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Understanding and Identifying Early Signs and Characteristic Changes Associated with Basal Cell Carcinoma vs. Melanoma Skin Cancers

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1. Abstract

The rise in the incidence rate of skin cancer(s) in the United States calls attention to the preventative measures and therapeutic treatments required to treat this condition. However, the needed treatment for cancers such as Basal Cell Carcinoma constitutes for a large portion of the financial burden on the healthcare system. Exploring different types of skin cancer allows us to explore the appropriate options for treatment. In the past decade or so, studies have given appropriate understanding of BCC biology and appropriate therapeutic responses. Mohs surgery, surgical excision, and cryosurgery are the preferred methods of treatment. Choosing between treatment options requires us to utilize evidence-based research to make the best decision. Yet, there are a limited amount of randomized, long-term studies that examine this. More research is needed in order to fully understand the effectiveness and long-term effects of these therapeutic treatments.

Non-melanoma skin cancer refers to a group of cancers that slowly develop in the upper layers of the skin. Oftentimes, melanoma is more lethal and severe, which is why we can refer to other common types of skin cancer as non-melanoma [1]. Basal cell carcinoma (BCC) is one of the most common malignant forms of skin cancer, alongside Squamous cell carcinoma and malignant melanoma. It is also the most common form of skin cancer in Caucasian or lighter-skinned individuals [2]. Like many other skin cancers, Basal cell carcinoma is mainly caused by overexposure to UV radiation in sunlight [3]. The rising incidence of BCC in the United States raises concern, but may also reflect the movement of individuals into Southern climates [4]. Evidence-based research is necessary in order to properly explore therapies for treating skin cancer. Although there are a limited amount of long-term studies, a review found that the three standard therapies of choice are Mohs surgery, surgical excision, and cryosurgery. Mohs surgery was developed for the removal of certain cancers using precise microscopic control [5]. Additionally, there are new treatment options such as photodynamic therapy; however, there is work to be done to be able to find more non-invasive forms of treatment in the future [6].

The incidence rate of BCC is increasing from 4% to 8% annually, most likely due to extensive sun exposure and aging. In 2012, an estimated 5.4 million non-melanoma skin cancers were diagnosed in 3.3 million individuals. BCC has a lower mortality rate than other cancers such as melanoma, and it rarely metastasizes. However, severe morbidities may arise due to local destruction and invasiveness [7]. Notable etiological factors include ultraviolet exposure and genetic predisposition. The lesions are usually localized on parts of the body that are exposed to sunlight such as the neck, face, and ears [8]. Although the cancer may not metastasize, it can cause tissue damage and poor cosmetic outcomes. The appearance of the skin, even after treatment, may impact the patient's quality of life. Risk factors for BCC recurrence include a tumor over the size of 2 cm, aggressive histology, and particular localization to the central facial site [8].

Melanomas are the most terminal type of skin cancer. Even though melanoma counts for only 4 percent of all dermatological cancers, it is responsible for 80 percent of deaths from skin cancer [9]. Individuals with a strong family history of melanoma are at the highest risk. Other important factors include external factors such

as immunosuppression, sun sensitivity, and exposure to UV rays [9]. This is due to mutations in cyclin-dependent kinases, which are proteins responsible for enzymatic activity. They also play an extensive role in the control of cell division and modulate transcription in response to several extra and intracellular cues [10]. Deregulation of these proteins can lead to several different diseases like cancer. At a molecular level, the abnormal activation of the mitosis-activated protein kinase (MAPK) signaling pathway also stimulates growth in melanoma cells [9]. Melanoma can be categorized into two different types of features: low-level features (LLFs) and high-level intuitive features (HLIFs). LLFs are simple image-related features that can be combined to provide a general characterization of skin lesions that are related to skin cancer diagnosis (e.g. asymmetry) [11]. HLIFs are features that have been carefully designed and modeled to identify intuitive and semantically meaningful characteristics that a dermatologist can interpret [11]. Using these imaging techniques can help dermatologists locate and diagnose melanoma. Some of the most noticeable characteristics of melanoma (when observing a mole) include border irregularity, color variegation, and a diameter greater than 6 mm [11]. There are many treatment options available for melanoma. Targeted therapies, including BRAF therapies and MEK inhibitors, are a form of treatment [12]. Other treatment therapies include single-agent cytotoxic drugs (although they're not as effective), combination chemotherapies (with 20 to 40 percent response rates), cisplatin-based regimens plus IFN-Alpha and IL-2, and vaccines and monoclonal antibodies [13]. The spectrum of skin cancers and severity is vast, therefore preventative measures are vital to lifelong health and development. By examining these two types of cancers, we see both sides of that spectrum. Although BCC rarely metastasizes, we should take measures accordingly. This involves wearing sunscreen, utilizing sun protection, and having physicians look at any odd lesions or sudden changes in the skin. This highlights the importance of the prevention of melanoma even more so.

References

1. NHS Choices. Overview - Skin cancer (non-melanoma). NHS. Published January 6, 2020.
2. Lear JT, Smith AG. Basal cell carcinoma. Postgraduate medical journal. 1997; 73(863): 538-542.
3. Tan PH, Billis A. Basal cell carcinoma. World Health Organization classification of tumours: tumours of the urinary system and male genital organs. 2004.
4. Crowson A. Basal cell carcinoma: biology, morphology and clinical implications. Mod Pathol. 2006; 19(Suppl 2): S127–S147.
5. Swanson NA, Grekin RC, Baker SR. Mohs surgery: techniques, indications, and applications in head and neck surgery. Head & neck surgery. 1983; 6(2): 683-692.
6. Kuijpers DIM, Thissen MRTM, Neumann MHA. Basal Cell Carcinoma: treatment options and prognosis, a scientific approach to a common malignancy Am J Clin Dermatol. 2002; 3(4): 247-259.
7. Kim DP, Kus KJ, Ruiz E. Basal cell carcinoma review. Hematology/Oncology Clinics. 2019; 33(1): 13-24.
8. Mackiewicz-Wysocka M, Bowszyc-Dmochowska M, Strzelecka-Węklar D, Dańczak-Pazdrowska A, Adamski Z. Basal cell carcinoma–diagnosis. Contemporary Oncology. 2013; 17(4): 337-342.
9. Miller AJ, Mihm MC. Melanoma. New England Journal of Medicine. 2006; 355(1): 51-65.
10. Malumbres M. Cyclin-dependent kinases. Genome Biology. 2014; 15(6): 122.
11. Haider S, Cho D, Amelard R, Wong A, Clausi DA. Enhanced classification of malignant melanoma lesions via the integration of physiological features from dermatological photographs. IEEE Xplore. 2014.
12. Marzuka A, Huang L, Theodosakis N, Bosenberg M. Melanoma Treatments: Advances and Mechanisms. Journal of Cellular Physiology. 2015; 230(11): 2626-2633.
13. Anderson CM, Buzaid AC, Legha SS. Systemic treatments for advanced cutaneous melanoma. Oncology (Williston Park, NY). 1995; 9(11): 1149-1158.