CASE REPORT

Metastatic malignant ovarian melanoma – a case report

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Abstract

Background. Malignant melanomas of the female reproductive system are rare. These are biologically highly aggressive tumors with poor prognosis. Preoperative establishment of the diagnosis is practically impossible. Therapeutic approach and treatment of patients with metastatic ovarian melanoma are highly dependent on precise histological analysis. Case report. A woman aged 48 was admitted to the clinic for occasional pains in the lower abdomen and suspected myomatous changes of the uterus. The patient underwent surgery for melanoma on her right arm five years ago. Classic hysterectomy with bilateral adnexectomy with infracolic omentectomy and selective iliac lymphadenectomy were performed. Macroscopic examination revealed an oval tumefaction on the left ovary sized 12.5 x 10 x 3.5 cm of solid structure. Tumor tissue was yellowish-brown colored, of solid structure and mostly localized subcortically with central edema. Microscopic examination showed positive reaction for HMB-45, anti-Melan-A and S-100 protein, but negative immunoreactivity for estrogen and progesterone receptors. Malignant disease caused death after a 4-year follow-up period following gynecological operation. Conclusion. The previous diagnosis of skin melanoma is also indicative of metastatic ovarian tumor, while immunohistochemical analyses confirmed the histopathological diagnosis.

Key words: ovarian neoplasms; melanoma; neoplasm metastasis; diagnosis; gynecologic surgical procedures; treatment outcome.

Introduction

It has been known that different gynecological malignancies extend toward the ovary by direct invasion as well as that gastrointestinal adenocarcinoma and breast cancer are the most frequent non-gynecological malignancies metastasizing to the ovaries. Ovarian localization of secondary deposits of extra-ovarian malignancies is relatively frequent and it accounts for approximately 10% of all ovarian tumors.

Malignant melanomas of the female reproductive system are rare and they account for 3%–7% of all melanoma localizations. Less than 50 cases have been described in the literature so far. These are biologically highly aggressive tumors with poor prognosis and most of the patients die within initial two years after verification of the tumor. Primary malignant melanoma of the ovary is exceptionally rare in gynecological oncology. It may develop as a result of malignant transformation of melanocytes in mature cystic ovarian teratoma.
Preoperative establishment of the diagnosis is practically impossible since occasionally the tumor is not clinically manifested as adnexal or ovarian mass, although history of previous treatment of melanoma of other localization may rise suspicion.

Therapeutic approach and treatment of patients with metastatic ovarian melanoma are highly dependent on precise histological analysis. Establishment of the accurate diagnosis is a prerequisite and imperative for the therapy.

We presented a case with secondary malignant melanoma of the ovary following previously treated melanoma on the arm.

Case report

A woman aged 48 was admitted to the clinic for occasional pains in the lower abdomen and suspected myomatous changes of the uterus.

The patient had no specific gynecological history, had two vaginal deliveries and two artificial abortions. Five years ago the patient underwent surgery for melanoma on her right arm while two years ago she had gallbladder surgery.

Clinical gynecological examination revealed solid, uneven uterus with palpable tumefaction on the left side, adjacent to the uterus of approximately 10 cm in diameter. Ultrasound examination of the small pelvis evidenced uterus size of $11 \times 7 \times 5$ cm, with subserous myoma arising from the fundus sized $10 \times 8$ cm. Pathologic adnexal findings were defined neither on the right nor on the left side.

Preoperative results of blood analyses were normal, including blood count and liver and kidney functions, while erythrocyte sedimentation was slightly increased. Tumor markers CEA, CA 15-3 i CA 19-9 in the serum were within the normal range, while CA 125 was discreetly increased.

In the course of laparotomy, a small quantity of ascites was aspirated. The left ovary with tumefaction sized $10 \times 8$ cm was in the immediate contact with the uterus, twice torqued around its axis. Surface of the tumefaction was roughly nodular and uneven. The right ovary and fallopian tube as well as the uterus appeared normal. The abdominal organs accessible to examination were free of any visible pathological changes.

Classic hysterectomy with bilateral adnexectomy with infracolic omentectomy and selective iliac lymphadenectomy were performed. Surgical material undergone histopathological analysis.

