Ratio of Nonmelanoma Skin Cancer Histologic Subtypes in a South Florida Dermatology Practice: High Incidence of Squamous Cell Carcinoma Subtypes

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Background

Ultraviolet Radiation (UVR), both UVA and UVB, are established causes of nonmelanoma skin cancers (NMSC); primarily basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) subtypes, with UVA being more associated with SCC. Because of its demographics and geographic location, the population of Florida is at risk for some of the highest rates of NMSC in the world. While current dermatologic epidemiology states that over 70% of NMSC are BCC, a previous study in South Florida, which looked at the dermatopathology of a large IPA group of 54 Dermatologists for the year 1996 showed an extremely high incidence of NMSC with over 70% being SCC subtypes. The purpose is to investigate the BCC/SCC ratio in a South Florida dermatology practice in 2024 determine if the change in ratios of BCC to SCC has continued after almost a 30-year time span.

Methods

An electronic histopathology database linked to a clinical dermatology practice in South Florida was searched for all histologically confirmed NMSC results across all ages for the entire year of 2024. All dermatopathology results were interpreted by board certified dermatopathologists.

Results

A total of 856 lesions with biopsy-proven NMSCs were assessed and categorized into BCC and SCC subgroups. BCC subgroups included superficial, nodular, morpheaform, and other subtypes. SCC subgroups included in situ SCC (isSCC) and all invasive SCC subtypes, including SCC keratoacanthoma type. Among these lesions, 247 (28.9%) were BCC subtypes and 609 (71.1%) were SCC subtypes. Further categorized, 54 were superficial BCC (6.24%), 193 were BCC (22.31%), 268 were isSCC (30.98%), and 341 were SCC (39.42%).

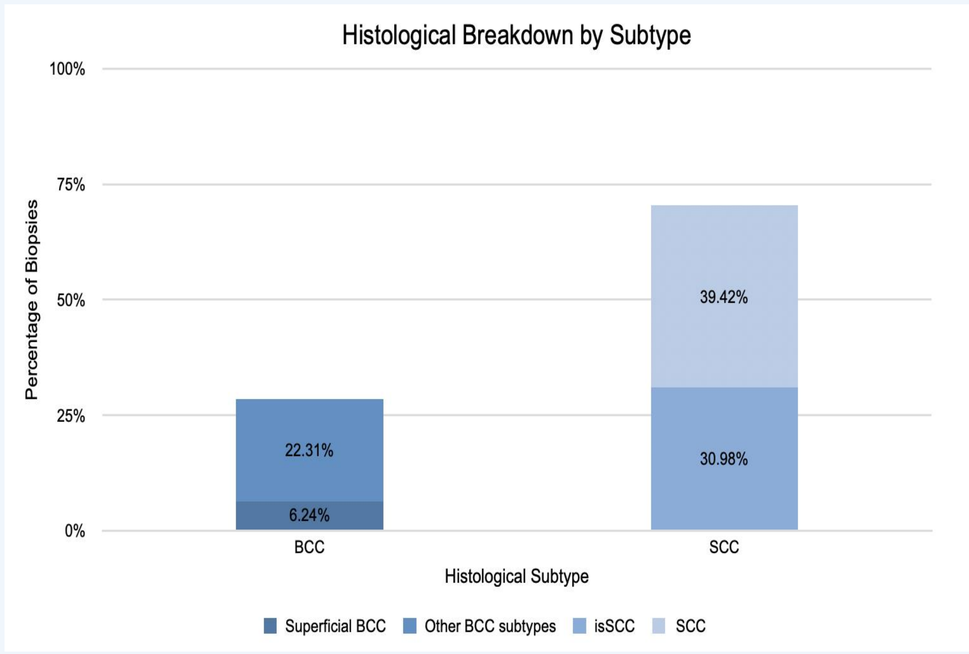

Figure 1: Frequency of biopsy-confirmed histological subtypes for NMSC lesions.

Discussion

The 2024 NMSC incidence rates in this study reveals high ratios of SCC versus BCC. These findings are in line with the previous study from South Florida and may represent an evolution in the incidence of NMSC, with an increase in SCC subtypes and change in the ratio of BCC to SCC. In this study, SCC subtypes represented over 70% of all biopsy-confirmed NMSC. Indeed, the ratio of NMSC in this patient cohort more closely mimics long term PUVA or organ transplant populations.

Discussion (cont.)

The historical use of UVB-specific sunscreen in the elderly populations and studies that show that modern broad-spectrum sunscreens have much lower UVA protection than stated, may allow for a much higher exposure to UVA without burns. This may significantly increase the long-term risk for SCC and can be in part the reason for the observed change in ratios. Moreover, since many SCC subtypes may arise from Actinic Keratoses (AK), dermatologists may be misdiagnosing early SCC including isSCC as AK and directly destroying the lesions as AK's instead of taking a biopsy to determine if they are indeed, SCC. This study may also reflect the evolution of UVA associated actinic damage to form AK and eventually SCC and highlights the importance of treating AKs and the overall actinic damage field to prevent future SCC.

Conclusion

This South Florida patient population showed a high ratio of SCC to BCC similar to a study conducted almost 30 years ago and may represent an evolution in the incidence of UVA associated NMSC, many arising from AK. Further study is warranted.

References

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