case report

Malignant melanoma and basal cell carcinoma of the face: a rare coexistence

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The simultaneous presence of two disparate neoplasms occurring in the same specimen has been well documented, albeit uncommonly. The juxtaposition of malignant melanoma (MM) and basal cell carcinoma (BCC) as collision tumors has been rarely reported, with most cases describing melanoma in situ and BCC. We report a case of a 20-year-old male presenting with three papillomatous growths on the face, localized over the left frontotemporal region, below the right eye and over the right eyebrow. On histopathology and immunohistochemistry the lesions were diagnosed as pigmented MM and BCC. MM and BCC presenting at different sites on the face in the same patient along with a focus of metastasis in the same anatomical region as the primary tumor is quite rare. To the best of our knowledge this is the first report of such a case.

Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) together known as nonmelanomatous skin cancers are the most common skin cancers worldwide.[1,2] Melanoma, another type of skin cancer, is potentially more serious but less common than BCC and SCC. The juxtaposition of two malignant skin tumors intermingling in the same histological specimen, though rare, has been reported but the simultaneous presence of two different types of malignant neoplasms is relatively uncommon. We report a rare case of a pigmented malignant melanoma occurring along with BCC on the face, at two different sites in the same patient, along with a focus of metastasis from the melanoma component at the same anatomical site.

CASE

A 20-year-old male presented with three papillomatous growths on the face, which were localized over the left frontotemporal region (1.2×1×0.5 cm) below the right eye (1.5×1 cm) and over the right eyebrow. All were skin covered. A biopsy was performed and the tissue was sent for histopathological evaluation.

Grossly, the left frontotemporal growth was covered with the hair-bearing skin and revealed a black nodule in the dermis on the cut section. The histopathological examination showed a tumor arising from the epidermis and infiltrating the dermis. Nests and sheets of cells with a high nuclear-cytoplasmic ratio, eosinophilic macronucleoli, and abundant cytoplasmic melanin pigment (confirmed by bleaching with nitric acid) were seen. The immunohistochemistry profile showed cytoplasmic positivity for HMB-45 and melan-A (**Figures 1A-D**). These constellations of findings confirmed the diagnosis of MM. The tiny growth over the right eyebrow also showed a similar morphological and immunohistochemical profile as that of the left frontotemporal mass, consistent with a diagnosis of MM thus confirming the metastasis from malignant melanoma (**Figure 2A**).

The histopathological evaluation of the papillomatous growth below the right eye revealed an atypical proliferation of basophilic cells arising in the epidermal basal cell layer and infiltrating the underlying dermis in nests, cords, and solid nodules. Deposits of the melanin pigment were scattered throughout the lesion. The stroma was fibrous and retraction clefts were present at the periphery of the tumoral nests (**Figures 2B, C**). These features of the dermal component were typical

of a pigmented BCC. The immunohistochemical profile revealed a strong expression for bcl-2 and not for melan-A thereby confirming our diagnosis of pigmented BCC (**Figure 2D**). Considering the young age of the patient, a detailed family history for any hereditary cancers such as xeroderma pigmentosa and BCC/MM was elicited and was not contributory.

DISCUSSION

Collision tumors containing invasive melanoma and BCC have been described in published studies. BCCs are known to coexist with other lesions, the most common combinations being BCC with melanoma, BCC with actinic keratosis, and BCC with neurofibroma.[3,4] We are reporting our case as the coexistence of two different primary malignant neoplasms, which is relatively uncommon. To our knowledge this is the first report of the occurrence of both BCC and malignant melanoma in the same patient along with a focus of metastasis from the melanoma component at the same anatomical site.

In India, skin cancers are rare, constituting about 1% to 2% of all diagnosed cancers.[5] BCC is the commonest skin cancer worldwide, but isolated reports from India have consistently described SCC as the most prevalent skin malignancy.[5] Cutaneous MM, SCC, and BCC exhibit a markedly different predilection for the tumor site. MM is seen more on the back in men and lower limbs in women in the Western world, while in India, the sole of the foot is the most common site. However, the most common site for all three tumors in India is the scalp and facial skin.[5] Both environmental and genetic factors like fair skin and light-colored eyes increase a person's risk of developing skin cancer. Chronic sun exposure (UV radiation) is the most important cause of mutations in critical tumor suppressor genes in BCC, SCC, and melanoma.[6] Because sun-damaged changes promote these tumors, their development at the same site can easily be explained.

The biological behavior of skin cancers also varies widely. BCC rarely metastasizes and has an excellent prognosis and survival, whereas MM is one of the most lethal malignancies with very high chances of regional and distant spread. Approximately 3% to 10% of patients of MM present with a metastatic disease in the absence of a clinically demonstrated primary lesion.[5]

The most important investigation in skin cancer is an excisional skin biopsy. Because these tumors involve superficial structures, the majority of patients undergo inadequate surgical excision at primary care centers because of the lack of awareness, surgical expertise, and the temptation to achieve a primary closure of the defect.[5] MM is not cured unless it is diagnosed at a stage when it can be isolated and removed surgically. The issue of margins has been addressed in various trials, and these studies suggest that a 1 cm radial margin is adequate for a primary tumor with a thickness of 1 mm

