



Cheek and Neck Reconstruction Following Cutaneous Neoplasm Resection

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12.1 Introduction

Surgical reconstruction of soft tissue defects following resection of cutaneous neoplasms in the cheek and neck area can be technically challenging. Reconstruction of resultant composite tissue defects must start by identifying missing layers and the characteristics of the surrounding tissue. In deep defects, it is important to consider the middle lamella or facial musculature. Functional deficits following cutaneous tumor resection must be carefully considered. In the case of full-thickness defects, it may also be necessary to reconstruct mucosal lining and possible bony defects. The surrounding skin should be assessed for color, texture, thickness, and hair-bearing status. Following a thorough assessment of the wound, an appropriate reconstructive plan can be formulated.

Reconstruction should only commence when the tumor bed has been appropriately cleared. Until such time, the created wound may be treated with moist dressings or skin substitutes as temporary coverage. It is critical to maintain all

potential donor sites until a time when the final reconstruction will not be subjected to the need to resect further margins from the original wound.

A wide range of reconstructive modalities are available for the cheek and neck region including primary closure, skin grafts (both split and full thickness), local flaps, distant flaps, and free flaps (see also Chap. 6). The reconstructive option chosen for a defect should restore appropriate soft tissue volume and restore contour while minimizing the amount of scar. Importantly, there must be minimal distortion of other facial subunits including the eyelids, nose, and lips. In order to achieve good aesthetic and functional results in cheek and neck reconstruction, it is essential to be versed in all the aforementioned modalities of reconstruction. In complex cases, the surgeon may even require multiple reconstructive modalities and stages to achieve desired results.

Preoperative planning in cheek and neck reconstruction is essential. Given the aesthetic nature of facial anatomy, reconstruction of even small defects in the face may lead to significant deformation of the surrounding tissue. Optimal reconstruction restores previous facial aesthetics. Potential complications following reconstruction, especially within the cheek and neck areas, include loss of oral competence, functional mouth opening, and lower eyelid positioning and function. Secondly, the patient's overall health must be carefully considered. Nutritional status, smoking status, and the presence of comorbidities may compromise the reconstructive outcome.

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12.2 Anatomic Considerations for Cheek and Neck Reconstruction

The head and neck region benefits from a robust and richly arborized blood supply, allowing for primary closure or local flap reconstruction of most superficial defects. The primary arterial supply is based on the external carotid artery system, with the majority of the blood supply to specifically the cheek and neck region dependent on facial artery branches and perforators. The superficial temporal artery also contributes vascular inflow to the lateral aspect of the cheek. The transverse facial artery, a branch of the maxillary artery, anastomoses with the facial artery in the medial cheek and provides blood supply to this area as well. With regard to the neck, vascular inflow is primarily based on the submental and superior thyroid arteries, as well as myocutaneous perforators from the strap muscles. Venous drainage is provided by the internal and external jugular veins. This system has rich system of anastomoses and allows for excellent venous drainage.

The cheek and neck regions are each distinct aesthetic subunits of the face. The cheek represents the largest percentage of any facial subunit, thereby making restoration of contour and skin in this area tantamount for an aesthetically pleasing appearance. Cabrera and Zide divide the cheek itself into three overlapping zones: suborbital (zone I), preauricular (zone II), and buccomandibular (zone III) (Fig. 12.1) [1, 2]. The suborbital zone is bordered by the nasolabial fold medially, the anterior sideburns laterally, and the gingival sulcus inferiorly. The preauricular zone comprises the lateral cheek and extends from the malar eminence medially to the junction of the helix and cheek laterally and the skin overlying the mandible inferiorly. The buccomandibular zone includes the oral lining and consists of the lower cheek inferior to the suborbital zone and anterior to the preauricular zone. Defects in all three zones can be addressed by primary closure. Large defects may require local, regional, or distant flaps. In particular, buccomandibular zone defects may require reconstruction utilizing a combination of flaps in order to restore both external skin and oral lining.

