

Regionally metastatic squamous cell carcinoma requiring cheek reconstruction: a case report and review of cervicofacial flaps

Travis Weinsheim D.O.¹, Jimmy Pham D.O.¹, Christopher Fundakowski M.D.²

¹Department of Otolaryngology, Philadelphia College of Osteopathic Medicine, Philadelphia, PA

²Department of Otolaryngology, Abington Jefferson Hospital, Abington, PA

Program Director: John McGrath D.O.

ABSTRACT

The largest unit of the face is the cheek. Not surprisingly, reconstruction of this portion of the face is challenging both for aesthetic and functional reasons. The reconstructive ladder includes a large number of options for defects involving the cheek. Of the many options for cheek defects, cervicofacial flaps have remained popular since they were originally described by Esser in 1918 and then modified by Juri and Juri in 1979.

CASE

An 81 year old male presented to Otolaryngology with several months of an enlarging wound on the left side of his face. The patient had a remote history of a cutaneous squamous cell carcinoma of the left temporoparietal scalp that was locally excised without further management. Since the excision, the patient had experienced recurrent swelling of the preauricular area that was managed by an outside physician with multiple rounds of incision and drainage. The patient was referred to a head and neck surgeon after the patient experienced an enlarging wound that encompassed a portion of his ear and cheek. Imaging revealed a 4.7 centimeter aggressive appearing neoplasm that involved the ear and superficial lobe of parotid gland with a separate necrotic 1.4 cm lymph node of the superficial lobe of parotid gland. After physical exam and review of multiple imaging modalities the patient was staged as T0N3bM0. The patient later underwent left total parotidectomy, partial auriculectomy, selective neck dissection with cervicofacial flap for reconstruction of the soft tissue defect.



Figure 1. Preoperative appearance of lateral cheek.

Figure 2. Coronal view of computed tomography showing aggressive 4.7cm appearing neoplasm involving superficial lobe of parotid, cartilaginous external auditory canal and ear.

INTRODUCTION

A large portion of the middle third of the human face is composed of the cheek. This component of the midface contributes to both oral competence and structure of the midface. Some defects which encompass the lateral portion of the middle third of the face can be closed primarily. Full thickness defects of the medial portion of the cheek secondary to traumatic or neoplastic processes require free tissue transfer, while partial thickness defects can be reconstructed with local and regional flaps¹.

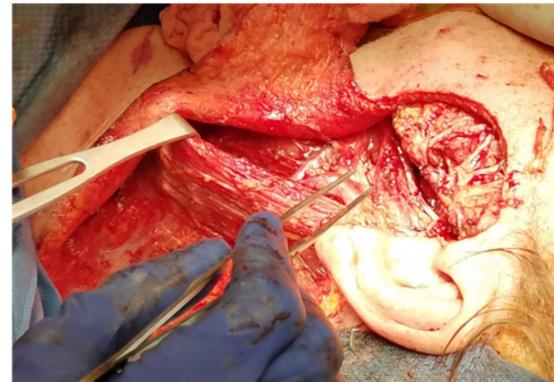


Figure 2. Intraoperative photo of defect resulting from total parotidectomy, partial auriculectomy and selective neck dissection.

INDICATIONS AND CONTRAINDICATIONS

The use of the cervicofacial flap is dependent upon the extent of the defect in terms of both surface area and depth. In addition to being a very useful flap for medial cheek defects, the flap can be used for partial thickness defects in the upper one third of the face in combination with other local flaps¹. Classic uses for this flap include the following: partial thickness defects from 3 to 10 cm, temporofrontal defects, brow defects, and missing tissue resulting from orbital exenteration. This flap should be avoided in patients with active soft tissue infections. Additionally, patients with severe systemic comorbidities may prevent the use of this flap. The presence of a smoking history in addition to history of prior irradiation to neck are relative contraindications and these patients should be carefully selected².

TECHNIQUE

Traditionally, the cervicofacial advancement-rotation flap is designed by starting around the most inferior portion of nasolabial groove and extending this superolateral along the zygomatic arch with a subsequent turn around the ear lobe and inferiorly along the hairline. The dimensions of flap may be modified depending on the size of the defect. A pectoral extension may be used to gain more mobility of the flap. Dissection superior to zygomatic arch is performed subcutaneously to avoid injury to frontotemporal branches of the facial nerve. Inferior to this, the dissection may be performed subcutaneous or incorporate the superficial muscular aponeurotic system (SMAS). Interestingly, there has been no evidence of increased rate of facial nerve injury when deep plane dissection is used⁶. Inferiorly, the dissection is in the subplatysmal plane. After adequate mobility and the flap can be approximated to the defect, a tension free closure should be performed. Of note, a posteriorly based cervicofacial flap may be designed.



Figure 3. Immediate postoperative appearance after use of cervicofacial flap for reconstruction of soft tissue defect.

DISCUSSION

In a study performed by Rapstine et al., the cervicofacial flap was the second most common method of reconstructing partial thickness cheek defects⁵. The procedure itself requires a thorough understanding of head and neck anatomy. Complications of this procedure include hematoma, necrosis of the distal tip, a standing cone deformity, facial nerve injury and ectropion. The patient who underwent this procedure had an uneventful course and was subsequently discharged on postoperative day one. As there was a portion of the external auditory canal and ear that was involved with the squamous cell carcinoma, the flap was inset into this defect. Fig. 4 shows the patient after three months. The distal portion of the flap was inset into the ear canal and the external auditory canal remained patent postoperatively.



Figure 4. Postoperative appearance after three months

CONCLUSION

The cervicofacial is a random, rotation-advancement flap that uses skin laxity in the region of the preauricular tissue, neck, and cheek. This flap may be used in defects after traumatic injuries or defects after ablative surgery. Advantages of this flap for reconstruction include the following: color and texture are similar to native tissues, incisions are relatively inconspicuous and exposure allows access for lymphadenectomy.

REFERENCES

1. Sakellariou A, Salama A. The use of cervicofacial flap in maxillofacial reconstruction. *Oral Maxillofac Surg Clin North Am.* 2014;26:389-400.
2. Moore BA, Wine T, Nettekville JL. Cervicofacial and cervicothoracic rotation flaps in head and neck reconstruction. *Head Neck* 2005;27(12):1092-101.
3. Esser JF. *Rotation der Wange.* Leipzig (Germany): Vogel; 1918.
4. Juri J, Juri C. Advancement and rotation of a large cervicofacial flap for cheek repairs. *Plast Reconstr Surg* 1979;64(5):692-6.
5. Rapstine ED, Knaus WJ, Thornton JF. Simplifying cheek reconstruction. *Plast Reconstr Surg* 2012; 129(6):1291-9.
6. Tan ST, Mackinnon CA. Deep plane cervicofacial flap: a useful and versatile technique in head and neck surgery. *Head Neck* 2006;28(1):46-55.