Care Coordination for Advanced Non-Melanoma Skin Cancer

The Importance of Interprofessional Collaboration Between Oncologists and Dermatologists

Non-melanoma skin cancers (NMSCs) are the most common type of cancer worldwide.[1] An estimated 5.4 million cases in 3.3 million people are diagnosed in the US annually, as many individuals present with multiple lesions simultaneously.[1] NMSCs primarily include basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), which together constitute over 80% of all NMSCs.[2] Other rare types of NMSC include Merkel cell carcinoma, Kaposi sarcoma, and various types of cutaneous lymphomas. In general, most NMSCs are curable when detected early and treated appropriately. However, recurrence is common, with approximately 60% of individuals who have had one NMSC experiencing a second case within 10 years of initial diagnosis.[1]

While BCC is by far the most common presentation of NMSC, SCC can be more clinically aggressive and is associated with a higher risk of metastasis and elevated mortality risk.[3] The health of one's immune system is strongly linked to NMSC risk, as evidenced by a high prevalence of NMSC in patients that receive solid organ transplantation and who necessarily require long-term immunosuppression.[4]

The disease burden for NMSC has been steadily increasing over the past several decades: the age-standardized incidence rate has risen from 54.1 per 100,000 individuals in 1990 to 79.1 per 100,000 individuals in 2019.[5]

Morbidity and mortality associated with NMSC have followed a similarly concerning trend: The number of new cases, number of deaths, disability-adjusted life years (DALYs), and the age-standardized mortality rate associated with NMSCs have all increased over the past 30 years.[5]

The Impact of Delayed Care

Early diagnosis and prompt referral for treatment can greatly improve both clinical outcomes and quality of life for patients with advanced NMSC. However, several challenges exist in terms of care coordination for this patient population. Due to the slow disease course associated with most NMSCs, many patients delay seeking care from either a primary care doctor or dermatologist, many times even while advanced disease is developing. In fact, the most common reason for delayed referral to oncology is due to delayed presentation to care.[6] An investigation into psychosocial factors that contribute to this phenomenon among patients with advanced NMSC include avoidance behavior, mistaken interpretation and banalization of symptoms, and fear of treatment.[7] These factors may be compounded by a lack of access to health care, particularly in rural or other medically underserved regions. Patient education may help address delayed presentation to care, with strategies such as public health messaging and provider-led education at the time of initial NMSC diagnosis. The likelihood of recurrence and high treatability of recurrent disease (if addressed promptly) should be emphasized to both patients and caregivers.

Dermatologic Care and Referrals for Patients with Advanced Non-Melanoma Skin Cancers

Once patients present to care, there are certain actions dermatologists can take to increase the likelihood of detecting advanced disease early in its course. As explained by Dr. Jesse Hirner, dermatologist at University Hospital in Columbia, Missouri: "Many dermatologists do not screen for lymph node metastasis with palpation or imaging in patients with high-risk non-melanoma skin cancer."

Given that the majority of NMSC cases seen annually at individual dermatology practices tend to be early-stage and exhibit an indolent progression of disease, the index of suspicion for advanced disease may understandably be low. However, undetected nodal disease leads to missed opportunities for early oncology referral and prompt management. For all patients diagnosed with SCC, the draining lymph node basin should be palpated at both time of diagnosis and at follow-up. Dermatologists should also consider imaging of nodal basins in cases of SCC that are designated Brigham and Women's T2b or higher.

When providing care for patients with high-risk NMSC (especially SCC), dermatologists must consider referral to surgery for sentinel lymph node biopsy as well as medical and radiation oncology for consideration of adjuvant radiation, definitive radiation, or radiation combined with immunotherapy or chemotherapy treatment

options. While dermatologists do frequently refer patients for adjuvant radiation in the event of perineural invasion on pathology or when surgical margins are unable to be cleared, there are other high-risk features that may also warrant adjuvant radiation (eg, size ≥ 2 centimeters, high-risk anatomical location, poor differentiation, deep invasion, or desmoplasia). Although these adverse prognostic factors are not strictly incorporated into guidelines for use of adjuvant radiation, this may prevent some patients with high-risk disease who would benefit from adjuvant radiation from being referred.

Bridging the Gap: Connecting Oncology and Dermatology

For complicated NMSC cases with clinical uncertainties, strong interprofessional relationships between dermatologists and oncologists are invaluable and can change the entire course of a patient's disease and treatment trajectory. There are several actions and initiatives a cancer center can take to foster relationships with dermatologists in the community in an effort to establish referral pathways and promote care coordination:

Invite community dermatologists to tumor boards: Many cancer centers have tumor boards where melanoma and advanced NMSC patients are discussed. Dermatologists attending these will improve communication with the entire cancer care team. Not only do tumor boards allow for direct communication and consensus-building for patient management decisions, but they also provide an opportunity to build professional networks. Tumor board conferences allow oncologists and dermatologists to establish professional rapport, exchange contact information, and have clear points of contact within each other's specialties. If a dermatologist is unable to travel to be present at the tumor board in person, leveraging technology and videoconferencing is a suitable alternative. Multidisciplinary supportive care conferences are less common than tumor boards but are also excellent avenues for communication and care coordination.