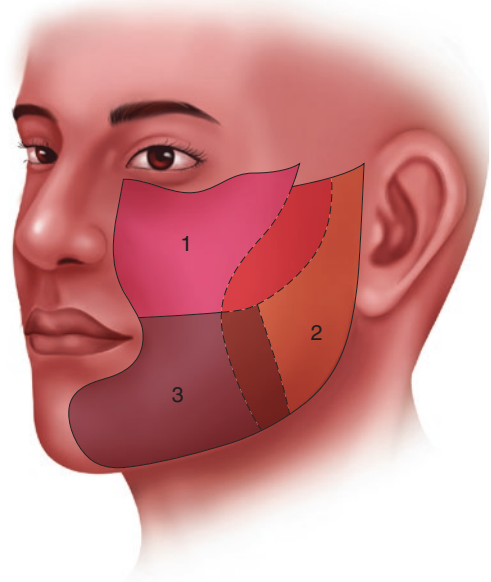


Fig. 12.1 Aesthetic zones of the cheek as originally described by Cabrera and Zide. 1 The zones are (1) suborbital, (2) preauricular, and (3) buccomandibular

The neck has thin, pliable skin that extends from the inferior edge of the mandible to the clavicles. It is commonly loose and mobile anteriorly, where it overlies the platysma muscle, and more firmly adherent lateral and posterior to the sternocleidomastoid muscle. Given its pliable nature, many cutaneous defects in the neck may be closed primarily, with or without undermining of adjacent skin.

12.3 Operative Approach to Cheek and Neck Reconstruction

12.3.1 Primary Closure

The majority of small cutaneous malignancies of the face can be treated by resection and primary closure, ideally along relaxed skin tension lines. The inherent laxity of the cheek, specifically in zones I and II, allows for undermining the defect boundaries to increase soft-tissue advancement and closure with minimal tension [3, 4]. Resection of tissue around the lesion to form a lenticular or crescentic wound can minimize

the formation of dog ears. In general, cutaneous defects of the cheek less than 30% can usually be treated by primary closure, whereas those lesions larger than this often require recruitment of residual cheek skin as an advancement or rotation flap [5]. Similarly, by undermining and advancing available local tissue, many cutaneous lesions of the neck may be closed primarily, especially anteriorly. Of note, the excellent vascularity of the head and neck area promotes optimal wound healing and aids in achieving good aesthetic outcomes. Figure 12.2a, b demonstrates a patient status post excision and primary closure of a skin lesion. The wound went on to heal with no complications and good aesthetic result (see also Fig. 10.1).

12.3.2 Tissue Expansion

Large defects in the cheek and neck region, when not amenable to immediate primary closure, may benefit from adjacent tissue expansion. An advantage of this technique is that neighboring facial skin provides the best color and texture match in facial reconstruction [6, 7]. Expander

selection and location of the expander and port pockets are key aspects of preoperative planning [8]. The incisions for expander placement should ideally be minimal in length and located away from the lesion to be excised. Furthermore, the incision should be placed as not to disrupt the vascularity of the future flap/tissue advancement. The expander itself may be placed superficial to the superficial musculoaponeurotic system (SMAS)/platysma layer [6]. The area of the expander should be equal to that of the defect. Intraoperative filling of the expander may reduce complications such as hematoma or seroma without compromising the overlying skin or soft tissue [8]. In the postoperative period, expander fills usually start at 2 weeks following expander placement and proceed once weekly after that. Typically, the expansion process is complete in 6–8 weeks and the tissue expander has been overexpanded by 30–50% to ensure sufficient tissue availability for reconstruction. At the time of reconstruction, a capsulotomy following tissue expander removal can facilitate soft tissue advancement as well as increase its pliability. Specific to tissue expansion, the most common

