

A large squamous cell carcinoma over the zygoma- a rare presentation reconstructed with mustarde advancement rotation cheek flap

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Abstract

Background & Objectives: The use of Mustarde advancement rotational cheek flap for moderate to advance facial defects is a simple and effective alternative among other local, regional, free flaps like rhomboid flap, bilobed flap, cervical flap and for repair of the large defect of the facial skin with microvascular free flap like rectus abdominis free flap are used for facial reconstruction. Instead of using more complex free flaps, this flap can be considered as an alternative.

Method: Mustarde advancement rotational cheek was harvested by carrying superior part of incision cephalad towards temple.

Result & Interpretation: Defect site showed satisfactory healing with reduced morbidity with satisfactory result.

Conclusion: Mustarde advancement rotational cheek flap proved to be useful alternative for surgeons for reconstruction of large facial defects with minimal morbidity. It can definitely replace the other complex flaps in most instances.

In this article, we report the use of Mustarde advancement rotational cheek flap to reconstruct the facial defect.

Keywords: Mustarde Advancement Rotation Cheek Flap Ectropion, Epiphora, Tarsal Plates

Introduction

Squamous cell carcinoma with its diverse range of clinical presentation can occur anywhere in the head and neck region. More than 70% of all tumors in the head and neck regions usually occur on upper face region though it can occur anywhere where there is squamous cell epithelium. Cutaneous squamous carcinoma is the second most commonly occurring tumor of skin after basal cell carcinoma. It has various clinical presentations ranging from erythematous plaque like lesion to infiltrative tumors and sometime confused with basal cell carcinoma when it is nodular with ulceration.⁽¹⁾

The gold standard treatment management for most of the head and neck cancer is the surgery that consists of wide local excision of the lesion with adequate margins followed by the reconstruction of the defect. For selecting the best treatment modality, a surgeon must have detail knowledge about the variation and biologic behavior of the cutaneous squamous cell carcinoma.

Various flaps like Mustarde advancement rotation cheek flap, rhomboid flap, bilobed flap, cervical flap and for repair of the large defect of the facial skin with microvascular free flap like rectus abdominis free flap are used for facial reconstruction.⁽²⁾ One of the most versatile flap among above flap for reconstructing orbito-palpebral-cheek defects after surgery is the Mustarde advancement rotation cheek flap. The technique was first described by Mustarde in 1971 and then latter popularized by Callahan & Callahan in 1980. This technique is often used to reconstruct the full thickness defect of lower eyelid and cheek.⁽³⁾

This case report describes how a patient with the cutaneous squamous cell carcinoma over left zygoma was surgically managed with the resection of the lesion and reconstruction of the defect with the local flap by Mustarde advancement rotation cheek flap.

Case Report

A 80 year old female patient reported to Sri Ram Cancer Centre at Mahatma Gandhi medical college, with chief complaint of painful swelling on the left side of face since 6 months. Clinical examination revealed a solitary oval swelling on the left side of face present over the zygoma. A lesion was 4 x 5 cms in size extending 10 mm away from the palpebral fissure superiorly, inferiorly 25mm away from the ala of the nose, 20mm away from the nasolabial crease anteriorly and 50mm away from the preauricle region. Skin over the lesion was ulcerated and was infected with purulent pus discharge. On palpation, inspectory findings were confirmed. Lesion was bony hard with well-defined margins and was fixed to underlying structure. Clinically, there was no sign of lymphadenopathy. A clinical provisional diagnosis of cutaneous basal cell carcinoma was made (**Fig. 1**).



Fig. 1: Extra oral lesion presentation

The differential diagnosis of carcinoma of skin is cutaneous squamous cell carcinoma, malignant melanoma, sebaceous carcinoma, microcystic adnexal carcinoma was considered.

FNAC revealed malignant epithelial cells exhibiting moderate to severe nuclear atypia, hyperchromatism, high in cytoplasmic nuclear ratio, deep basophilic cytoplasm with irregular nuclear membrane and prominent nucleoli and hence, was diagnosed as squamous cell carcinoma.

Patient was recommended Ct head and neck and chest radiograph. No significant findings were present in chest radiograph and clinical staging was assigned as T₂N₀M₀.

Ct scan revealed heterogeneous enhancing mass of size 37 x 27 x 18 mm in the left zygomatic region not involving the underlying bone. The zygomatic bone appeared to be normal with intact cortical margins. The mass was extending into the anterior margins of the masseter muscle. (Fig. 2)

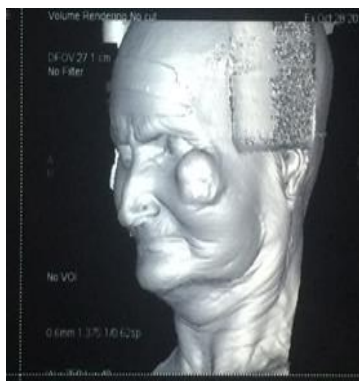


Fig. 2: 3D CT scan of face

The treatment plan was to surgically excise the tumor with adequate margin and reconstruction with local flap i.e. Mustarde advancement rotation cheek flap and post-operative adjunct treatment with radiotherapy.

