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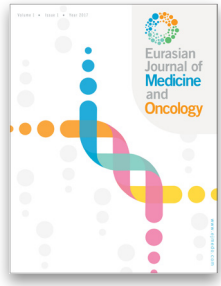

Case Report

Synchronous Renal Cell Carcinoma and Primary Ocular Malignant Melanoma: Case Report

Aydin Aytekin,[1] Suleyman Sahin,[2] Rafiye Ciftciler,[3] Hayriye Sahinli,[1] Guldal Esendagli,[4] Betul Cimer,[4] Muhammet Bekir Hacioglu,[5] Aydin Ciltas[1]

[1]Department of Medical Oncology, Gazi University Faculty of Medicine, Ankara, Turkey
[2]Department of Medical Oncology, Diskapi Training and Research Hospital, Ankara, Turkey
[3]Department of Internal Medicine, Gazi University Faculty of Medicine, Ankara, Turkey
[4]Department of Pathology, Gazi University Faculty of Medicine, Ankara, Turkey
[5]Departmant of Medical Oncology, Konya Training and Research Hospital, Konya, Turkey

Abstract

Renal cell carcinoma (RCC) and malignant melanoma (MM) are ranked as the eighth and the fifth most frequent malignancies in the United States, respectively, and the incidence is increasing. Recent studies have shown an increased risk of second primary cancer in patients with RCC or MM, demonstrating a severe risk of RCC in patients with MM, and a severe risk of MM in patients with RCC. Ocular melanoma is a rare melanoma subtype and accounts for 3.7% of all melanoma cases. A potential symmetrical relationship between ocular MM and the development of kidney cancer may be explained by the common risk factors and mechanisms of these 2 malignancies. Chromosome-3 abnormalities have commonly been reported in patients with ocular melanoma and kidney cancers. While previous studies have shown an increased incidence of MM in patients with RCC and vice versa, subanalysis of demographic tumor factors has been unavailable due to the small number of patients who have developed both cancers.

Keywords: Ocular malignant melanoma, renal cell carcinoma, skin metastasis, synchronous

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Renal cell carcinoma (RCC) and malignant melanoma (MM) are ranked as the eighth and the fifth most frequent malignancies in the United States, respectively, and the incidence is increasing. Smoking, male sex, hypertension, and obesity are commonly accepted risk factors for RCC. Risk factors for MM include UV-light exposure and susceptibility to sunburn phenotype (light hair/eye color).[1] Ocular melanoma is a rare melanoma subtype and accounts for 3.7% of all melanoma cases.[2] Recent studies have shown an increased risk of second primary cancer in patients with RCC or MM, demonstrating a severe risk of RCC in patients with MM[3–6] and a severe risk of MM in patients with RCC.[7, 8] The aim of the present study was to investigate and illustrate the co-existence of MM and RCC.

Case Report

A 75-year-old male patient presented at the hospital with the complaint of a long-term mass in the left eye. On physical examination, a palpable mass on the skin of left scapula and a sub corneal lesion in the left eye with evident melanotic hyperpigmentation were observed. Pathological involvement of 18F-fluorodeoxyglucose (18F-FDG) uptake and standardized uptake values (SUV) in positron emission tomography (PET) scan conducted to evaluate a probable

Address for correspondence: Aydin Aytekin, MD. Konya Yolu Caddesi, Gazi Universitesi Hastanesi, Tibbi Onkoloji Bolumu, E Blok, 6 Kat, Ankara, Turkey
Phone: +90 312 212 68 40 **E-mail:** draytekin@yahoo.com
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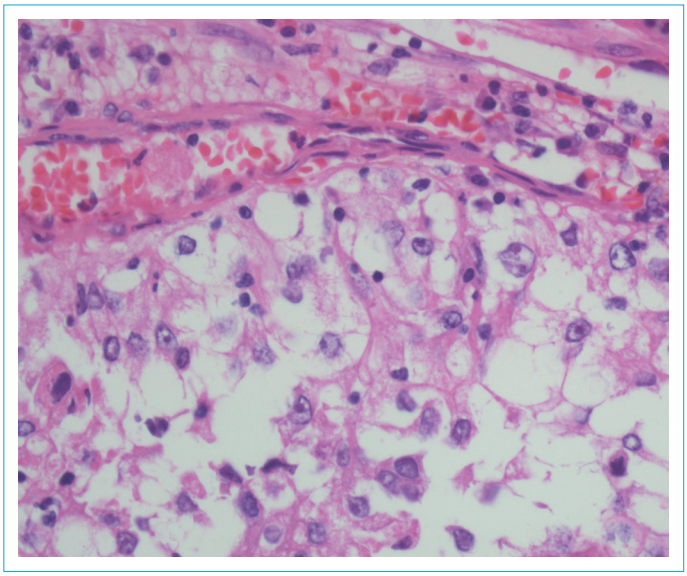

