

Oxyphilic clear cell carcinoma of the ovary: Report of a unique case

Overin oksifilik berrak hücreli karsinomu: Olgu sunumu

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ABSTRACT

Clear cell carcinoma (CCC) of the ovary is a rare and easily recognized, malignant tumor, composed of typically polyhedral cells which have distinct cell membranes, and contain abundant clear cytoplasm and eccentric nuclei. They may be associated with endometriosis and often have a poor prognosis. Here, we report a case of bilateral oxyphilic variant CCC of the ovary with widespread metastasis, and peculiar features and differential diagnosis of this rare neoplasm are briefly discussed. In conclusion, clear cell carcinomas must be thought in the differential diagnosis of the ovarian tumors which contain oxyphilic cells

Key words: Clear cell carcinoma, ovary, oxyphilic variant

ÖZET

Overin berrak hücreli karsinomu nadir ve kolaylıkla tanımlanabilen, tipik olarak polihedral, hücre sınırları belirgin ve geniş berrak sitoplazmalı, eksantrik nükleuslu hücrelerden oluşan malign tümördür. Endometriozis ile ilişkili olabilirler ve sıklıkla kötü prognozludurlar. Bu makalede overde yaygın metastazları olan bilateral oksifilik tip berrak hücreli karsinom olgusu sunulmakta ve bu ender olarak görülen tümörün ilginç özellikleri ve ayırıcı tanısı kısaca tartışılmaktadır. Sonuç olarak, berrak hücreli karsinomlar, oksifilik hücreler içeren over tümörlerinin ayırıcı tanısında düşünülmesi gereken bir tümör olarak karşımıza çıkmaktadır.

Anahtar sözcükler: Berrak hücreli karsinom, over, oksifilik tip

INTRODUCTION

Clear cell carcinoma of the ovary is an uncommon, but well-known neoplasm. The prognosis of this entity is poor and generally surgical management is advocated. Recent studies have examined the staging, treatment and clinical follow-up of the disease, but few have dealt with morphological forms such as subtypes or variants (1). Although an accurate histopathological diagnosis of the biopsy specimen is a prerequisite for appropriate treatment, diagnosing oxyphilic CCC can be difficult because it mimics various types of neoplasms such as steroid cell tumors, hepatoid yolk sac tumor (YST) and hepatoid carcinoma. We describe a rare variant, oxy-

philic CCC of the ovary with bilateral involvement.

CASE REPORT

A 65-year-old postmenopausal woman was admitted to the Department of Obstetrics & Gynaecology of Pamukkale University School of Medicine for abdominal distension and pain. On ultrasonographic examination, ascites, papillary projections on the peritoneum and bilateral solid and septated ovarian masses were detected. Medical history of the patient was unremarkable.

The patient underwent complete surgical staging including intraperitoneal cytology, bilateral salpingo-oophorectomy, hysterectomy, omentectomy, pelvic and paraaortic lymphadenectomy, and aggressive cytoreductive surgery

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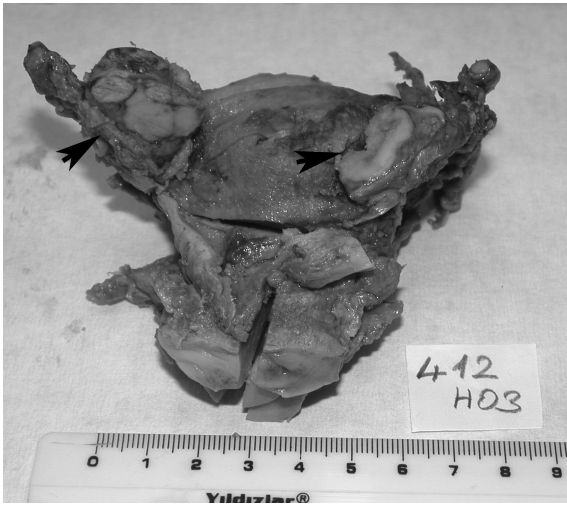


Figure 1. The uterus and ovaries are within normal size (black arrows)