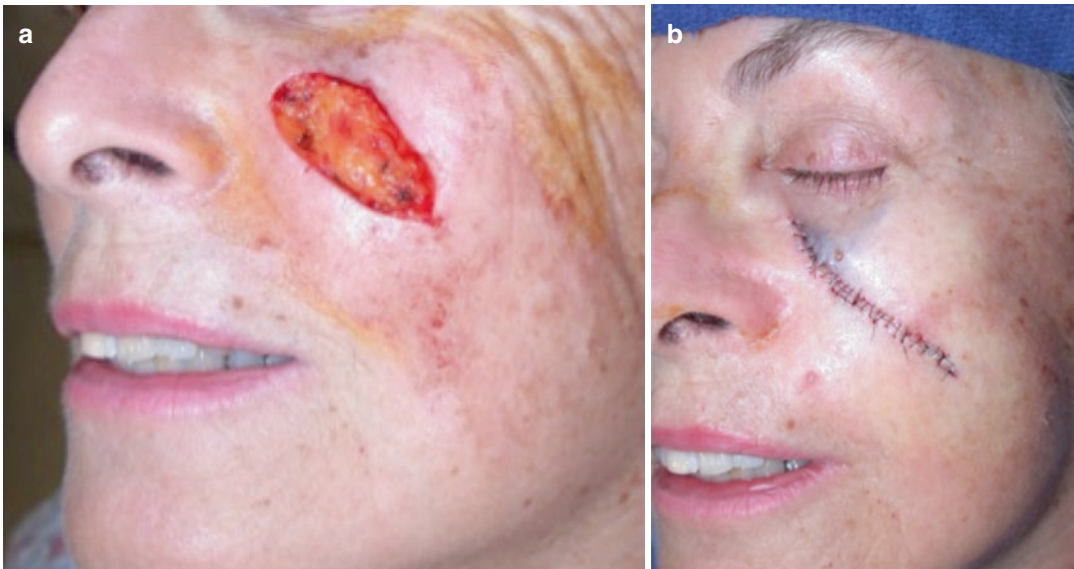


Fig. 12.2 Middle-aged female status post excision of a skin lesion (a) resulting in a full-thickness skin defect approximately 3 cm by 1.5 cm in the left malar area. The defect is reconstructed with primary closure (b). Note the

incision is longer than the original defect. This is secondary to removing excess skin upon closure to maintain facial contour

complication in the cheek and neck region is exposure of the tissue expander, often secondary to infection, necessitating removal [9, 10]. Despite these complications, tissue expansion and subsequent closure, with careful planning at each step, may still result in satisfactory aesthetic reconstruction.

12.3.3 Skin Grafts

In general, skin grafts, whether split or full thickness, provide disappointing aesthetic results in cheek and neck reconstruction following resection of cutaneous malignancies. The ultimate color, texture, and contour match are unpredictable, often appear patch-like, and are especially noticeable when they abut native facial skin [11]. Furthermore, utilization of split-thickness skin grafts may result in delayed complications, such as contour abnormality and malposition of surrounding skin and structures, such as the lower eyelid or oral commissure, secondary to progressive contraction. Furthermore, they are often pale and shiny and fail in restoring the normal contour. Full-thickness skin grafts also fail to appropriately reconstruct facial contour following skin and subcutaneous resection. The role of skin grafts in cheek reconstruction should therefore remain minimal (see Figs. 6.2, 6.6 in Chap. 6 and 10.64 in Chap. 10). They may however serve a purpose in providing temporary coverage or to facilitate the closure of donor sites when large flaps are being used.

Conceivably, for a large defect in the neck not amenable to primary closure, a skin graft may be utilized. In these cases, full-thickness grafts would be preferred. In general, for head and neck reconstruction, skin grafts harvested from the retroauricular region, neck, and scalp provide the best color match. Of note, very thin split-thickness skin grafts may be useful in improving the color match on a previously placed and healed distant flap. In these cases, the flap skin can be treated with dermabrasion and then overgrafted with a split-thickness graft from the aforementioned donor areas. It should also be mentioned that dermal substitutes,

such as Integra (Integra LifeSciences, Plainsboro, NJ), may have a role in cheek and neck reconstruction. These products provide temporary coverage while waiting for clear margins and do not exclude the possibility for any future reconstructive options. In addition, placement of a split-thickness skin graft over these substitutes, either at the time of reconstruction or subsequently, may result in an adequate aesthetic outcome [12].

