Common Patterns of Reconstruction for Mohs Defects in the Head and Neck

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Background: Skin cancer is the most common of all cancers. Mohs surgery is an effective technique for removing common types of skin cancer. The number of patients presenting for reconstruction after Mohs surgery has been increasing in recent years. Reconstructive surgeons are faced with diverse defects of different sizes and locations. The aim of this study was to examine reconstructive methods for Mohs defects to aid in preoperative planning.

Methods: We reviewed the charts of 245 patients who underwent Mohs defect reconstruction over a period of 5 years. The patients were categorized according to the reconstructive technique (eg, flap, full-thickness skin graft, split-thickness skin graft) used in relation to anatomic location and the size of the defect.

Results: One hundred twenty-nine patients (53%) had Mohs defects of the nose. Bilobed flap reconstruction was the most common for the nasal ala (17/42 [40%]), tip (19/41 [46%]), and nasal sidewall (8/25 [32%]). Forehead flap reconstruction was most common for nasal dorsum defects (9/16 [56%]). Linear closure was the most common reconstructive technique for the cheek (18/34 [53%]), the forehead (13/20 [65%]), the chin (4/4 [100%]), the lower lip (4/4 [100%]), the upper lip (8/13 [38%]), the auricle (4/10 [40%]), the eyelid (5/8 [62%]), and the temporal region (2/5 [40%]). Composite grafting was the most common in the nasal columella (2/3 [67%]) and full-thickness skin graft for nasal sill defects (2/2 [100%]). Split-thickness skin graft was the most common in the scalp (3/6 [50%]).

Conclusions: Various options exist for Mohs repair. Understanding trends of reconstructing Mohs defects may help in planning the best method of reconstruction.

Key Words: Mohs defect, head and neck reconstruction, local flap

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It is well documented that skin cancer is the most common form of cancer in the United States. More than 3.5 million skin cancers in more than 2 million people are diagnosed annually.[1] Skin cancer rates are at least 20 times higher among whites than among African Americans.[2] In 2013, an anticipated 76,690 new cases of melanoma will be diagnosed, with about 9480 people expected to die of disease.[2] The incidence of melanoma has been increasing for the last 30 years. Prevention and early detection are the cornerstones for improved management of this malignancy. It is therefore important to recognize changes in the pattern of skin growths or the appearance of new growths. Mohs surgery, created by Frederic E. Mohs, is a highly effective microscopically controlled technique for removing common types of skin cancer.[3] The cure rate with Mohs surgery, cited by most studies, is between 97% and 99.8%.[4]

Because it is micrographically controlled, Mohs surgery minimizes tumor recurrence rates, reduces the size of surgical defects, and allows for better function and cosmesis.[5] The number of patients presenting for reconstruction after Mohs surgery has been increasing in recent years.[6] Reconstructive surgeons are faced with diverse defects of different sizes and locations. As a result of the disfigurement that excision of a gross margin might cause, surgeons may prefer excising narrower margins on the head and neck to obtain a better aesthetic outcome, which may lead to incomplete treatment and increased rates of local recurrence.[7–13] The choice and planning of reconstructive options depend on a multitude of factors including size of the tumor, size of the defect, and anatomic location of the defect. Patient factors include age, expectations, and skin redundancy. Finally, there are surgeon factors such as experience and personal preference. The purpose of this study was to characterize common patterns of Mohs reconstruction based on individual defect size and location.

MATERIALS AND METHODS

We retrospectively reviewed the records of 245 patients who underwent Mohs defect reconstruction by the Plastic Surgery service at our institution over a period of 5 years. The records were reviewed for method of closure according to anatomical site and size. The study protocol was approved by the Beth Israel Deaconess Medical Center institutional review board. Patient demographics (age, sex, race, marital status, and residence), tumor characteristics (site, size, pathological diagnosis, and primary or recurrent), and management criteria (mode of closure, timing of reconstruction, and type of anesthesia) were studied.

Tumors were categorized according to their location to cheek, chin, ear, eyelid, forehead, temple, scalp, lower lip, upper lip, nose, and body (outside the head and neck); nasal tumors were further subclassified to alar, tip, dorsum, side wall, sill, and columella. Defects crossing boundaries of anatomic units were categorized based on the anatomic unit constituting the majority of the defect size (>50%). For each anatomic location, tumors were further classified according to the reconstructive method used. The

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