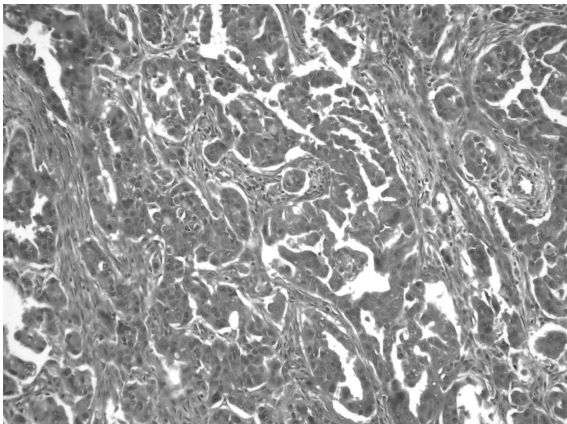


Figure 2. Tubules lined by oxyphilic cell types with abundant eosinophilic cytoplasm (HE x200)

due to advanced disease. The ovaries were normal in size with a smooth, lobulated external surface and yellow tan colored solid nodular areas (Figure 1). However, metastases in omentum, parametrium, bilateral tuba uterinas, liver, small intestine, sigmoid colon, appendix, pelvic and paraaortic lymph nodes were determined. Histologic examination showed a tumor composed of papillary and tubulocystic patterns lined by predominantly oxyphilic cells (Figure 2). Occasionally typical clear cells with sharply demarcated cell borders and hyperchromatic, pleomorphic nuclei were observed (Figure 3). Several PAS- positive cytoplasmic inclusions (Figure

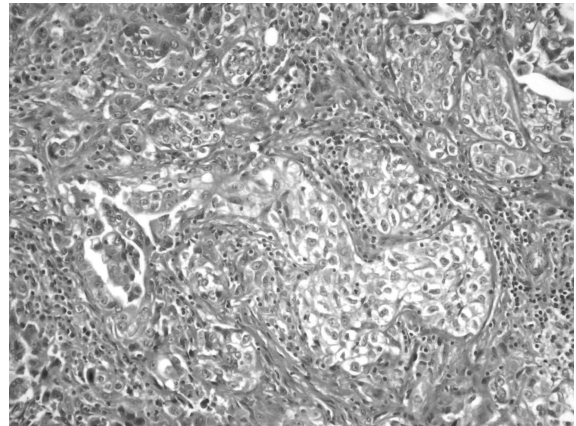


Figure 3. Occasional clear cell areas (HE x200)

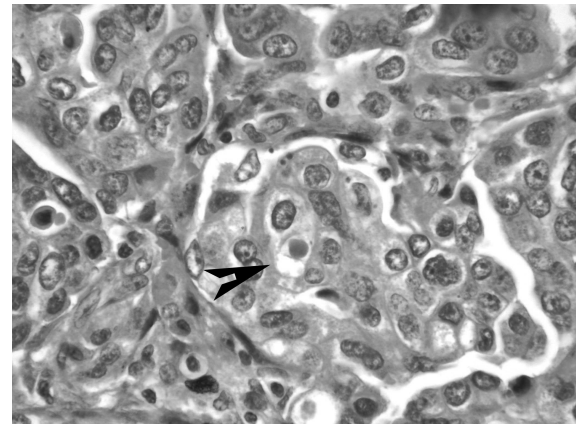


Figure 4. Cytoplasmic inclusions (black arrow, HE x400)

re 4) and abundant PAS positive cytoplasmic glycogen deposits were detected (Figure 5). The patient died of severe lung problems and widespread metastatic disease in the early post-operative period.

DISCUSSION

Clear cell carcinomas (CCCs) were first described in 1939 (2), and recently they have been classified as a subgroup of epithelial ovarian carcinomas (3). The presentation is usually that of a woman with an enlarging abdominal or pelvic mass but may also present with abdomi-

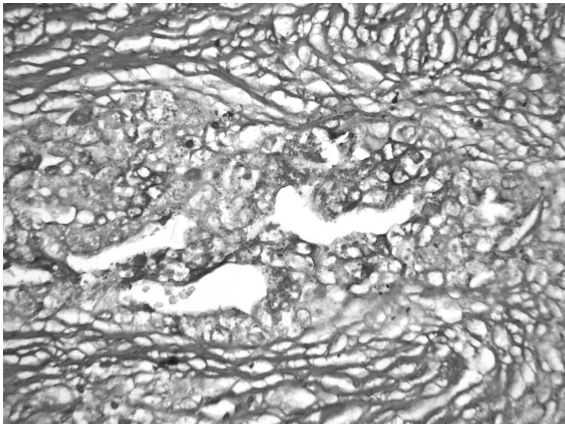


Figure 5. Abundant PAS- positive cytoplasmic glycogen (PAS x200)

nal distention or pain. We describe here, oxyphilic variant of CCC of the ovary with a prominent component of cells with abundant eosinophilic cytoplasm.