12.3.4 Local Flaps

V-Y Flaps—The V-Y flap is an effective and robust technique for closing small defects in the head and neck region [13–15]. A V-Y flap transfers a skin island based on its subcutaneous vascular pedicle. Especially given the laxity in the cheek and neck, which confers excellent mobility, the V-Y flap is an excellent flap for facial reconstruction. Modifications of the originally described V-Y flap allow for the reconstruction of larger facial defects [16, 17]. Specifically, the “extended” V-Y flap adds an extension limb onto the advancing front of the flap and can be utilized to close defects in areas with less tissue mobility (Fig. 12.3a–c) [16]. Of note, in these cases, the width of the flap must be greater than the width of the defect. The length of the flap is designed to be 1.5–2 times the diameter of the defect. In general, these flaps bring adjacent tissue to fill a defect, which allows for excellent color and texture match, as well as reconstitution of a hair-bearing area (see Fig. 10.14).

Rhomboid Flap—Rhomboid flaps allow for closure of small cutaneous defects that are unable to be closed primarily [18–20]. Care must be taken during preoperative planning so that the resultant scars fall in relaxed skin tension lines. However, oftentimes, the scars lie in an unfavorable orientation and are quite conspicuous. These flaps may therefore result in a geometric shape that is not native to the face and therefore should be used sparingly [3].

Cervicofacial Flap—Cervicofacial flaps have been traditionally utilized for use in reconstruc-



Fig. 12.3 Middle-aged male presents with a 3-cm by 4-cm circular defect following Mohs resection of a skin lesion in the right malar area (a). An extended V-Y flap is designed (b). The flap is advanced and the arms are folded to close the defect (c). Long-term results demonstrate acceptable scarring, contour, and color match (d)

tion of cheek defects, particularly in zone I, or the suborbital region [21, 22] (see Figs. 10.4 and 23.7). However, the original description of the flap is not currently often utilized. This flap recruits neighboring cheek skin and therefore results in an excellent aesthetic outcome regarding contour and color/texture match. The vascularity of the flap may be based medially and inferiorly, which is beneficial in closing posterior cheek defects. A “reverse” cervicofacial flap has a laterally and inferiorly based blood supply, rendering it optimal for the reconstruction of anterior cheek defects.

In a standard, cervicofacial rotation-advancement flap, the incision originates from the superolateral aspect of the lesion, travels posteriorly just superior to the cheek, and then begins inferiorly around the sideburns and then preauricular area. The incision next passes around the lobule and earlobe, extending into the occipital hairline. Residual cheek and cervical skin recruited by the flap are rotated and advanced medially to fill the defect. The subauricular and cervical tissues are advanced superiorly to close the donor site. Distal flap necrosis may occur with this flap, especially in smokers. Raising the flap in a deep plane, below the SMAS/platysma

layer, increases flap vascularity and may decrease distal flap necrosis [23, 24] (see Fig. 10.39). This flap may also be medially based and utilize skin laxity in the anterior neck and even the chest to provide coverage for large cheek defects [25, 26].

A laterally based or “reversed” cervicofacial advancement flap is an effective way to reconstruct anterior and medial cheek defects, especially those with a more horizontal orientation. Most commonly, these flaps are utilized to reconstruct the lower medial periorbital and nasal sidewall region [5, 27]. Vascularity of this flap is provided by branches of the facial artery, which supplies the majority of the flap, and the transverse facial artery, which originates from the superficial temporal artery and supplies the superior aspect of the flap.