Macroscopic examination revealed an oval tumefaction on the left ovary sized $12.5 \times 10 \times 3.5$ cm of solid structure and whitish, roughly nodular surface (Figure 1). On the section, tumor tissue was yellowish-brown colored, of solid structure and mostly localized subcortically with central edema. The uterus, left ovary, fallopian tube, omentum and lymph nodes were normal.

Microscopic examination revealed the presence of tumor in the left ovary, composed of solid islets, nests or band-like formations. Tumor cells were polygonal, occasionally fusiform with oval, pleomorphic, hyperchromic nuclei. Mitoses numbers were moderate (Figure 2). The tumor did not penetrate the ovarian capsule or spread to the contralateral ovary, uterus, omentum or two analyzed lymph nodes.

The tumor cells showed marked cytoplasmic immunoreactivity to HMB-45 (Figure 3) and anti-Melan-A (Figure 4), as well as to S-100 protein (Figure 5), however with somewhat lower intensity of staining. Immunohistochemical reaction to estrogen and progesterone receptors was negative.

Accordingly, the diagnosis of malignant metastatic ovarian melanoma was established.

The postoperative course was uneventful. Progression of the malignant disease caused death of the patient after a 4-year follow-up period following gynecological operation, nine years after the surgery for primary malignant melanoma on the right arm.
Discussion

Melanomas of the female genital tract are known to be rare and they are most commonly biologically highly aggressive and lethal tumors. The interval between primary melanoma and ovarian metastasis is about 78 months, but in our case report it was 60 months.

This ovarian neoplasm is, as a rule, unilateral, and it is mostly detected in postmenopausal women averagely aged 53 years. Based on the reference data, the patients present due to the abdominal bloating and occasional pains in the small pelvis. Gynecological palpation reveals tumor masses, however the findings are occasionally inconclusive and also indicative of benign lesions of the genital organs, as it was the case with our patient. If the disease is accompanied by dysuria and loss of body weight or signs of acute abdomen, more detailed investigations and treatment are indicated in order to establish the exact diagnosis.

Occasional abdominal pain was the major symptom in the reported patient. Ultrasound examination of the pelvis failed to evidence possible presence of a malignant process while tumor change was interpreted as subserous myoma of the uterus. It has been known that the presence of melanin in the course of magnetic resonance imaging may show changes in signal acquisition. Our patient did not undergo magnetic resonance imaging since malignant tumor in the small pelvis was not suspected.

More detailed clinical examination of the skin and visible mucosal membranes failed to evidence melanoma of any other localization or other secondary deposits and based on the history, pigmented skin tumor was confirmed. It is assumed that spontaneous regression of the primary lesion sometimes occurred.

The tumor was unilateral, which is a frequent characteristic of secondary melanoma, its structure was solid, yellowish colored and it infiltrated extensively the ovarian tissue, without penetration of the capsule. No residues of the teratomatous component were found in the tumor, which was important for determination of the primary nature of melanoma.

In the reported case, the tumor was subjected to detailed histopathological examination and no teratomatous elements were detected, while previously diagnosed skin melanoma was suggestive of the metastatic nature of the tumor.

Establishment of the accurate histopathological diagnosis and evaluation of differential diagnostic possibilities of other ovarian neoplasm require verification based on immunohistochemical demonstration of S-100 proteins, HMB-45 and negative staining for keratin and other antigens. In case of our patient, histopathological diagnosis was confirmed immunohistochemically by positive tumor cell staining for HMB-45, anti-Melan-A and S-100 protein.

Reductive surgery is currently considered to be the most important approach to treatment of malignant ovarian melanoma, although different additional protocols of chemotherapy and radiotherapy are also available, as well as attempted treatments based on application of immunotherapy. The treatment of the patient included total hysterectomy and...
bilateral adnexectomy with selective iliac lymphadenectomy and infracolic omentectomy. 

**Conclusion**

The presented patient shows that seemingly insignificant and occasional painful sensations in the small pelvis may be the result of a highly malignant process, which may occasionally lead to misdiagnosis of primary benign tumor owing to its localization and structure. The absence of teratomatous component in malignant ovarian melanoma evidenced by histopathological analysis is indicative of secondary deposits. The previous diagnosis of skin melanoma was also indicative of metastatic ovarian tumor, while immunohistochemical analyses confirmed the histopathological diagnosis.

**REFERENCES**


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