe for reconstructive surgeons in developing countries. The aim of the study is study outcome of patients undergoing split thickness skin grafting for post burn contracture release.

Material and Methods: 100 patients of post burn contracture admitted to Sushila tiwari hospital between March 2013 to December 2018 were included in study.

Conclusion: Split thickness skin grafting is an simple and effective treatment modality in post burn contracture patients. The success rate split thickness skin grafting in post burn contracture release is 89% in our study.

KEYWORDS : Split Thickness Skin Grafting, Post Burn Contracture, Outcome

INTRODUCTION

Post burn contractures are distressingly common and severe in developing nations and considered as a significant problem in developed countries as well. Infants rolling into unprotected fires or explosions of poorly made stoves are the most common causes of these burns in developing world.

Not only a higher incidence of burn injuries, but also lack of ideal facilities for managing acute burn subjects are concerning features in these countries. These factors are further compounded by ignorance, poverty, and inadequate utilization of available health care facilities. The resultant post-burn contractures are often severe, long standing, and with secondary complications.

Quite often, they are not only multiple in each subject but also very severe and diffuse. The burn subjects are treated by a variety of service providers who aim at closing the raw wounds and this leads to invariable development of wound contraction and scarring.

4.1 Aims

To study management of post burn contracture by skin grafting and its complication and outcome.

4.2 Methods and Methodology

100 patients of post burn contracture admitted to sushila tiwari hospital between march 2013 to December 2018 were included in the study.

Written informed consent was taken..

4.2.1 Inclusion Criteria

Age 18 years and above.
Contractures of neck, axilla, elbow, knee.
Post thermal burn contractures

4.2.2 Exclusion Criteria

Contractures of foot, eyelid, lip, ear, groin and trunk.
Contractures secondary to electrical and chemical burns.

5. RESULTS

In our study 100 cases underwent post burn contracture release with split thickness skin grafting. Out of the 100 cases 11 cases (11%) cases had complication, 6 cases (6%) of skin graft rejection, 3 case each of knee and axillary contracture; 3 case of knee joint contracture developed recontracture and 2 case of neck contracture release with SSG developed keloid. Patients undergoing knee contracture release with split skin grafting has maximum chances of graft rejection and re-contracture. The contractures occurred mainly due to poor patient compliance and burns in this area are usually deep with involvement of underlying tendons.

In our study majority of patients presented with knee contractures 31 (31%), followed by neck contracture 29 (29%), elbow contractures 24 (24%) and axilla contractures 16 patients (16%).

Incidence of elbow contracture was maximum with age group of 18-30 (21 cases), Neck contracture in age group of 18-30 years (18 cases), knee contracture in 31-45 years (16 cases) and Axillary contracture equal incidence in all the three age group i.e., 5 cases. Majority of the patients were females with 63 numbers of cases and 37 were males.

In our study (8) neck, (5) axillary, (11) elbow and (16) knee contractures presented between 6 months to 1 years; between 2 to 4 years duration (11) neck, (9) axilla, (11) elbow and (3) knee contracture; between 5 to 6 years (10) neck, (12) knee and 2 each for axilla and elbow contracture. In our study neck immobilization was done with Philadelphia cervical collar, elbow and knee immobilization with slab, axillary with airplane splint given postoperatively.

Post operatively physiotherapy was started once the wound was healed.

7. DISCUSSION

Post burn contracture is most common complication in the burns patients. It usually occurs in lower socio-economic people. It is often because of patients unwillingness for the treatment or improper treatment. Prevention of contracture is always better. Post burn contracture requires multiple operations to achieve good and aesthetic results. Burns is more common in female than in male same is true for post burn contracture. In our study majority of patients were females (63%) and (37%) were males. Post burn contracture is commonly seen in the 18-30 yrs age group. Maximum number of patients present to hospital from 6 months to 2 years after burns.

The wounds in burn patients heal due to fibrosis to restore physical continuity. Unfortunately, specialized tissue is replaced by fibrosis which produces functional and cosmetic complications. In our study majority of patients presented with knee contractures (31%), followed by neck contracture (29%), elbow contractures (24%) and axilla contractures was (16%).

Burn contractures of the upper limb can produce a significant impact on quality of life by reducing a patient's ability to perform activities of daily living. Appropriate upper limb physiotherapy combined with timely surgical release will give a much more functional upper limb.

More patients survive today with extensive areas of healed burn scar

and graft. But most of them have bad scars, keloid and contracture. These patients are challenge to the plastic and reconstructive surgeons. The ultimate principle of burn reconstruction is learning to understand, appreciate and favorably influence the processes of wound healing and scar maturation.

Greenhalghetal reported 62% success rate with skin grafting. In our study success rate was 89%.

Greenhalghetal have shown that early release is not associated with a worse outcome and argues that waiting for maturation of the scar is not necessary. In our study(8)neck, (5) axillary, (11) elbow and (16) knee contractures presented between 6months to 1 years; between 2 to 4 years duration (11) neck, (9) axilla, (11) elbow and (3) knee contracture; between 5 to 6 years(10) neck, (12) knee and 2 each for axilla and elbow contracture.

Schwarz *et al* and Joshi as well as Stern *et al* noted that the completeness of release that can be expected from a procedure depends on the age of the patient, the age of the burn injury, and the severity of the deformity. In our study the incidence of elbow contracture was maximum in age group of 18-30 (21 cases), Neck contracture in of 18-30 years (18 cases), knee contracture in 31-45 years (16 cases) and Axillary contracture share equal incidence in all the three age group i.e., the 5 cases in each age groups. All underwent surgery contracture release with split thickness skin grafting.

Colditz *et al.* has reported excellent results with the use of serial splinting in the stiff joints from a variety of causes with the involved physiotherapist. In our study post operatively physiotherapy was started once the wound was healed.

Karki *et al* conducted study on axillary post-burn scar contracture in 44 patients. Surgical treatment included split thickness skin graft in 15 patient. Having partial graft loss in 5 patients and Recontracture in 2 patients, with success rate and outcome without complication is 53.34%. In our study, we have total 16 patients with 3 case of graft rejection, with success rate 81.25%.

Grishkevich VM *et al* conducted study on post burn knee contracture in 58 patients out of which 9 patients underwent wide contracture scar release with skin grafting without complication. Without any sign of ulceration, re-contracture and were functioning well in all terms of observation¹³. In our study overall 31 cases of post burn knee contractures underwent scar excision with split skin grafting with 3 case of partial graft rejection and 3 case of knee re-contracture and outcome without complication is 81%.

8. CONCLUSION

With a success rate of 89% Split thickness skin grafting is an simple and effective treatment modality in post burn contracture patients. Post operative physiotherapy is helpful to prevent recontracture. Majority of patients were females either due to homicidal, suicidal or accidental thermal burns. Patients presented with knee contractures followed by neck then elbow and axilla contractures.

Early excision of the contracture band and skin cover in the form split thickness skin graft promotes rapid healing and would lessen the risk of contractures. Meticulous post operative splint age, cast and compression garments of the involved region is essential to prevent contractures.

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