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Patient history

Patient is a 38 year old female who presented with a 2 month history of lower abdominal pain. A 13 x 12 x 12 cm left complex cystic mass in the pelvis was discovered on CT for which the patient was treated with left salpingo-oophorectomy. The right ovary was inspected during surgery and found to be grossly normal. The left ovary consisted of solid areas with a smooth tan-brown cut surface interspersed with intact cystic structures filled either with keratinosebaceous material or clear watery fluid.
The left ovary showed ovarian cystic structures lined by flattened squamous epithelium
High power view showing junctional activity of melanocytes in the squamous epithelium.
Focally a 2 cm tumor nodule is found in the cyst wall.
Higher magnification of the tumor
Epithelioid tumor cells and junctional activity of melanocytes in the overlying epithelium.
Focal ulceration which overlies the tumor with ruptured hair follicles
High magnification shows a hair shaft surrounded by foreign body type giant cells.
Tumor cells stain positively for the melanocytic markers S100, Melan-A, HMB 45 and Vimentin.
Radial growth phase of melanocytes
Vertical growth phase of melanocytes

HMB-45
Final Diagnosis:
Primary malignant melanoma of the ovary arising in a cystic teratoma

Discussion

• Malignant melanoma involving the ovary is uncommon. Most cases are metastatic lesions, and primary ovarian tumors are very rare. According to one study, only one case of primary ovarian melanoma was identified among 23 cases of malignant melanoma involving the ovaries (1).

• Boughton *et al.* (2) and Cronje and Woodruff (3) proposed the following criteria for the diagnosis of primary ovarian melanoma: 1) no other possible sites of a primary tumor; 2) unilateral tumor within the ovarian teratoma; 3) good correlation of the patient’s age and symptoms with those of well-documented cases in the literature; and 4) demonstration of junctional activity.

• The ovarian primary of this malignant melanoma is demonstrated by the junctional activity of the melanocytes in the cystic teratoma, unilateral involvement of ovary, and no other melanocytic skin lesions found in this patient. The melanocytes in the squamous epithelium of the cystic teratoma are the only melanin producing cells of the ovary and most likely are the origin of this tumor.
References

