Solitary ovarian mass: a case of metastatic malignant melanoma

S. Milicevic[1], T. Bozanovic[1], Z. Vilendacic[1], G. Lazovic[1], B. Kastratovic Kotlica[1], J. Atanackovic[1], M. Bajcetic[2]

[1]Institute of Gynecology and Obstetrics of the Clinical Center of Serbia
[2]Department for Histology and Embriology "Aleksandar Dj. Kostic" School of Medicine, Belgrade (Serbia)

Summary

Malignant melanoma involving the ovaries is rare and in most cases metastatic in origin. We present a case of ovarian malignant melanoma presenting as a large adnexal mass in a patient with no previous history of malignant melanoma.

Key words: Malignant melanoma; Ovary; Metastases.

Introduction

Malignant melanoma involving ovaries is rare and in most cases metastatic in origin. In the majority of patients with multi organ spread ovarian involvement is not clinically significant, therefore the diagnosis of ovarian metastases is often made on autopsy [1]. Diagnosis of primary ovarian malignant melanoma is difficult since it is based on exclusion of the extraovarian source which could be an occult or regressed primary site in the skin, choroid plexus, or elsewhere.

We describe a case of ovarian malignant melanoma presenting as a large adnexal mass in a patient with no previous history of malignant melanoma.

Case Report

A 23-year-old woman was referred to our institution because of lower abdominal pain, abdominal swelling and a palpable pelvic mass. She had no significant gynecologic history. Pelvic ultrasound scan revealed a solid mass with anechoic foci measuring 9 cm situated in front of the uterus. The origin of the tumor could not be identified and a scan of the ovaries was inconclusive. Secondary deposits in an enlarged liver and presence of ascites were also visualized. Blood results on admission showed mild iron-deficiency anemia, increased erythrocyte sedimentation rate, normal renal function and abnormal liver function tests. CA125 was mildly elevated. The patient underwent laparotomy nine days following admission. At laparotomy, two liters of ascites were evacuated. A left ovarian tumor measuring 10 x 11 x 5 cm with an intact, smooth capsule and without adhesions to its surroundings was identified. The right ovary and uterus appeared normal. Metastatic spread to the peritoneal surface, omentum and liver was noted during exploration of the abdominal cavity. The pelvic lymph nodes were not enlarged. We performed total abdominal hysterectomy, bilateral salpingo-oophorectomy and infracolic omentectomy.

On sectioning, the left ovarian tumor appeared yellowish brown in the central parts and darker in the periphery. The tumor was predominantly solid with two large cystic formations filled with pink proteinaceous fluid, measuring 3.5 x 5 cm and 3 x 7 cm. On microscopic examination there was no evidence of teratoma. The tumor was almost entirely composed of large epithelioid cells with abundant eosinophilic cytoplasm. Nuclei were large, polymorphic with prominent eosinophilic nucleoli. Numerous atypical mitoses were observed. The following characteristics were also noted: areas of focal necrosis, mild lymphocyte response and absence of lymphovascular invasion. Immunohistochemistry was positive for S-100, HMB-45 and anti-Melan-A staining confirming the diagnosis of malignant melanoma. Similar lesions, forming nevoid nests, were identified in the uterine isthmus, mesosalpinx and omentum. Similar, but rare, changes were also noted in the right ovary.

The postoperative recovery was uneventful. A complete ophthalmologic exam was initiated due to swelling of the right upper eyelid and was normal. The patient was directed to a referral oncology center.

Discussion

Melanoma involving the ovary is a rare and usually lethal disease, predominantly seen in young women of reproductive age. Since melanomas of the female genital tract account for only 3% of all melanomas [2], metastases to the female genital tract often pose diagnostic and therapeutic dilemmas, both for the clinician and the pathologist.

Clinically, although occasionally reported [3], it is uncommon for melanoma to present as an ovarian mass. Since a previous history of melanoma may not be available or is remote, this entity is often overlooked. Metastatic melanoma is unilateral in the majority of cases and this finding could be misleading since most metastatic tumors involve both ovaries. Ultrasound and computed tomography findings are nonspecific but usually with a growth pattern which excludes benign ovarian pathology [4]. If a sufficient amount of melanin pigment is present, magnetic resonance imaging can demonstrate high signal changes on T1-weighted images consistent with melanin deposition [5].

Revised manuscript accepted for publication July 26, 2007

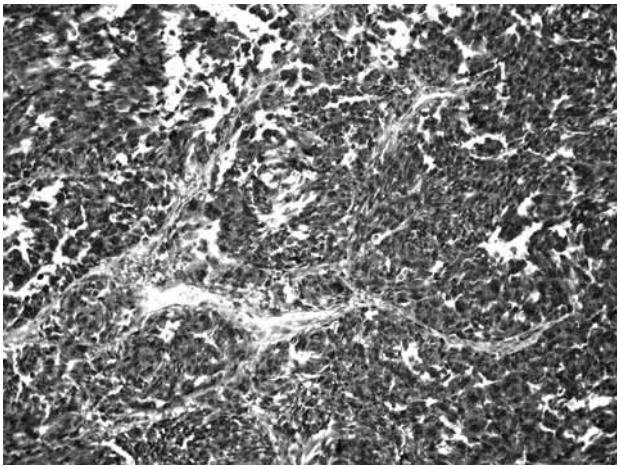

Figure 1. – Malignant melanoma cells positive for S-100.