Schrudde et al. initially described an angle rotation flap for cheek reconstruction. This technique was later modified by Boutros and Zide and remains in use today [29]. The flap, also by design, is an anterior and inferiorly based bilobed flap. It transposes the cheek, in its entirety, and preauricular tissue as the first flap. The angle rotation flap from the subauricular region is next rotated superiorly and medially to close the donor site (Fig. 12.4a–f). This rotation also allows for sig-

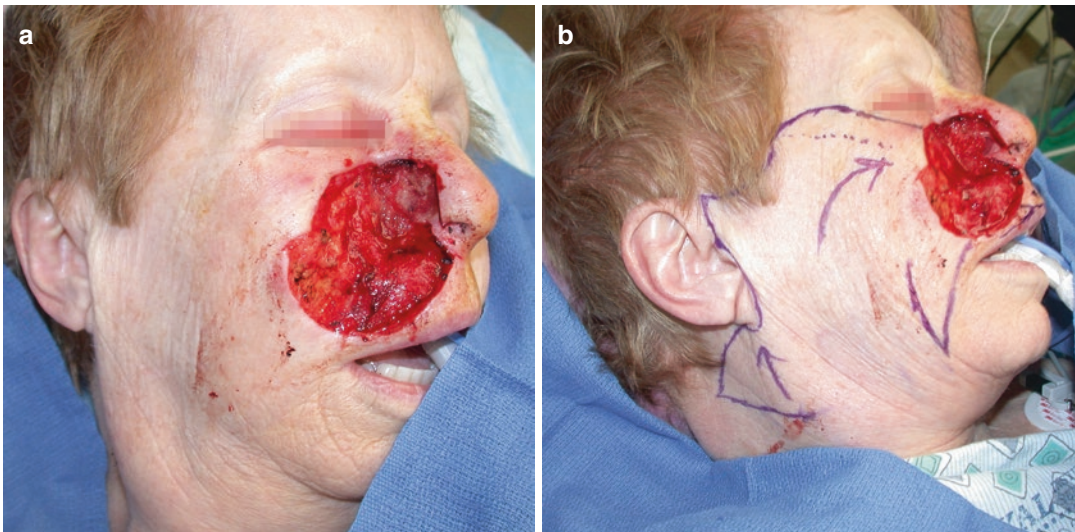


Fig. 12.4 Elderly female presents with a 7-cm diameter, full-thickness skin defect on the anterior aspect of her right cheek (a). A modified angle rotation cervicofacial flap is designed (b) and lifted in the subcutaneous plane

(c). The flap is then transposed (d) and inset (e). The patient does have mild retraction of her right alar base after the flap has healed but overall has a good aesthetic result and no evidence of ectropion (f)



Fig. 12.4 (continued)

nificant mobilization of the posterior soft tissue of the cheek region to fill in defects of the medial cheek as well as the lower eyelid. Recently, this flap was shown to be useful for perioral reconstruction as well [30]. Moreover, the angle rotation obviates the need to extend the flap into the neck for donor site closure. This limits the donor site scarring and allows for an improved cosmetic result. Furthermore, the design allows for future flap re-advancement as necessary [28].

Forehead Flap—The forehead flap is based on the supraorbital or supratrochlear pedicle and, although commonly used for nasal reconstruction, also has a role in zone I reconstruction of the lower eyelid, cheek, and even upper lip [31].

The flap should be tailored to match the defect, and a preoperative template should be made to assure sufficient flap rotation. If necessary for larger defects, a tissue expander can be placed at the donor site [32]. A benefit of the forehead as a donor site is that it can heal by secondary intent with a reasonable aesthetic outcome (see Figs. 6.1, 6.11, and 10.28).

12.3.5 Perforator Flaps

Facial Artery Perforator Flap—Hofer et al. introduced the concept of facial artery perforator flaps, which allow for a greater length of advance-

ment, transposition, and even rotation [33]. The donor site can usually be closed primarily. Perforator flaps arising from the facial artery and its branches (submental, lateral nasal, superior labial, and angular arteries) can be assessed preoperatively with a Doppler. Regarding intraoperative planning, the initial incision should allow for evaluation of the perforator before the flap is raised in its entirety and also follow along relaxed skin tension lines that can be incorporated into a local flap. If necessary, after the flap has been fully raised, the edges of the flap, particularly the distal tip, can be evaluated by application of indocyanine green fluorescence angiography to assess perfusion [34]. Facial artery perforator flaps have been utilized to close defects up to 8×7 cm in the anterior cheek [35].

