

Management of 30 cases of Malignant Skin Lesions on the Cheek and Lower Eye Lid

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ABSTRACT

Objective: To assess suitability of various procedures, including cervicofacial flaps with respect to defects in this area.

Design: Observation study.

Place and duration: Department of Plastic Surgery and Burns Bolan Medical College & Complex Hospital Quetta, from January 2003 to December 2009.

Patients and method: 30 cases were operated with defects on cheek. Patients were selected through Out Patient Department. Follow up 3 & 6 months.

Results: Various procedures applicable with regards to cheek defects were used results weighed. We have been using cervicofacial appropriate with regards to large defects in this area. Flap survival was excellent with partial flaps necrosis at tip of the flaps in few cases.

Conclusion: Cervicofacial flap repair was found to be suitable with regards to large defect.

Key words: Skin tumors, Cheek defects, Cervicofacial flaps

INTRODUCTION

The skin is a large, structurally complex organ, having diverse functions. Virtually any component in it, can give rise malignant tumors. The commonest tumors originate from squamous cells of epidermis.¹⁻³ Incidence of skin cancer is on rise with more than one million reported annually in United States alone. The incidence is more common in fair skinned people than in colored people.^{4,5} Approximately 93% of basal cell lesions occur in the Head and neck region. In the head and neck basal cell lesions are distributed as follows, nose 25.5%, cheek 15%, periorbital 14%. Squamous cell lesions are distributed as follows, 45% on the cheek, 13% on the nose.⁶⁻⁸ The incidence is directly related to ultra violet exposure. It is highest in sunny climates people working out door and people not covering their parts of body with clothing's. The ultra violet radiation causes electron excitation in absorbing atoms and molecules inducing damaging chemical reaction which results in damage to diribonucleic acid (DNA), resulting in cell death and euplastic transformation⁹ These lesions have good prognosis if treated at an earlier stage, otherwise they are fatal and deforming.

Formalized knowledge of facial reconstruction has been present since the last millennium. The Byzantine physician Orbisius 1st described

procedures for facial reconstruction in the 4th century BC. The synagogue medica, a 70 volume medical encyclopedia, written by Orbisius describes the basic principles of advancement flaps for reconstruction of facial defects.¹⁰ We working in the Department of Plastic Surgery at Quetta receive a lot of patients from far flung areas including Baluchistan, parts of Sind, and Punjab .The areas of Afghanistan and Iran adjoining the border also approach Quetta for treatment. The people living in these areas are mostly illiterate, poor, and basic health facilities are scarce. Furthermore, great distances and lack of infrastructure facilities have made the conditions worse. The above factors make it very difficult for the masses to seek advice and treatment, regarding their health problems.

Most of our patients approach at a stage where disease is advanced. And in a few patients disease has reached to a stage where surgical intervention is difficult and other measures are adopted. Our department receives a great number of skin malignancies involving all parts of the body specially expose parts i.e. Face, specially cheek, canthal areas, nose and lips, are the areas receiving the bulk of sun light, resulting in increased incidence of malignancies.

Ultra violet Radiation:-The incidence of skin cancer is directly related to ultra violet radiation it is highest in sunny climates, in people with light complexion. Here the radiation induced chemical change in DNA is responsible for cell death and new plastic transformation. The effects of ultra violet

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radiation are reduced by the presence of hair, thick stratum corneum and melanin. The thinning and the holes in the ozone layer has increased the hazards associated with ultra violet exposure resulting in great increase in number of skin malignancies.⁷

Ionizing Radiation: Ionizing radiation is also associated with skin cancer which include X-Rays, Gamma Rays and particulate radiation i.e. electrons, protons neutrons and heavy nuclei.⁷

Chemical Carcinogens: Chemical carcinogens such as Arsenic psoralens nitrogen mustard are also related. Carcinogenesis occurs through bio-chemical interaction i.e. covalent bonding of carcinogen with cellular macro molecules.⁷

Genetic Determinants: They play a major role in the pathogenesis.

Xeroderma pigmentosum: An inherited condition xeroderma pigmentosum, is characterized by ultra violet induced DNA damage resulting in multiple epitheliums with subsequent malignant change.⁷

Albinism: With hypo pigmentation of skin, hair and eyes. There is increased risk of squamous cell and basal cell carcinoma.

Among the skin cancer the three main types, most prevalent are

- **Basal Cell Carcinoma** is thought to originate from pluri potential stem cells within epidermis. Its commonest among the skin tumors. Occuring mostly on the sun exposed areas although it may arise at any other site. It may appear as a nodular ,ulcerated lesion , which may be pigmented .Sometimes it appears as a yellow white lesion with shiny surface and ill defined borders (morpheaform)having greater chance of recurrence after surgical excision. Overall they have an excellent prognosis if treated early .If neglected they may result in extensive destruction and death⁵.
- **Squamous Cell Carcinoma:** It is second commonest skin malignancy derived from epidermal keratinocytes. It presents a significant risk of metastasis and higher mortality. Arises in greater frequency in fair skinned people at sun exposed sites (ear, face, neck, arms, dorsal hands). Chronic inflammation and infection are also associated with these lesions. Tumor grade is crucial in assessing outcome well differentiated lesions have a better out come as compared to poorly differentiated lesions⁵.
- **Malignant melanoma:** A malignant tumor of melanocytes occurs predominantly in middle aged elderly. Incidence is on the rise at 4% per annum in United Kingdom. At least one third of lesions arise in a pre existing naevus .prognosis is related to radial growth /depth in millimeters of the lesion determined on biopsy.⁵