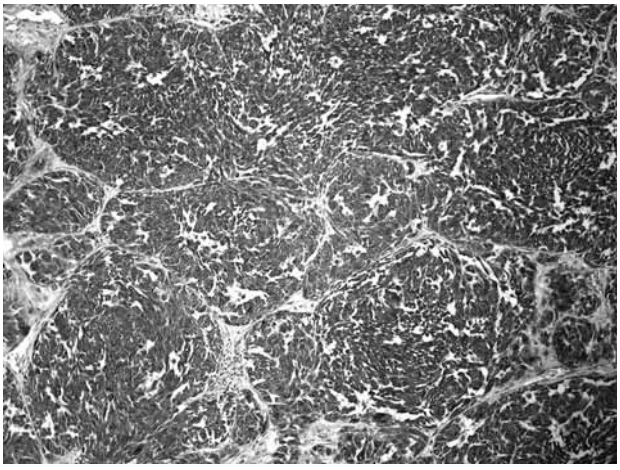

Figure 2. – Malignant melanoma cells positive for anti-melanoma (HMB-45).

Pathologically, a gross feature that is helpful in making the diagnosis of melanoma is the presence of pigment. In contrast, the various appearance of malignant melanoma on microscopic examination can mimic primary ovarian neoplasms, mostly sex cord stromal tumors [6,7]. In the absence of primary lesions immunohistochemical staining can be conclusive. The most sensitive markers are S-100 and HMB-45 with a sensitivity of 95% and 85%, respectively [6]. Once a diagnosis is made, it is important to make a distinction between primary and secondary lesion. The diagnosis is hardened by the fact that the extraovarian source could be an occult or regressed primary site in the skin, choroid plexus, or elsewhere. Paradoxically, the pathologist evaluating the sample is rarely properly informed about the patient's previous history.

Finally, the optimal management of ovarian melanoma has been a subject of debate and has not yet been established [8]. Procedures currently used include cytoreductive surgery with or without adjuvant chemotherapy or radiotherapy. Also, various immunotherapy modalities have been proposed. So far, the value of such adjuvant treatments is not clear.

Conclusion

The case presented had the characteristic features of metastatic malignant melanoma, yet the clinician and the pathologist were in a diagnostic cul-de-sac. Emphasizing, once again, the rarity, clinical variability and unpredictable biologic behavior of the entity, we can only call to mind that, once in a while, looking at particles we can see in a wider perspective.

References

[1] Piura B., Kedar I., Ariad S., Meirovitz M., Yanai-Inbar I.: "Malignant melanoma metastatic to the ovary". *Gynecol. Oncol.*, 1998, *68*, 201.

[2] Ariel I.M.: "Malignant melanoma of the female genital system: a report of 48 patients and review of the literature". *J. Surg. Oncol.*, 1981, *16*, 371.

[3] Oliver R., Dasgupta C., Coker A., Al-Okati D., Weekes A.R.L.: "Ovarian malignant melanoma: Unusual presentation of a solitary metastasis". *Gynecol. Oncol.*, 2005, *99*, 412.

[4] Moselhi M., Spencer J., Lane G.: "Malignant melanoma metastatic to the ovary: Presentation and radiological characteristics". *Gynecol. Oncol.*, 1998, *69*, 165.

[5] Mitchell D.G., Mintz M.C., Spritzer C.E., Gussman D., Arger P.H., Coleman B.G., Axel L., Kressel H.Y.: "Adnexal masses: MR imaging observations at 1.5T, with US and CT correlation". *Radiology*, 1987, *162*, 319.

[6] Gupta D., Deavers M., Silva E., Malpica A.: "Malignant melanoma involving the ovary: a clinicopathologic and immunohistochemical study of 23 cases". *Am. J. Surg. Pathol.*, 2004, *28*, 771.

[7] Young R.H., Scully R.E.: "Malignant melanoma metastatic to the right ovary. A clinicopathologic analysis of 20 cases". *Am. J. Surg. Pathol.*, 1991, *15*, 849.

[8] Morton D.L., Ollila D.W., Hsueh E.C., Essner R., Gupta R.K.: "Cytoreductive Surgery and Adjuvant Immunotherapy: A New Management Paradigm for Metastatic Melanoma". *Cancer J. Clin.*, 1999, *49*, 101.

Address reprint requests to:
S. MILICEVIC, M.D.
Institute of Gynecology and
Obstetrics of the Clinical Center of Serbia
Darvinova 25/21
11000 Belgrade (Serbia)
e-mail: srbam@yubc.net