Submental Artery Flap—The submental flap, now classified as a perforator flap, was originally described by Martin et al. [36]. The flap provides a thin, pliable island of cervical skin that is often well matched in color and texture, thus making it suitable for facial reconstruction. An additional benefit is the ability to transfer hair-bearing skin, which may be of benefit in male facial reconstruction of the beard area [37]. The flap is based on the submental artery branch of the facial artery. The pedicle is approximately 1.2–1.7 mm in diameter and has a pedicle length of 5–6 cm [38]. The artery usually gives off two perforators, the largest of which arises from behind the medial border of the anterior belly of the digastric muscle [39]. Venous drainage is through the accompanying submental vein, which ultimately empties into the common facial vein.

The flap uses an elliptical skin paddle in the submental region, transversing the midline. The skin paddle borders the mandibular arch superiorly and can border the mandibular angles bilaterally. The platysma muscle is included in the flap. Flaps in size up to 15 by 7 cm have been reported [40]. Furthermore, the flap can be used as a functional flap by preserving the platysma as well as its innervation from cervical branches of the facial nerve [41]. Once the submental artery pedicle or its perforator has been dissected free from the surrounding tissue, the flap itself

can be mobilized and tunneled under the facial skin in order to reach the defect. The donor site is then closed primarily and the linear scar remains inconspicuous in the submental region (Fig. 12.5a–f; see also Figs. 1.18, 23.3, 23.9, and 23.19).

12.3.6 Pectoralis Flap

First described in 1979, the pectoralis myocutaneous flap is a very versatile flap and can be utilized for coverage in mandibular reconstruction as well as large cheek and neck soft tissue defects [42]. When used for the reconstruction of full-thickness cheek defects, including oral lining, patients most often experience only mild or transient impairments in function such as speech, mastication, tongue mobility, maintenance of oral competence, and mouth opening [43]. Successful facial reconstruction has been achieved with evidence of pectoralis muscle innervation, achieved by coapting the pectoral nerve to a buccal branch of the facial nerve [44].

The dominant vascular supply to the pectoralis muscle is the thoracodorsal artery, which travels on the undersurface of the muscle and enters the muscle on the deep surface at the junction of the middle and lateral thirds of the clavicle. The muscle originates from the sternum, upper seven ribs, and the medial half of the clavicle. The muscle inserts on the humerus. The skin paddle raised can exceed the borders of the muscle and reach sizes of 26 by 16 cm [45]. The skin island can be rotated to 180 degrees following elevation for external facial defects. Full-thickness cheek defects can be reconstructed with a folded, bipaddle pectoralis flap [46]. Overall, the pectoralis myocutaneous flap is a reliable option for reconstruction for the cheek and neck region (see Figs. 6.25, 23.12, and 23.16). It may also serve as a useful pedicled flap option in patients whose medical comorbidities preclude free flap reconstruction. However, the pectoral skin does not provide a good color match. Additionally, there may be a contour deformity associated with the muscle transfer, both at the recipient and donor sites. These defects may require further revision.

12.3.7 Trapezius Flap

The trapezius myocutaneous flap is an excellent option for covering large and multilayer soft tissue defects in the cheek and neck, especially when posteriorly located. The skin island on the trapezius flap has been described multiple ways, including superior, lateral island, posterior island, vertical, and extended vertical flaps [47–50]. The

extended version of the flap can reach the anterior cheek. Regarding the muscle, the superior aspect of the trapezius muscle can be left intact to avoid any functional morbidity [51]. The blood supply is most commonly from the transverse cervical artery, although there is some anatomic variation. It should be noted that although the trapezius flap provides a reliable skin paddle, the skin paddle from the back does not well approximate facial



Fig. 12.5 Elderly male presents with a skin lesion lateral to his right commissure (a). Following resection of this lesion, the patient has a 4-cm by 5-cm defect in his right buccomandibular zone (b). A pedicled submental flap is

designed, elevated, and inset (c, d). Long-term follow-up demonstrates a well-healed flap with acceptable donor site scarring (e, f)



Fig. 12.5 (continued)

skin color, texture, or hair-bearing pattern. It can be utilized to reconstruct defects as a salvage procedure or in cases where free flap reconstruction is not a primary option due to medical comorbidities (see Figs. 6.18, 6.20, 10.40, and 23.13).