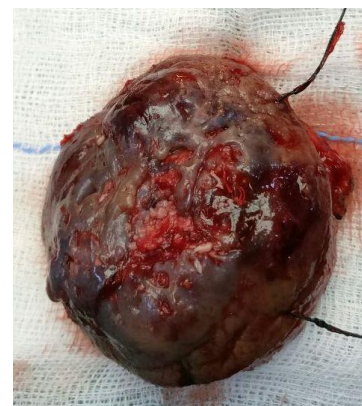
Materials and Methods

Under general anesthesia nasotracheal intubation was done. Part preparation was done with povidone iodine. Pre-operative assessment for wide local excision and reconstruction with Mustarde advancement rotation cheek flap was done.

Marking of the lesion were followed by the No 15 blade. Margins of 1cm were maintained throughout. Encountered facial vessels and parotid duct were ligated and divided. Masseter muscle was partly excised from its origin. Lesion was thoroughly assessed surgically and subperiosteal plane of dissection was achieved from inferior to superior direction. Infra orbital nerve was sacrificed. Dissection was performed meticulously near the orbit taking care of tarsal plates. Few part of lower lateral tarsal plate was excised. The primary specimen was sent for frozen section examination and margins were cleared through out (Fig 3a, b). The obtained surgical defect was about 7 x 5 cm and thus defect was prepared for reconstruction (Fig 4).



A



B

Fig. 3a: Incisional marking, b: Wide local excision



Fig. 4: Surgical defect

The surgical defect was assessed and marking of incision was done. The superior aspect of incision was carried cephalad towards the temple site to prevent the tension along the suture line. Thus, drooping of the lateral canthus of eye was prevented. The incision was further extended into the preauricular skin crease. Plane of dissection was superficial to parotid gland, preserving the blood supply in the subcutaneous tissue. Sufficient mobilization of the skin in forehead region and temporal was done to facilitate closure and to prevent tension on the suture line (Fig. 5). The flap was now rotated anteromedially to cover the surgical defect (Fig. 6). Primary closure was achieved with simple interrupted subcutaneous sutures to minimize tension on the skin closure (Fig. 7). Mini vac drain was placed to prevent unwanted collection.



Fig. 5: Incisional marking for Mustarde flap



Fig. 6: Flap advancement & rotation



Fig. 7: Mustarde cheek advancement & rotational flap harvest

Result

Post operatively, no functional complications were present. Flap showed peeling of skin along the margins which was minimally excised and paraffin gauze (Jelonet) dressing was done for few days. Patient had minimal epiphora as a result of severance of nasolacrimal duct. Esthetically, acceptable result was obtained with minimal morbidity (Fig. 8).



Fig. 8: 15th POD

Discussion

Full thickness defect reconstruction of cheek requires restoration of skin and soft tissue defect and can be challenging for surgeons. Factors like size, shape, site, thickness and involvement of deeper structures are deciding factors for the proper choice of reconstructive procedure. Wide range surgical approaches have been used to reconstruct the full thickness defect of cheek like rhomboid flap, bilobed flap, cervical flap, cervicofacial flap, for repair of the large defect of the facial skin with microvascular free flap like rectus abdominis free flap are used for reconstruction.

Few indications of the Mustarde advancement rotation cheek flap are: 1) reconstruction of the full thickness defects lower eyelid which requires two basic layers like skin covering layer and mucous secreting layers any one of these layers should be in form of flap with continuous blood supply. 2) Surgical defects

situated in the infraorbital region and medial part of cheek.⁽⁴⁾

The aim and objective was to preserve the lower tarsal plates to maintain the support for lower lid, to attain the acceptable and significant level of esthetics along with the normal function. Considering the patient age, functional expectations, economic status we planned for Mustarde advancement rotation cheek flap. The flap is based on the terminal branches of facial artery.

The advantage of Mustarde flap are- good color match, ability to reconstruct the large defects in one stage. The cheek flap disadvantage is insufficient blood supply to its distal end. To overcome such problem is to use the deeper plane for raising the flap.^(5,6) Hence, we raised the flap deep to superficial musculoaponeurotic system (SMAS) to achieve adequate blood supply. Following proper flap design and its mobilization in a correct plane such problem rarely occurs. We only noted peeling of skin from its distal end which was managed by using paraffin dressings (Jelonet).

Callahan reported 64% incidence of ectropion reconstructed with Mustarde cheek rotation flap especially in lower eyelid defect reconstruction.⁽⁷⁾ In our case lower eyelid and tarsal plates were intact only of lower lateral tarsal plate was excised minimally. Thus, support for lower eyelid was maintained.

In lower lid reconstruction cases medial and lateral canthopexies is of great importance. This is to avoid malpositioning of lid due to local factors like counteracting forces like gravity, oedema and early or late wound contracture which can displace the

periorbital soft tissues.⁽⁸⁾ In our case lower lid was intact as the lesion was away from it.

Conclusion

The unique properties of Mustarde Cheek advancement rotational flap makes it a reliable flap for reconstruction. It proved to be beneficial in reconstructing surgical defects in one stage. The flap choice should be according to the site, size, and need of the patient. In later stages, minor ectropion, epiphora can occur which can be corrected if needed.

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