

## POST BURN NECK CONTRACTURE

(A Study of 64 cases)

By

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### Abstract :

The principal methods involved in correction of cervical burn contracture have been described. Our study of 64 cases of post burn contracture of neck which have been treated by split skin graft (S.S.G) and use of U-Foam splint to prevent S. S. G. contracture is presented.

### Introduction

Thermal burn frequently involves the anterior surface of neck and chest, and if not adequately managed, subsequently contracture develops. Most of the time these cases are treated in the dispensaries or district hospitals where due to lack of trained personnel and equipments these cases are not grafted and are allowed to heal by fibrosis since facility for skin grafting is not available. This leads to severe contractures of the neck. Due to inadequate treatment they get severe contracture of neck as healing is by fibrosis.

### Methods of Reconstruction

After release of contracture, to resurface the raw area various methods have been described, e. g. abdominal tube pedicle (Brown, 1958, Barsky, 1964), pedicle flap from shoulder (Pinto, 1964), the tube pedicle from back (Coughlin, 1968). Flap provides better contour and cover to vital structures

Though colour and texture are better, flap are not commonly used because of multiplicity of donor sites, bulky skin hanging in folds, multiplicity of operations and very long hospital stay.

Full thickness grafts (Cronin, 1955-61)—are ideal and provide a good coverage and minimal contracture. The colour, texture and serviceability are excellent. But they require complete haemostasis, perfect asepsis, absence of subcutaneous fat on graft and absolute immobilization which are not possible in neck area. Large donor site is also not available.

Partial thickness or intermediate thickness skin graft provide adequate coverage with high percentage of take. The graft can be easily obtained in the size required. The only disadvantage is contracture after takeup. Cronin (1955, 61) used moulded splints against S.S.G. on neck. Various splints were used i. e. leather and metal (Cronin, 1961), acrylic (Dingman, 1961), foam leather (Tanzer, 1964) They act to :

1. Maintain contact or to exert constantly mild to moderate pressure on graft.
2. Maintain neck in extension or hyper extension. Cronin (1955, 61) appreciated the factor of tension in prevention of contracture of S S.G. and applied it to the management of neck contractures. In our series we also used the same.

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In the present series 64 cases have been studied who were admitted in the Department of Plastic Surgery, S.M.S. Medical College and Hospital, Jaipur in last 10 years (From January, 1970 to December, 1979). The maximum post burn contractures were in 2nd and 3rd decade i.e. 71.8% (46 cases). In the first and 5th decade and above the incidence was minimal i.e. 6.25% and 3.12% respectively. The incidence in females was more 62.5% and in comparison to males 37.5%. The cases can be divided into mild, moderate and severe. The mild are those in which there was little restriction of movements and area of graft after release of contracture required was upto 20 sq. cm. In moderate group there was partial restriction of movements and graft required was 20-40 sq. cm. and in severe ones chin was fixed to sternum by dense fibrosis and there was *eversion* of lower lip in some of the cases. The amount of graft required was more than 40 sq. cm. (See table No. 1). In this series mild

cases were 8 (12.5%), moderate were 36 (56.3%) and severe 20 (31.2%). In all the cases endotracheal anaesthesia was used. Intubation was a blind procedure in all moderate and severe cases. All the scar tissue in the neck was completely excised. The excision of scar permitted full extension of neck. Bleeding was meticulously controlled. Vessels were ligated with 3% plain catgut. Sheets of S.S.G. were taken from thigh with Watson's knife and were used to cover the raw area. The graft was fixed by bulky. "Tie over dressing". The patient kept in dorsal recumbent position with head extended over pillow under the neck.

After 10 days the graft has usually taken up. For the first 2 month crepe bandage was applied over U-Foam to give a dynamic splinting over the graft. Patient is permitted to be out of splint for few minutes in a day to wash the neck carefully. Patients were instructed to use coconut oil or vaseline over the graft before applying splint. Splints should be worn for atleast 6 months round the clock.

The principles of treatment were complete release of contracture, a successful application of graft and effective prevention of graft contracture. It is our observation that inspite of splintage in 60% cases there was contracture of graft about 10-20%. In another 20%

**Table No. 1**

*Raw area after Complete Release of Contracture in SQ. CMS. and degree of Contracture*

S. No.	Degree of contracture and area in Sq. Cm.	No. of patients	Percentage
1.	Mild (20)	8	12.5
2.	Moderate (20 to 40)	36	56.3
3.	Severe More than (40)	20	31.2

**Table No. 2**

*Graft Contracture*

S. No.	% Of Graft Contracture	Mild	Moderate	Severe	Total Number	Percentage
1.	Below 20 %	7	22	10	39	61 %
2.	21-30 %	1	8	4	13	20 %
3.	31-40 %	0	5	5	10	16 %
4.	40 % & above	0	1	1	2	3 %

cases contracture was 20-30%. In 15% the contracture was upto 30-40%. In remaining 5% contracture was more than 40%. In the last 3rd and 4th group the contracture was of this magnitude because there was partial loss of graft and most of the patients did not use splint regularly. Eight cases out of 13 (20%) of the 3rd and 4th group were represented, so as

to obtain reasonably good results.

Our follow up of more than 2 years is only of 50% cases. The appearance, texture and colour of the graft improved considerably in between 6-12 months. The patients who came for follow up were quite happy and satisfied with the results of treatment.

#### References :

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