Case Report

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Primary Ovarian Melanoma with Metachronous Primary Skin Melanoma

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ABSTRACT

Background: Primary ovarian melanoma is extremely rare. Most cases are associated with a teratoma. There are no clear guidelines for treating teratomatous or non-teratomatous tumors.

Objective: To report an unusual case of primary ovarian melanoma.

Clinical Case: A 43-year-old woman with primary ovarian melanoma derived from a teratoma, who underwent surgery and received chemotherapy and treatment with Bacillus Calmette-Guerin; Distant recurrence associated with a second primary cutaneous melanoma developed 35 years later. Differential diagnosis is a challenge for pathologists because they must differentiate it from metastatic melanoma.

Conclusions: The mainstay of treatment for this disease is surgery; however, chemotherapy, immunotherapy, and targeted therapy also appear to have an impact.

Keywords: Ovarian Cancer; Melanoma; Overall Survival; Cutaneous Melanoma

Introduction

Melanoma of the female genital tract is rare; it accounts for 3% of all melanomas. Primary ovarian melanoma is even more uncommon [1]. Thirty cases [2] were described from 1901— when it was first reported by Andrews— to 2015. Fourteen more cases [3,4] were recorded between 2005 and 2010, and another 18 cases [5] since then, that is, 62 cases in total. Most cases are of metastatic origin. Primary ovarian melanoma is frequently associated with an underlying teratoma and typically occurs in women between 46 to 50 years of age. Primary ovarian melanoma has poor overall survival, ranging from 6 to 30 months, with high mortality rates: 23 (46.9%) of 49 published cases [6]. Malignant transformation of an ovarian teratoma accounts for about 2% of malignant ovarian melanomas and 0.1% of ovarian teratomas, [1] although some cases without evidence of teratoma have also been reported [7]. Currently there are no clear guidelines for the management of primary ovarian melanoma. It does not have a good outcome; stage at diagnosis is the most important prognostic factor, but more accurate clinical predictors are needed. We describe a case of a patient with significantly prolonged survival and metastatic disease, who 35 years after her first diagnosis developed metachronous head and neck melanoma.

Case Presentation

In 1987 a 43-year-old woman with an adnexal mass of cystic appearance underwent hysterectomy with bilateral salpingo-oophorectomy. It was found that she had melanoma associated with ovarian teratoma. In 1994 she developed distant recurrence in the tonsils and left inguinal lymph nodes. Tonsillectomy and left inguinal lymph node dissection were performed; adjuvant treatment with chemotherapy (dacarbazine) and intradermal injections of Bacillus Calmette-Guerin, which was the common treatment at that time, were administered. The patient was followed up annually for 33 years. The clinical and imaging findings did not show any signs of recurrence during this pe-

riod. However, in 2020 a hyperpigmented, ulcerated, multichromatic polypoid lesion with asymmetric borders and a radial growth of 1cm was observed on her right forearm. An excisional biopsy was performed; the histopathological evaluation revealed a polypoid melanoma in vertical growth phase with a Breslow thickness of 4mm and 28 mitoses/mm2. An ultrasound and PET-CT scan of the regional lymph nodes showed no evidence of distant hypermetabolic activity. A wide resection and lymphatic mapping with sentinel lymph node biopsy were performed. The final histopathological report indicated a completely resected melanoma (pT4b, pN0sm, pM0, L0, V0, pN0). As of last follow-up visit in October 2021, no tumor activity was observed.

Discussion

Melanoma accounts for 3% of all neoplasms of the female reproductive system [1]. Most cases of primary ovarian melanoma arise from a teratoma; however, some cases without evidence of teratoma have also been noted. The age at diagnosis is similar in both groups (48.6 ± 18.5 years with teratoma vs 46.2 ± 12.3 years without teratoma; p=0.78), [4] Survival rates differ significantly (27.1 ± 6.1 months with teratoma vs 11.3 ± 4.8 months without teratoma), [4] The case we describe was not associated with a teratoma. In both groups, spread occurs to adjacent structures through lymphatic and hematogenous routes (lung, liver, and bones) [7], like in the present case where the patient had tonsillar and contralateral inguinal metastasis, which were treated with surgery and adjuvant therapy as previously mentioned. Based on the literature review, there is no case of Primary ovarian melanoma with lymph node metastasis that exhibited such prolonged survival. The case is even more remarkable considering the tonsillar metastasis, which could be argued whether it was a primary or metastatic tumor. The prognosis would be poor either way because it would be treated as a mucosal melanoma, whose survival is similar to skin cancer of the head and neck, but with multiple local recurrences in the mucosa and regional lymph node metastasis to the neck [8]. This case is noteworthy considering the patient reached such a positive outcome after undergoing surgery and receiving an old treatment for melanoma, since BCG used to be administered to increase the immune response.

The patient never interrupted her follow-up visits and in 2020 was diagnosed with a metachronous melanoma of the forearm, for which she underwent wide resection and sentinel lymph node biopsy. She did not require further treatment and is still monitored after 34 years since her first diagnosis. Current data demonstrate that ovarian melanoma is a rare entity with poor survival linked to metastatic disease. The present case is within the age range at diagnosis, with no associated teratoma, and in the group with worst prognosis due to tonsillar and inguinal node metastases. The course of treatment included surgery with adjuvant chemotherapy and intradermal BCG. It was a particular case with a prolonged survival since Primary ovarian melanoma was diagnosed (at 43 years old), with metachronous skin melanoma (34 years later); both diseases have not exhibited tumor activity to date.

Conclusion

Primary ovarian melanoma is an exceptionally rare malignancy, and there are no specific pathological or molecular markers to definitively distinguish primary from metastatic disease. In the absence of standardized diagnostic criteria or treatment guidelines, management is primarily surgical, which ranges from an ovarian cystectomy to a radical cytoreduction procedure, associated or not with adjuvant treatment. Early diagnosis and individualized treatment remain critical, although long-term survival is rare and largely unpredictable.

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K.L.O. conceptualized the case report and supervised the clinical management. Z.L.P. participated in the literature review and contributed to drafting the manuscript. S.S.Y.C. assisted in manuscript writing and formatting according to journal guidelines. D.Y.G.O. reviewed the case from an oncological perspective and provided critical revisions. We thank the Pathology Department of the Instituto Nacional de Cancerología for their support in diagnostic interpretation. No external funding was received.

Conflict of Interest

The authors declare no conflict of interest.

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