There is an oxyphilic variant of CCC in which eosinophilic granular cells are scattered among typical clear cells (1). The most prominent characteristic seen ultrastructurally is abundant cytoplasmic glycogen. It is important to obtain an accurate diagnosis, because several studies have showed that patients with CCC have a poor prognosis (3-5).

CCC contains tubules and cysts lined by clear cells and hobnail cells, and at a lower rate cuboidal, flat, and rarely oxyphil cell types with abundant eosinophilic cytoplasm. Clear cells can be found in almost all cases and they are by far the most common cell type. These cells are typically polyhedral, have distinct cell membranes, and contain abundant clear cytoplasm and eccentric nuclei. The presence of intracytoplasmic lumina with mucinous inclusions was described as a part of the morphology of clear cell carcinomas (6). In our case, several PAS- positive cytoplasmic inclusions were observed which may be present in 25% of the cases.

The age of our patient and the clinical presentation were similar to those reported. The size of the tumors is typically 15 cm in their greatest diameter, but they can reach 30 cm; CCCs

of the ovary is 15-20% bilateral. In our case the tumor was bilateral and the gross appearance of the neoplasm was interesting because, both ovaries were in normal size. Tumor nodules in the ovary were 1, 5 cm in their maximum diameters. Widespread metastases explain higher frequency of thrombo-embolic complications (1). These findings support the aggressive nature of CCC of the ovary.

CCC was composed predominantly or exclusively of oxyphilic cells that may closely resemble steroid cell tumors and other ovarian tumors characterized by cells with abundant eosinophilic cytoplasm, including; hepatoid YST and hepatoid carcinoma (7-9). Other patterns of CCC are constantly present in its as oxyphilic variants. The CCC is not associated with endocrine manifestations related to steroid hormone production and does not stain for inhibin, as the steroid cell tumors (10).

Hepatoid YST develops in young women, often contains foci of more typical YST, and shows positive results for alpha-fetoprotein (AFP) and alpha-1-antitrypsin. There is usually greater nuclear atypia and mitotic activity in a YST as well as Schiller-Duval bodies (1). The Schiller-Duval bodies, frequently present in YST, are absent in CCC. Leu-M1 positivity, and AFP negativity in CCC are more commonly seen than in YST, and these markers are often used to aid in differential diagnosis.

Hepatoid carcinoma occurs in an age group similar to CCC, but lacks the foci of typical CCC present in the oxyphilic form of the latter tumor, moreover, hepatoid carcinoma may contain foci of serous carcinoma (11). On the other hand, the possibility of metastatic CCC must be excluded (12). Clinical and radiographic findings normally help to discriminate ovarian clear cell from metastatic renal cell carcinoma. Renal cell carcinoma characteristically lacks hobnail cells and has a greater vascularity. Also, CCC with clusters of epithelial cells in a loose edematous stroma may resemble a Krukenberg tumor. A mucin stain should be negative in cle-

ar cell carcinoma. Our patient had neither a history of renal cell carcinoma nor clinoradiological evidence of renal lesion. Also, there was no evidence of intracytoplasmic mucin with periodic acid Schiff and Alcian blue staining.

Tumor spreads across the serosal surfaces to the lymph nodes, and most affected women are in stage III or IV at presentation. Surgical debulking of the tumor and chemotherapy are major therapeutic alternatives.

The diagnosis of CCC should always be considered in the differential diagnosis of an ovarian tumor with oxyphilic cells, particularly in the postmenopausal women. Thorough sampling should be undertaken in such cases to identify other, and more typical foci of clear cell carcinomas in order to avoid misdiagnosis and overtreatment.

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