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Epidemiology and Prevention of Cutaneous Cancer **247**

Miriam A. O’Leary and Steven J. Wang

Cutaneous malignancy is becoming an increasing public health burden in terms of morbidity and cost, associated with changing environmental exposures and increased longevity of the general and the immunosuppressed population. Yet the understanding of the scope of this problem is hindered by lack of robust registries for nonmelanoma skin cancer. The risk factor responsible for most of these cancers, exposure to ultraviolet radiation, can be mitigated. However, greater consensus is necessary to enact effective prevention and screening programs. New developments, including identification of biomarkers and use of artificial intelligence, show promise for targeting screening efforts.

Cutaneous Cancer Biology **259**

Alok R. Khandelwal, Kristen A. Echanique, Maie St. John, and Cherie Ann Nathan

There has been a drastic increase in the incidence of nonmelanoma (NMSC), including squamous, basal cell, and melanoma skin cancers worldwide. Most cases of skin cancer can be treated effectively with surgery; fewer than 10% of cases are advanced and may require additional therapies. A better understanding of the biology of skin cancer will help contribute to better prognostic information and identification of possible new therapeutic targets. Herein, the authors review the biology and pathogenesis of both NMSC and melanoma, focusing on critical cell signaling pathways mediating the disease and current therapeutic strategies targeted to underlying genetic pathways.

Management of Advanced Basal Cell Carcinoma of the Head and Neck **271**

Marcus Monroe and Kiran Kakarala

Basal cell carcinoma is the most common skin malignancy worldwide. While early basal cell carcinomas can be treated with simple excision, advanced basal cell cancers require a multidisciplinary management approach. The mainstay of treatment remains surgical excision with appropriate reconstruction. Some advanced tumors may require radical resections; however, extensive, high-risk surgery may be justified by the indolent biology of the disease and the likelihood of cure. Other options, such as radiation or systemic targeted therapy, may be considered in

selected patients who either refuse or are not candidates for surgery. The focus of this article is primarily on management of these high-risk cases.

Sentinel Node Biopsy for Head and Neck Cutaneous Melanoma

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Vivian F. Wu and Kelly M. Malloy

Sentinel lymph node biopsy is the most precise and accurate staging technique for malignant melanoma. This resulted from international collaborations and technical innovations across subspecialties and systematic and methodical study of real-time clinical problems. This article describes sentinel node biopsy from conception to current techniques. Indications for the procedure and evidence of its prognostic value are discussed. Controversies surrounding results of Multicenter Selective Lymphadenectomy Trial I and II and German Dermatologic Cooperative Oncology Group Selective Lymphadenectomy trial are reviewed. Head and neck melanoma is presented as a unique subsite for performing sentinel node biopsy and when considering completion cervical lymphadenectomy.

Sentinel Node Biopsy for Nonmelanoma Skin Cancer of the Head and Neck

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Rosh Sethi and Kevin Emerick

Sentinel lymph node biopsy has the potential to impact regional control and survival for high-risk cutaneous malignancy. The outcome of sentinel lymph node biopsy is a potential guide for treatment and surveillance. The population of high-risk nonmelanoma patients that will benefit from sentinel lymph node biopsy remains to be determined. Any cutaneous malignancy with a greater than 10% risk of occult metastasis should be considered for sentinel lymph node biopsy or active surveillance. Localized cutaneous squamous cell carcinoma lesions with multiple high-risk features and nearly all patients with localized Merkel cell carcinoma should be considered for sentinel lymph node biopsy.

Radiation Therapy for Cutaneous Malignancies of the Head and Neck

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Rohan Katipally, Nishant Agrawal, and Aditya Juloori

Radiation therapy plays an integral role in the management of cutaneous malignancies of the head and neck. This article highlights the use of radiation therapy in the definitive and adjuvant setting for basal cell carcinoma, cutaneous squamous cell carcinoma, melanoma, and Merkel cell carcinoma. Themes that emerge include the overall efficacy of radiation therapy as a local therapy, the relevance of cosmesis, functional outcomes, late toxicities as secondary end points, and the multitude of treatment modalities that are used.

The Role of Systemic Therapy in Advanced Cutaneous Melanoma of the Head and Neck

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Melissa A. Wilson and Leslie A. Fecher

The treatment of advanced melanoma has changed dramatically over the last decade. With the discovery of activating BRAF mutations and the development of targeted therapies and checkpoint inhibitors, the overall survival of patients with advanced melanoma has improved. This article

provides an overview of systemic therapies, including the pivotal agents that have led to these advances.

The Role of Systemic Therapy in Advanced Cutaneous Squamous Cell Carcinoma 343

Caitlin P. McMullen and Thomas J. Ow

Systemic therapy for patients with head and neck cutaneous squamous cell carcinoma (HNSCC) generally is used for patients with advanced disease and most often employed for patients in the palliative setting when disease is unresectable and/or widely metastatic. Cytotoxic agents and epidermal growth factor receptor pathway targeted therapy have been utilized most commonly, with few clinical data to support their efficacy. Adjuvant postoperative chemoradiation with platinum has been called into question based on recent data. Programmed cell death protein 1 receptor immune checkpoint inhibitors have demonstrated profound activity in HNSCC, and cemiplimab and pembrolizumab now are approved for use for unresectable/metastatic disease.

Surgical Management of Merkel Cell Carcinoma 357

Miriam Lango and Yelizaveta Shnayder

The incidence of Merkel cell carcinoma (MCC) continues to increase. Understanding of MCC biology has advanced rapidly, with current staging providing valuable prognostic information. MCC treatment often is multidisciplinary. Surgery remains an important component in the staging and treatment, most commonly involving wide excision of the cancer and sentinel lymph node biopsy. Lymphadenectomy is used to treat nodal disease. Radiotherapy enhances locoregional control and possibly survival. Systemic therapies, in particular novel immunotherapies, may be promising in the treatment of advanced or recurrent and metastatic disease.