Choose a reliable form of communication: Communication in the modern era has unique challenges, with messages coming from text, phone calls, email, EMR inboxes, and paging apps. Many physicians understandably find this overwhelming, particularly when communicating with other physicians outside of one's institution. However, establishing a reliable system of communication that will result in rapid and professional responses will invite further communication and care coordination in the future.

Schedule departmental educational opportunities: Cancer centers can invite their colleagues in dermatology to attend a grand rounds lecture (or more informal educational presentation) that discusses key clinical junctures in the care of advanced NMSC patients. Important takeaways where care should be coordinated between dermatologists, surgeons, medical oncologists, and radiation oncologists should be discussed in detail. Moreover, events such as these can provide an opportunity to discuss advances in the field, such as emerging evidence in support of checkpoint inhibitors that have recently changed the treatment landscape for NMSC.[8]

The Rise of Oncodermatology

Perhaps the most critical factor for improving patient access and care coordination is co-location of dermatology within the same institution as the cancer center. Supportive oncodermatology is an emerging subspecialty within dermatology that aims to alleviate toxicities involving the skin, hair, and nails for patients receiving cancer therapy. When dermatologists hold clinic within the same location as oncologists, care coordination and communication between oncology and dermatology is greatly improved. Oncology patients often travel long distances to receive care and have busy schedules during their time at the cancer center. Same-day access to dermatology care is often necessary to make important decisions regarding cutaneous toxicities and continuation of treatment. **An estimated 50% of all patients with cancer experience an interruption in therapy secondary to dermatologic toxicity**[9], a number that could be significantly reduced should urgent dermatologic expertise be available to manage adverse events and guide decisions regarding treatment continuation.

Dermatologic Survivorship Care

A specialized supportive oncodermatologist is an excellent "point person" that can interface with dermatologists located outside the cancer center in the surrounding community. While they can help to direct referrals for melanoma and NMSC patients from the community, they can also facilitate survivorship care for oncology patients once treatment is complete. While supportive oncodermatologists provide care for the cancer survivor population in addition to patients in active treatment, they can also transition dermatologic care back to dermatologists in the community that are more easily accessible for the patient.[10] Survivorship care following treatment completion is essential for restoring quality of life in the cancer survivor population, which is projected to reach 22.1 million individuals in the US by 2030.[11] Treatment and disease-related clinical manifestations such as scarring, striae distensae, alopecia, pigmentary changes, finger or toenail alterations, chronic radiation dermatitis, and radiation

fibrosis have all been linked to anxiety, depression, and reduced function in the survivor population.[10] Beyond cosmetic concerns, these conditions can cause significant psychosocial dysfunction and reduced quality of life. Restorative treatment strategies and targeted interventions can greatly reduce the negative impact of dermatologic sequelae and improve the quality of life for cancer survivors.[10]

Conclusion

The rising incidence and significant disease burden of NMSC highlight the critical need for early detection and timely intervention. To achieve this, interprofessional collaboration between dermatologists and oncologists is essential for maximizing patient outcomes and enhancing quality of life. Initiatives such as involving community dermatologists in tumor boards and grand rounds lectures/educational opportunities can foster better care coordination through building relationships, establishing referral patterns, and sharing clinical expertise. The emerging subspecialty of supportive oncodermatology offers significant potential to bridge the gap between oncologic and dermatologic care. Ultimately, the integration of dermatology into cancer programs can ensure that advanced NMSC patients receive comprehensive and timely care, thereby reducing the morbidity and mortality associated with this cancer type.

Key Takeaways:

- **Importance of Care Coordination:** Early diagnosis and timely referral to oncology can significantly improve clinical outcomes, treatment opportunities, and quality of life for patients with advanced NMSC, especially given the recently expanded treatment landscape.
- **Role of Dermatologists in Early Detection and Management:** The slow disease course associated with most NMSCs can lead to delayed presentation to care and missed diagnosis of patients developing advanced disease. When indicated, prompt referral for imaging and lymph node biopsy in patients with high-risk NMSC can help to identify patients that should be referred to medical and radiation oncology.
- **Enhancing Care Through Interprofessional Collaboration:** Effective care coordination relies on strong interprofessional relationships between dermatology and oncology. Actions to foster these relationships include inviting dermatologists to tumor board conferences, establishing reliable communication channels, and organizing educational events to discuss key clinical junctures in the care of patients with advanced NMSC.

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