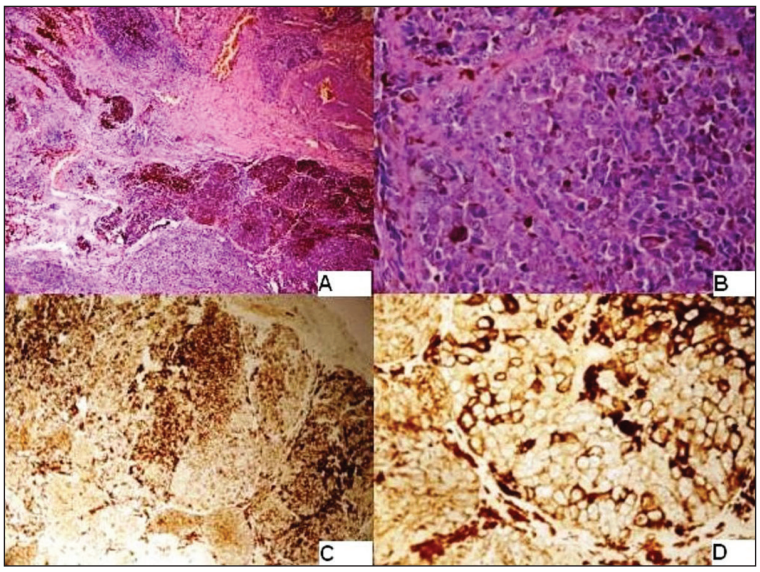

Figure 1. A) Photomicrograph of multiple myeloma shows tumor in sheets and lobules with prominent melanin pigment. (HE stain, 20×). B) High power view of the same multiple myeloma showing macronucleoli (HE stain, 40×). C) Tumor cells revealing cytoplasmic immunoexpression for HMB-45 (IHC,10×). D) Tumor cells revealing cytoplasmic immunoexpression for Melan-A (IHC, 40×).

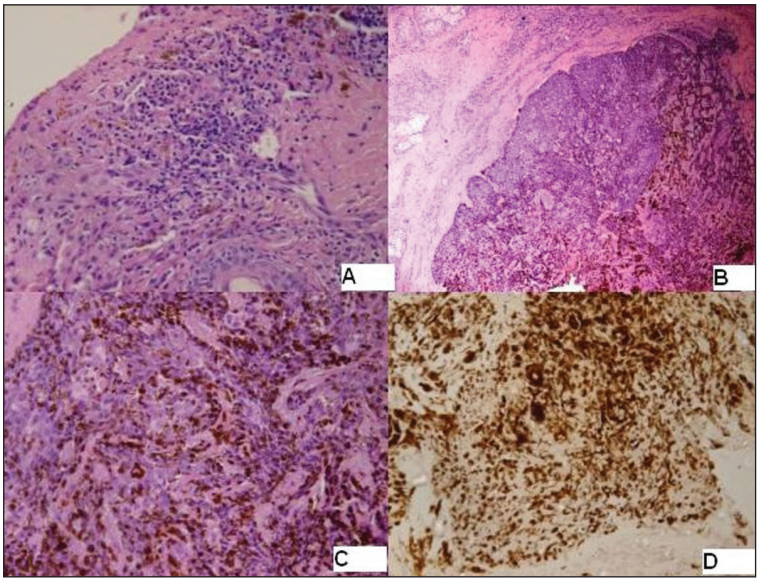

Figure 2. A) Metastasis from multiple myeloma with a few atypical cells showing macronucleoli along with melanin pigment (HE stain, 10×). B) Photomicrograph showing pigmented basal cell carcinoma (HE stain, 10×). C) High power view of basal cell carcinoma (HE stain, 40×). D) Expression of bcl-2 in basal cell carcinoma (IHC, 20×).

while a 2 cm radial margin is adequate for a thickness up to 4 mm.[7]

The standard surgical excision with either frozen section histology or paraffin-embedded fixed tissue pathology is the preferred method for the removal of most BCCs. When a standard surgical margin of usually 4 mm or more is applied, a high cure rate can be achieved.[8] Though the role of adjuvant therapy is limited in skin cancers, radiotherapy can be considered as the primary mode of treatment in BCC located on areas such as the lip, eyelid, and canthus where surgical excision is difficult or good cosmesis is difficult to attain. Radiotherapy has a very limited role in the management of MM. Postoperative radiotherapy is indicated in patients with advanced disease, distant spread, lymph nodes metastasis, positive margins, and palliation.[9]

Today, dermatologists can offer patients with skin cancer several new treatments besides surgery like chemotherapy, immunotherapy, photodynamic therapy, cryosurgery, electrodessication, and curettage provided the tumor is diagnosed at an early stage. Some superficial cancers respond to a local therapy with 5-fluorouracil, a chemotherapy agent. Topical treatment with 5% imiquimod cream, has reported 70% to 90% success rate at reducing, even removing BCC. It may even be used prior to surgery to reduce the size of the lesion.[10] These new treatments seem to have the same efficacy but better cosmetic results compared to earlier treatments. The prognosis of the two tumors must be considered separately. It is excellent if the appropriate method of treatment is used in early primary tumors. Recurrent cancers are much harder to cure, with a higher recurrent rate with any mode of treatment.

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