Cutaneous Sarcomas 369

Brittney N. Tillman and Jeffrey C. Liu

Cutaneous sarcomas represent a rare group of tumors presenting in the head and neck. In this article, we discuss specific sarcoma tumor types and their presentation, pathogenesis, histologic findings, and management recommendations. Tumors to be reviewed include dermatofibrosarcoma protuberans, atypical fibroxanthoma, pleomorphic dermal sarcoma, cutaneous leiomyosarcoma, and angiosarcoma.

Reconstruction of Cutaneous Cancer Defects of the Head and Neck 379

Issam N. Eid and Oneida A. Arosarena

The goals of cutaneous malignancy reconstruction are to restore the best functional and aesthetic outcome. Reconstruction should aim to restore all defects layers. While local flaps are the mainstay of head and neck Mohs reconstruction, the range of reconstructive options varies from healing by secondary intention to microvascular free tissue transfer.

Cutaneous Head and Neck Cancers in the High-Risk Immunosuppressed Population 397

Karen Y. Choi and Cecelia E. Schmalbach

The immunosuppressed (IS) population encompasses a diverse cohort of patients to include iatrogenically immunocompromised organ transplant recipients as well as patients with chronic lymphoid malignancies, human immunodeficiency virus/acquired immunodeficiency syndrome, and autoimmune disorders. Cutaneous cancers in this high-risk patient group are clinically distinct from the general immunocompetent population, showing aggressive behavior with associated poor outcomes. This article reviews the pathogenesis, epidemiology, incidence, prognosis, and special considerations required in managing cutaneous cancers in the IS patient population.

Ethical Considerations for Elderly Patients with Cutaneous Malignancy 415

Alyssa K. Ovatt, Brian B. Hughley, and Susan McCammon

Discussions of ethics in surgery generally focus on the principles of beneficence, nonmaleficence, autonomy, and justice. Caring for elderly patients with advanced cutaneous malignancies often requires the added consideration of narrative ethics to account for the expanded circle of care, complex medical conditions, and different goals of treatment often seen in this population. By focusing on the patient's illness narrative and relying on the collective experiences of the patient and surgeon, compassionate and appropriate care can be provided for these often-devastating disease processes.

Injectables in Head and Neck Cutaneous Melanoma Treatment 425

Brad Rumancik and Lawrence Mark

Head and neck cutaneous melanomas pose many treatment challenges. Intratumoral injectables offer local and possibly systemic therapy in unresectable lesions. Talimogene laherparepvec, an injectable oncolytic type 1 herpes simplex virus, can improve durable response rates compared with systemic granulocyte-macrophage colony-stimulating factor therapy in patients with stage IIIB to IVM1a unresectable melanoma. These benefits were most noticed in lower-stage subsets and treatment naive patients. Efficacy of talimogene laherparepvec was maintained in patients with head and neck melanoma. Talimogene laherparepvec plus systemic immunotherapies is being studied, with promising preliminary data. Numerous ongoing clinical trials are investigating other viral and nonviral injectables.

The Role of Mohs Surgery in Cutaneous Head and Neck Cancer 439

Gina D. Jefferson

Mohs micrographic surgery (MMS) represents an excellent means to address basal cell carcinoma and some squamous cell carcinomas (cSCCs) of the head and neck region, achieving excellent outcomes with respect to local recurrence rates and disease-specific survival. MMS by virtue of its technique maximally preserves uninvolved tissues of the head and neck, thereby maintaining form, cosmesis, and function to the greatest extent as dictated by the disease. However, the application of

MMS for managing high-risk cSCC and melanoma requires additional investigation. MMS may also prove beneficial in treating rare cutaneous diseases such as Merkel cell carcinoma and dermatofibrosarcoma protuberans.

Special Article Series: Intentionally Shaping the Future of Otolaryngology

Special Foreword: Offering a Helping Hand to Future Colleagues xvii

Sujana S. Chandrasekhar

Special Preface: Meaningfully Moving Forward Through Intentional Training, Mentorship, and Sponsorship xxi

Jennifer A. Villwock

Mentorship and Sponsorship in a Diverse Population 449

Cristina Cabrera-Muffly

Mentorship and sponsorship are critically important for otolaryngologists at all levels of their career. Mentorship is typically found within a long-term professional relationship and provides career advice and support. Sponsorship is a more transactional relationship that promotes the mentee for specific career advancement opportunities. Both help mentees achieve more in their careers and have higher career satisfaction. This article defines mentorship and sponsorship and the current state of these within otolaryngology. Strategies for being an effective mentor and mentee are listed. Mentorship needs among women and underrepresented minorities within otolaryngology are discussed.

Increasing the Number of Black Otolaryngologists 457

Erin K. O'Brien, Dontre' M. Douse, Semirra L. Bayan, Janalee K. Stokken, and Kathryn M. Van Abel

Otolaryngology continues to have one of the lowest percentages of Black physicians of any surgical specialty, a number that has not improved in recent years. The history of exclusion of Black students in medical education as well as ongoing bias affecting examination scores, clerkship grades and evaluations, and honors society acceptance of Black students may factor into the disproportionately low number of Black otolaryngology residents. In order to increase the number of Black physicians in otolaryngology, intentional steps must be taken to actively recruit, mentor, and train Black physicians specializing in otolaryngology.