Non-Melanoma Skin Cancer of Head and Neck – Case Series

Julide Kasaboglu[1] , Stoyan Dimitrov[1] , Milena Mitkova[1] , Spiridon Todorov[1], Julian Rangachev[1] ,Tsvetomir Marinov[2]

1.Department of ENT , University Hospital „Queen Joanna-ISUL",Medical University-Sofia ,Sofia,Bulgaria
2.Department of Anesthesiology and Intensive Care , University Hospital "Queen Joanna-ISUL",Medical University-Sofia, Sofia ,Bulgaria

Abstract:

Non-melanoma skin cancer (NMSC) of the head and neck is among the most common malignancies globally, primarily comprising basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). These cancers predominantly affect fair-skinned individuals exposed to ultraviolet radiation, with high incidence rates in sun-exposed regions of the face, scalp, ears, and neck. The pathogenesis involves DNA damage induced by UV exposure, leading to mutations in key tumor suppressor genes.

Clinically, NMSC presents as persistent, non-healing lesions, often with characteristic features such as nodules, ulcers, or plaques. Early detection and management are crucial to prevent local tissue destruction and disfigurement, with treatment options including surgical excision, Mohs micrographic surgery, radiotherapy, and topical therapies. Advances in diagnostic techniques and targeted therapies continue to improve patient outcomes. This review highlights the epidemiology, etiology, clinical features, and current management strategies for NMSC of the head and neck, emphasizing the importance of prevention and early intervention.

In this case series, we present five patients with histopathologically confirmed non melanoma skin cancer of the head and neck region, illustrating the variability in clinical outcomes associated with distinct pathological features. These cases highlight the importance of detailed histological assessment in predicting disease progression and tailoring appropriate treatment strategies.

Introduction

Non-melanoma skin cancer (NMSC), which includes basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), is the most common malignancy to affect humans. Every year about 3.5 million of NMSC are treated all over the world and almost 75,000 new cases are diagnosed annually. Skin cancer rates have been increasing and passing from an incidence rate of 8 per 100,000 to 31 per 100,000 nowadays, with an increase of about 290%. Risk factors for skin malignancy include cumulative sun exposure and/or sunburns, Fitzpatrick skin types I and II, ionizing radiation, acquired or inherited immunosuppression, genetic factors, presence of areas of chronic inflammation after burn or trauma. UVB radiations (290 to 320 nm) may cause direct DNA damage and are involved in etiology of NMSC. The majority of NMSC lesions of the head and neck are easily treated, a number of clinical features define a high-risk subgroup of patients who warrant more circum-spect and aggressive clinical treatment. These high-risk NMSC lesions tend to be greater than 2 cm in diameter, grow rapidly, and recur after initial treatment.

Surgical excision is the gold standard and margin assessment is mandatory. In this way, 5-years disease-free survival is 95-98% for BCC and 92% for CSCC. Management of high-risk NMSC and larger MCC is more complex. Surely, the treatment of choice is surgical removal, whether by conventional surgery or Mohs micrographic surgery.

Case 1

A 76-year-old male patient visited our clinic with a tumor on the back of his right ear and a sizable necrotic mass on the right side of his neck. A CT scan revealed metastasis in the planum mastoideum area and multiple cervical lymph node metastases on the right side of the neck. The patient underwent a radical excision of the tumor and a right-sided radical neck dissection. (Fig. 1, Fig. 2)

Post-operatively, adjuvant radiotherapy was planned; however, the patient unfortunately passed away during the treatment period.



Fig.1. *before operation*



Fig.2. *after operation*

Case 2

A 65-year-old male patient presented to our clinic with a peri-orbital mass on the right side of his face. His medical history included multiple surgeries for basal cell carcinoma of the skin between 2012 and 2015, and he had been treated with Mitomycin for two years. A biopsy of the right eyelid revealed a diagnosis of non-differentiated basal cell carcinoma. Subsequent MRI scan demonstrated metastases in multiple cervical lymph nodes across all levels on the right side. (Fig. 3)The patient underwent enucleation of the right eye and a conservative neck dissection on the same side. (Fig. 4)

Postoperatively, he received adjuvant chemoradiotherapy as part of his treatment plan.