PATIENTS AND METHODS

Most of the patients were received in the outdoor Department of Plastic Surgery and Burns. Patients were admitted to the Department of Plastic Surgery and Burns at Bolan Medical Complex Hospital Quetta from April 2003 till to December 2009. Patients were classified according to the age, sex, occupation, presentation and site of the disease and type of tumor. Diagnosis was made on the basis of clinical presentation and histopathology. Patient's age was between 45-70 years. Suction drains were placed to avoid any collections

RESULTS

Study consist of thirty cases operated from January 2003 to December 2009 in almost all the cases the defect was located at the cheek either involving lower eyelid or the inner canthal area. Twenty two patients were reconstructed using cervicofacial flap. This procedure involves extensive dissection of the cheek, pre auricular and retroauricular area and the neck and extending medially downwards to the chin, for flap transposition and advancement. We observed no failure, all the flaps survived well except partial necrosis at the tip of the flaps, which later healed well? Cases with positive margins were referred for radiotherapy. Five patients were treated using, Thick partial/Full thickness skin grafts. Local cheek flaps were used in 3 cases. Lower eye lid ectropion was observed in five cases, out of which in three cases lower eye lid was completely excised due to tumor invasion and remnant conjunctiva was released and stitched on to the flap .In one patient enucleation of eye had to be done and graft coverage achieved. Cheek contour deformity/mild facial contour deformity and hair growth on the cheek and adjacent lateral wall of nose occurred in a few cases which was unavoidable. Recurrence was observed in one case (Tables 1-3, Figs.1-7).

Table 1: Number of case according to etiology

Cases	No.	%
Basal cell carcinoma	26	
Squamous cell carcinoma	2	
Pigmented Navi	1	
Malignant Melanoma	1	

Table 2: Procedures adopted with regard to Defects/etiology

Procedure	No.	%
Skin graft	5	
Local flaps	3	
Cervicofacial flaps	22	
Distend flaps	-	-

Table 3: Frequency of complications

Complication	No.	%
Recurrence	1	
Hematoma	-	-
Infection/dehiscence	1	
Flap necrosis/partial/ complete (partial at the tip of flaps)	3	
Lower eyelid ectropion (in 3 cases lower lid had to completely excised)	5	
Others scar contracture, hair growth and bulk deformity	2	



Fig.1: Basal cell Carcinoma involving the lower eyelid, cheek, lateral canthal area



Fig.2: Complete excision of the lesion, wound closure achieved by cervical facial flap



Fig.3: Follow up of the same patient



Fig.4: Follow up of the same patient



Fig. 5: Basal Cell carcinoma involving the cheek lateral wall of nose and upper lip



Fig 6: Cevico facial flap reconstruction



Fig. 7: Lateral view of same patient. Afghan National Patient lost for follow up could not achieved

DISCUSSION

Cheek is a Large cosmetic unit demarcated by several junction lines medially at the nasofacial groove and melolabial crease, laterally at the pre auricular crease, superiorly at the orbital rim and superior zygomatic arch and inferiorly at the mandible.³ Further more cheek is further sub divided in to sub units ,but sub unit principle of reconstruction cannot be applied as in nasal reconstruction as the sub units are themselves are less distinct aesthetic units of the cheek, sub orbital and preauricular and bucomandbular area.^{4,5} Cheek reconstruction demand special consideration to the free margins of the eye lid as pull on it may produce ectropion. Although small defects in this area are reconstructed using small local flaps, as the laxity and vascularity of this region enables closure of defects^{13,14}.

But most of the patients present at an advanced stage where growth has extended and attained a large size, here local flaps cannot achieve the

desired result. In these cases where the tissue requirements are greater cervicofacial flap repair was used. This technique has proved itself to be adequate with superior aesthetic results. In some of the cases some degree of ectropion was present which seemed to be unenviable due to tumor invasion of the lower eye lid which was partially or completely excised.^{15,16} The remnant conjunctiva was undermined released and stitched on to the cheek flap. In a few cases the lower lid ectropion was partially corrected with free graft¹⁷⁻¹⁹

CONCLUSION

We have been using free skin grafts, local cheek flaps, and cervicofacial flaps with regards to defects on the cheek, lower eye lid .We found cervicofacial flap repair most adequate aesthetically with least donor area deformity, providing excellent coverage in large defects. Cervicofacial flap is a versatile reconstructive technique in head and neck surgery. It provides a simple solution to a range of cheek defects. It is an excellent alternative to regional or free tissue transfer. It can be used simultaneously when doing parotidectomy and neck dissection or other procedures such as cross facial nerve grafting and other facial reanimation procedures. Furthermore this being a composite flap i.e. musculofasciocutaneous has an excellent vascularity due to axial blood supply.

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