Figure 1. Histological microphotograph demonstrating neoplastic clear cells with prominent nucleoli and moderate pleomorphism (H&E x400).

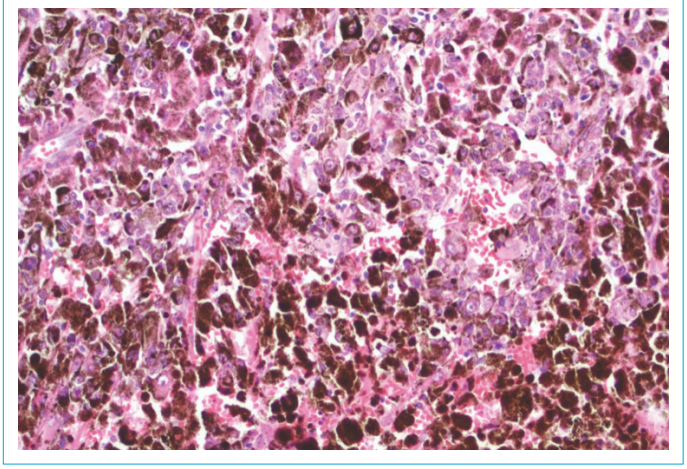

Figure 2. Histological microphotograph revealing neoplastic cells with prominent nucleoli and pigmentation (H&E x400).

diagnosis of MM were reported as follows: in the left frontoparietal region of the brain (SUVmax: 9.1); in the soft tissue of the left scapula, causing expansive destruction (SUVmax: 9.5); in the retrocaval and aortocaval lymph nodes (SUVmax: 5.3); in the lytic lesion on T-12 vertebra (SUVmax: 5.0); and in lytic lesion on the left acetabulum and femoral neck (SUVmax: 5.7). Surprisingly, pathological findings of the scapular mass biopsy performed for a suspected diagnosis of MM were compatible with metastasis of RCC (Figure 1); however, no pathological involvement was detected in the kidneys. Magnetic resonance imaging was performed to determine possible solid renal masses. Only bilateral renal cortical cysts were identified and these cysts didn't record 18-FDG uptake in PET-CT scan. Orbital enucleation was performed and interferon treatment was initiated for the patient with diagnosis of ocular MM (Figure 2) and RCC.

Discussion

Cutaneous metastasis occurs in 5% to 10 % of patients with advanced cancer, and particularly breast, lung, colon, ovarian, and metastatic MM.[9] Cutaneous metastasis from RCC is uncommon with an estimated incidence of 3.4% in all cases. Interestingly, almost all cases of cutaneous metastasis due to RCC have been reported in males.[10] Additionally, most cases of RCC are detected incidentally during investigation for other medical reasons or by the appearance of metastatic lesions.[11, 12] Ocular melanoma metastasizes mostly to the liver a few decades after diagnosis.[13] RCC spreads mostly to the lung, bone, liver, and brain.[14]

In a study, although the risk for the development of kidney cancer increases after the diagnosis of MM, the inverse relationship after a diagnosis of kidney cancer was not found.[15] Despite the fact that development of kidney cancer increases 4-fold in the first year after ocular MM diagnosis, this increased risk is likely to be associated with co-incidental diagnosis during a routine follow-up of ocular melanoma cases.[16] A potential symmetrical relationship between ocular MM and the development of kidney cancer may be explained by the common risk factors and mechanisms of these 2 malignancies. Chromosome-3 abnormalities have commonly been reported in patients with ocular melanoma, kidney, and prostate cancers.[17]

As a result, further investigation is needed to better understand the relationship between ocular MM and RCC.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

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