12.3.8 Supraclavicular Flap

The supraclavicular flap is a desired donor site for facial reconstruction as it provides a skin paddle with an acceptable color and texture match to facial skin. The color match is not as good as local options within the face but better than reconstruction with chest or back skin. The flap is axially based on the supraclavicular artery and has been successfully utilized as a fasciocutaneous flap for cheek and neck reconstruction [51]. The donor site is closed primarily utilizing ventral and dorsal advancement flaps. Pre-expansion of the flap with a tissue expander allows for a larger flap to be transferred, less tension at the closure of the donor site, and a thinner skin paddle as necessary [52] (see Fig. 7.4 in Chap. 7).

12.3.9 Free Tissue Transfer

Free tissue transfer is a dependable option for large defects in the head and neck area and can

provide aesthetic outcomes oftentimes better than local reconstructive options. In particular, full-thickness defects, involving oral lining, may benefit from free flap reconstruction. They can provide a large amount of tissue, potentially have less donor site morbidity, and can most often be performed as a single-stage reconstruction. However, multiple revisions may be necessary to provide good aesthetic outcomes (Fig. 12.6a–e).

Full-thickness deficits of the cheek may be addressed with a “folded” free flap. Optimal flap design requires a two-dimensional pattern based on a three-dimensional defect. To facilitate this conversion, Pribaz et al. reported creating an alginate moulage of the three-dimensional model of the defect and then wrapping it with an Esmarch bandage to determine location and size of the epithelial surfaces for the final reconstruction and serve as a template for flap design [53]. The radial forearm and rectus abdominis free flaps have both been described previously for cheek reconstruction. Radial forearm free flaps, based on the radial artery and accompanying venae comitantes, can be designed with multiple skin islands, connected by de-epithelialized skin. The flap can then be folded on itself so that the forearm skin surface can reconstitute both the intra-oral lining and the external cheek skin [54, 55]. When harvested with a segment of the palmaris

longus tendon, it can be used to suspend the flap and provide support [56]. Regarding the donor site, it should be noted that previous studies have noted significant donor site dysfunction, including weakness, paresthesia, and limited extension [57]. Subsequent studies have not substantiated

these initial findings [58] (see Figs. 6.22 and 6.23 in Chap. 6).

Rectus abdominis myocutaneous free flaps may also be utilized for full-thickness cheek reconstruction. This flap, similar to the radial forearm flap, can be designed with multiple skin



Fig. 12.6 Middle-aged male presents with a lesion surrounding his left orbit. The area of resection is marked (a). A scapular/parascapular free flap is designed and transferred to restore lost skin and soft tissue in this area (b, c). As with most free flap reconstruction for cheek defects, further surgical procedures are necessary to improve the appearance of the flap. In this patient, a hair-bearing scalp flap was transposed for sideburn reconstruction, and hair-

bearing facial skin from below the flap was brought superiorly to restore hair-bearing facial skin in the preauricular area (d). A prosthetic eye was placed in the left socket as well. Long-term follow-up demonstrates a well-healed flap with acceptable color match. Secondary operations have softened the edges and restored hair-bearing skin in appropriate areas (e)



Fig. 12.6 (continued)

paddles connected by de-epithelialized bridges and can be utilized to reconstruct many types of defects in the cheek and neck region [59]. The flap can also be folded to reconstruct full-thickness defects. The rectus abdominis flap provides more soft tissue bulk than the radial forearm flap and may therefore be beneficial in reconstructing defects where there has been significant soft tissue loss or even a maxillectomy component [60]. If necessary, the flap can be rendered functional by coaptation of intercostal nerves to buccal branches.