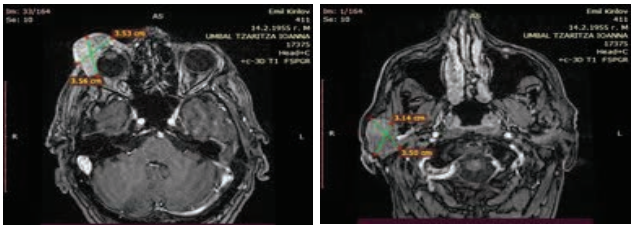


Fig. 3. *MRI scan*

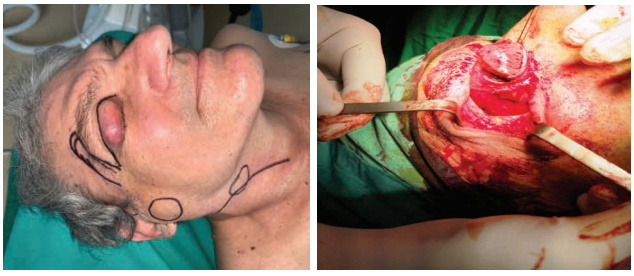


Fig. 4. from the operation

Case 3

A 69-year-old male patient presented to our clinic with a tumor on the posterior surface of the right auricle and swelling in the right parotid region. CT imaging revealed metastasis in the parotid gland as well as lymph node metastases across the 2nd, 3rd, 4th, and 5th levels of the right neck (Fig. 5). The tumor was radically excised from the right auricle, and the patient underwent a right-sided radical neck dissection combined with parotidectomy (Fig. 6 from operation). Postoperative management included combined chemoradiotherapy. Approximately five to six months later, a lesion was detected on the left clavicle during follow-up. Further CT imaging identified new metastases in the left clavicle and the submental region (Fig. 7). The patient declined surgical intervention and was referred for ongoing radiotherapy and chemotherapy.

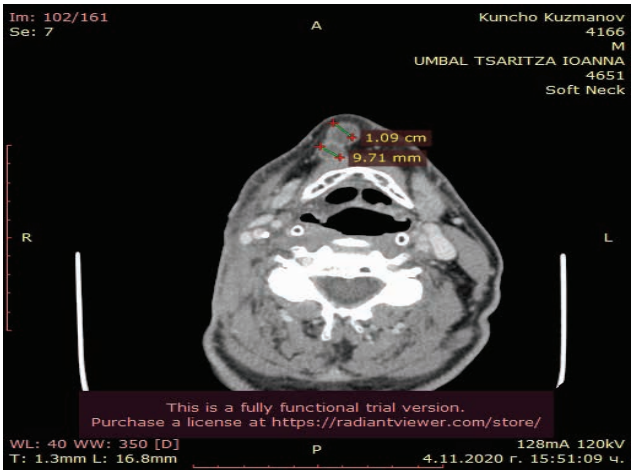


Fig. ***5***

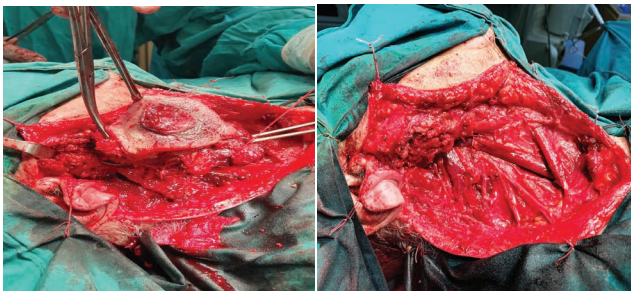


Fig. *6*

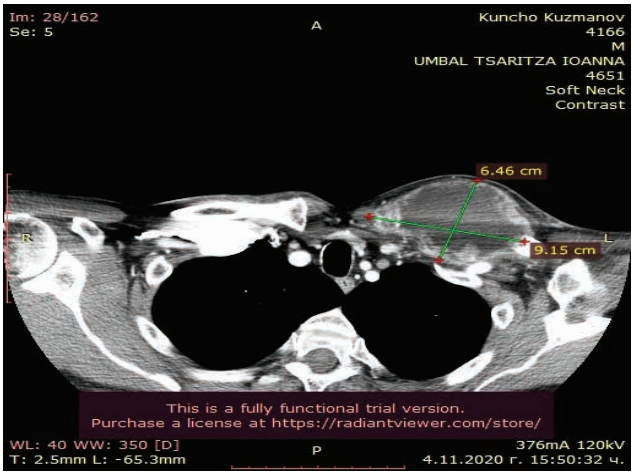


Fig. 7

Case 4

A 76-year-old female patient presented to our clinic with an exophytic tumor on the left nasal sidewall. CT imaging revealed a well-defined, circular tumor mass accompanied by bone destruction on the left side of the nose. The tumor was completely excised with clear margins, and the resulting defect was reconstructed using a nasolabial flap. (Fig. 8)



Fig. 8

Case-5:

A 74-year-old female patient presented to our clinic with an approximately 2.5 cm exophytic tumor located at the left nasolabial fold, near the infraorbital margin, following consultation with a dermatologist. The tumor was surgically excised, and the resulting defect was reconstructed using a Limberg flap. Postoperative management included radiotherapy. During follow-up after radiotherapy, CT imaging revealed metastases in the preauricular and submandibular lymph nodes on the left side. (Fig. 9) Consequently, the patient underwent a left-sided selective neck dissection.

