

Utilization of The Forehead-Flap to Repair Skin Defect Following Maxillectomy: A Case Report

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I. Introduction:

Local flaps have been commonly used in the reconstruction of facial defects left after excision of primary tumours. The forehead flap (median and laterally based) can be used to close defects in the cheek and floor of the mouth, its pedicle can be used to close defects in the maxilla. In a seventh century Indian medical document, the *Sushruta Samita*, describes a technique of using a flap from the forehead for nasal restoration. The forehead flap is relatively simple in concept and technique. It is widely used for nasal reconstruction. The importance of this flap is due to its versatility. This flap has been described as the most robust and dependable flap. In addition, it has the advantage of having large arc of rotation. Further, it provides good color matching at the host site, hair-free pedicle, and matching tissue texture. The severe arc of rotation usually does not compromise the blood supply, thus good vascularity is an additional benefit for wound healing. The flap is basically a paramedian flap and utilizes single supratrochlear/supraorbital vessel

II. Case Report:

A 51 year old male was admitted in the head and neck department of BBCI with chief complaint of swelling Right sided cheek for last 2 months. Proper clinical evaluation and investigations were done. The skin overlying the maxillary mass was fixed. CECT scan faciomaxillary region and biopsy was done from alveolar mass that came to be differentiated squamous cell carcinoma. The disease was staged as cT4aN0M0. CECT (fig 1) showed soft tissue mass eroding Left maxillary alveolus, hard palate and anterior portion of zygoma. Preoperative photographs were taken (fig 2 and fig 3).

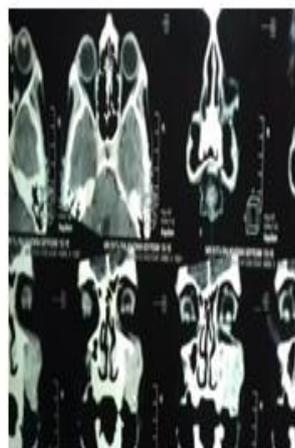


Fig 1.



Fig 2



Fig 3

A modified lateral rhinotomy incision was made (fig 4) so as to include the skin defect and the left sided total maxillectomy with overlying skin excision with adequate margin was done. There was a (3 × 4 cm) defect not possible for local repair so laterally based forehead flap was used to repair with two staged procedures living behind controlled fistula as shown in the figures (fig 5 and fig 6). A controlled fistula was left over to get epithelialise and was planned for lateron closure so to promote tension free wound healing. Soft tissue defect over forehead was covered with SSG (split skin graft)



Fig 4



Fig 5



Fig 6



fig 7

After a period of 3 weeks the forehead pedicle was detached and the fistula over the maxilla was also (figure7). Post operatively patient was put on adjuvant radiotherapy with concomitant chemotherapy as post-operative HPE report showed perineural invasion.

III. Discussion

Forehead flap was used by Sushruta in 600 BC for nasal reconstruction. Reliability of success of this flap is a major advantage which comes from the adequate blood supply and local availability of feeder vessels, i.e. supratrochlear/supraorbital vessels, and is a reason of its popularity¹. This flap has been described as the most robust and dependable flap². The primary blood supply is through supratrochlear vessels with multiple anastomoses to the dorsal, and supraorbital and angular arteries. Usually the forehead flaps are about 5 cm in height from the eyebrow to the hairline; this measurement may be useful in estimating the tissue availability for reconstruction. It is used for reconstruction of defects which are more than 2 cm in diameter³. The flap is basically a two-stage procedure. Stage one involves marking for designing of flap, elevation, and insertion. Stage 2 involves the division of pedicle and reshaping of the tissues to achieve the normal anatomy of the area. With all these advantages, there are two main limitations, viz., and the arc of rotation may compromise the blood supply of the flap. In a study done by **M. Frans Noorman van der Dussen**⁴ the forehead flap can be used to close defects in the cheek and floor of the mouth, its pedicle can be used to close defects in the maxilla. This method was successfully applied in six patients. Less than 1% of our cases in the deptt of Head and Neck oncology are of Nose and PNS. The case on discussion is a rare presentation requiring repair of the large skin defect. Looking into the size of defect we thought forehead flap will be better choice.

References

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