Another potential flap for cheek reconstruction is the anterolateral thigh free flap. This flap is based off of the lateral descending circumflex artery and can be isolated as a perforator flap or include the vastus lateralis muscle [61]. This flap reconstruction is ideally suited for lateral, full-thickness cheek defects [62]. If the defect includes the oral commissure, the anterolateral thigh flap can be utilized with other local flaps to restore oral competence [63, 64]. The anterolateral thigh flap may also be raised as a chimeric

flap, which involves the harvest of tissue supplied by multiple perforators but with a common proximal source artery. A chimeric flap can include part of the tensor fascia lata and be used to reconstruct full-thickness cheek defects and restore oral competence [65]. This technique may provide a suboptimal color and texture match to facial skin but does an excellent job in restoring the overall contour. Donor site complications for this flap are minimal [66].

Although free flap operations may be technically complex and require fastidious postoperative monitoring, often they can provide the most reliable, functional, and aesthetically pleasing reconstruction. However, they sometimes result in a bulky reconstruction that needs subsequent debulking, provide poorly color-matched skin, and have higher complication rates than local flap reconstruction [3] (see Fig. 6.21). A thorough analysis of the initial defect must be completed to identify missing layers initially, and free flap reconstruction should be considered for full-thickness defect. Functional restoration of the facial musculature can be accomplished by free flap reconstruction as well as restoration of the intraoral lining.

12.4 Complications and Management

Scar Formation—Scar formation is obviously present following every operation, but the thickness of the scars can be kept at a minimum by ensuring proper design of the reconstruction and a tension-free closure. Secondary revisions may also be useful in making scars less conspicuous, such as scar revisions or Z-plasty after the initial incisions have healed.

Flap Necrosis—This is an uncommon but potentially devastating complication. Partial or total flap loss can potentially be avoided by carefully evaluating all risk factors prior to reconstruction. Microcirculation may be compromised by multiple health factors including diabetes, smoking status, or radiation therapy. For these patients, deep-plane dissection may be beneficial

for local flap reconstruction. Meticulous technique and maintenance of all perforators during flap elevation may also promote increased flap vascularity and limit necrosis.

The distal tip of the flap should not be inset under tension. Careful preoperative planning is essential to ensure sufficient tissue is present to fill any defects. Rohrich et al. have also suggested the use of topical nitroglycerin for areas of flaps with questionable vascularity [67]. If a portion of a flap has failed, the resultant wound, depending on the area of flap necrosis, can be left to heal by secondary intent or, if extensive, may require a skin graft, flap re-advancement, or another reconstructive procedure (see Fig. 6.20).

Ectropion—Eversion of the lower lid away from the globe can occur with excessive tension at the time of closing in zone I or scar retraction (see Fig. 10.64). Prevention of this complication is tantamount to reconstruction, as correcting this deformity is difficult. Firstly, the patient should be examined intraoperatively, prior to closure, to ensure no extrinsic ectropion exists when the skin edges are aligned. If there is excessive tension or ectropion following tailor-tacking, the reconstructive plan should be modified or another modality attempted [3]. Suspension sutures may be utilized to minimize eyelid distortion [68–70], but others have argued that this may increase distal flap necrosis [3]. Sound preoperative planning and careful intraop assessment can prevent this complication, which is very difficult to treat afterwards. Chronic ectropion can lead to corneal exposure, keratinization of the conjunctiva, chronic ocular irritation, and, in severe cases, vision loss.

Disruption of Hairline—Poor preoperative planning in cheek and neck reconstruction in males can lead to an unsightly and unnecessary disruption of the hairline. Flaps should be designed in a way to prevent anterior displacement of the sideburns or beard. In areas where a hair-bearing region is resected, reconstruction with similarly hair-bearing skin should be attempted, such as with a local or submental flap.

12.5 Conclusions

Reconstruction of cheek and neck defects following cutaneous lesion excision can be a technically challenging but ultimately rewarding endeavor. A wide range of reconstructive options exist for cheek and neck reconstruction, and it is incumbent upon the reconstructive surgeon to provide an operation that results in the best color match, similar skin texture, and maintenance of contour and restores functional deficits.

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