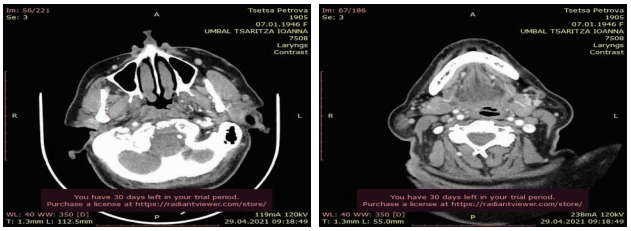


Fig. 9

Discussion

Head and neck nonmelanoma skin cancers (NMSCs), including squamous cell carcinoma (SCC), basal cell carcinoma (BCC), and Merkel cell carcinoma (MCC), present complex surgical management challenges. This review emphasizes the critical importance of individualized, multidisciplinary approaches to treatment, given the diverse nature of these malignancies. NMSCs are common, with BCC being the most prevalent, followed by SCC and the rarer MCC. These cancers exhibit varied clinical behaviors and pathological features, significantly influencing treatment decisions. (1)

Treatment planning for NMSCs centers around surgical excision, with careful consideration given to patient and tumor-related factors. These factors include the patient's age, existing comorbidities, and characteristics of the tumor, such as its size and location. Achieving adequate surgical margins is paramount for successful outcomes; however, this can be particularly challenging in the head and neck region due to the close proximity of vital anatomical structures.

Squamous cell carcinoma (SCC) management involves categorizing the cancer into common primary and advanced types. Advanced SCCs, whether locally advanced or metastatic, often necessitate a multidisciplinary approach to ensure comprehensive care. Risk stratification is essential to determine the likelihood of recurrence, with high-risk tumors demanding more aggressive treatment strategies. Surgical margin adequacy is determined by these risk factors, typically requiring wider margins for high-risk lesions, while anatomical considerations of specific sites like the scalp, nose, and eyelids further complicate surgical planning. (1,2)

Effective neck management in SCC involves addressing the potential for regional lymph node metastasis, which significantly impacts prognosis. Assessing the risk of metastasis involves considering clinicopathological factors to inform decisions regarding parotidectomy and neck dissection. Elective neck dissection in clinically negative necks remains a point of contention, highlighting the need for careful patient selection and consideration of individual risk profiles. Basal cell carcinoma (BCC) management revolves around surgical excision, often supplemented by Mohs surgery or radiotherapy in selected cases. Risk stratification guides treatment, classifying BCCs into „easy to treat" and „difficult to treat" categories based on tumor and patient characteristics, with surgical margin adequacy varying accordingly. (2)

Merkel cell carcinoma (MCC) presents a unique challenge due to its aggressive nature and association with immunosuppression. Treatment typically involves wide local excision and multimodal therapy, reflecting the need for comprehensive management to address the high rates of nodal involvement and metastasis. Radiotherapy plays a pivotal role in managing NMSCs, serving as both a definitive and adjuvant treatment option. It is particularly useful for SCCs unsuitable for surgery and as adjuvant therapy following surgical resection in cases of positive margins or perineural invasion. Additionally, radiotherapy is often incorporated into the management of both BCC and MCC, further underscoring its versatility in addressing these cancers. (3)

For advanced NMSCs, systemic therapy is frequently required, with immunotherapy and targeted therapies demonstrating promising results. Hedgehog inhibitors are employed in the management of unresectable BCC, while PD-1/PD-L1 inhibitors have shown efficacy in advanced MCC. Integrating these newer modalities into the existing treatment paradigm is an ongoing area of research, with efforts focused on optimizing their use in conjunction with conventional surgery and radiotherapy. (4,5)

The effective management of head and neck NMSCs necessitates a multidisciplinary approach that carefully considers individual patient and tumor characteristics. While surgical excision remains the cornerstone of treatment, advancements in immunotherapy and targeted therapy are transforming the landscape of advanced disease management, necessitating further research and discussion to refine their integration into the overall treatment strategy.

Conclusion

In conclusion, non-melanoma skin cancers, particularly basal cell carcinoma and squamous cell carcinoma, represent the most prevalent malignancies worldwide, with rising incidence rates driven by factors such as UV exposure, skin type, genetic predisposition, and immunosuppression. Effective management predominantly relies on surgical excision with high success rates. The cases presented highlight the diverse clinical manifestations of advanced NMSC and underscore the importance of early detection, comprehensive treatment–including surgical, radiotherapeutic, and chemotherapeutic approaches and vigilant post-treatment surveillance. As research advances, emerging therapies targeting molecular pathways may further improve outcomes. Overall, a multidisciplinary approach combining precise diagnosis, tailored treatment

strategies, and diligent follow-up is essential to optimize patient prognosis and reduce the burden of this increasingly common disease.

References

1. Porceddu SV, Veness MJ, Guminski A. Nonmelanoma cutaneous head and neck cancer and merkel cell carcinoma: current concepts, advances, andcontroversies. J Clin Oncol 2015; 33:3338–3345
2. Bichakjian C, Armstronget A, Baum C, et al. Guidelines of care for the management of basal cell carcinoma. J Am Acad Dermatol 2018; 78:540–559.
3. Coggshall K, Tello TL, North JP, Yu SS. Merkel cell carcinoma: an update and review: pathogenesis, diagnosis, and staging. J Am Acad Dermatol 2018;78:433–442.
4. Stratigos AJ, Garbe C, Dessinioti C, et al. European interdisciplinary guideline on invasive squamous cell carcinoma of the skin: Part 2. Treatment. Eur JCancer 2020; 128:83–102.
5. Nahhas AF, Scarbrough CA, Trotter S. A review of the global guidelines on surgical margins for nonmelanoma skin cancers. J Clin Aesthet Dermatol 2017; 10:37–46.

