Oxyphilic clear cell carcinoma of the ovary

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Oxyphilic clear cell carcinoma of the ovary is a rare variant of clear cell carcinoma with abundant eosinophilic cytoplasm. The importance of recognizing this entity lies in distinguishing it from diverse other primary and metastatic oxyphil cell tumors of the ovary.

A 60-year-old postmenopausal female presented with complaints of heaviness in the abdomen associated with loss of weight and appetite. There were no urinary complaints or bleeding per vaginum. A vague mass was palpable in the lower abdomen measuring about 8x5 cm. Multiple bilateral inguinal lymph nodes were palpable. On per vaginal examination, a firm solid mass measuring 8x4 cm was felt through the right and posterior fornix, extending into the left fornix. CA-125 was markedly elevated at 18,250 U/ml. Pap smear revealed benign reactive changes of inflammation.

Ultrasonography revealed a cystic lesion in the right iliac fossa measuring 9.4x3 cm with multiple hypoechoic solid areas measuring 4x4 cm in the right adnexal region. Contrast enhanced computerized tomography Pelvis revealed a complex right abdominopelvic mass predominantly in the right iliac fossa showing cystic component with multiple enhancing mural excrescences and an ill-defined solid component. There was extensive small bowel and omental involvement with anterior rectal wall infiltration, ascites and paraaortic lymphadenopathy. An impression of pelvic malignancy, most likely, ovarian was made. Barium meal follow-through did not reveal any significant abnormality.

A staging laparotomy with ovarian biopsy was performed. On peroperative examination, abdominal surfaces were studded with metastatic deposits. The tumor was unresectable, with sigmoid colon, uterus and both ovaries forming a single jammed up mass. Paraortic lymph nodes were enlarged and firm. Friable tissue bits from the tumor were sent for histopathology.

**Histopathological findings:** Microscopic examination revealed tumor cells arranged in nests, sheets [Figure 1], tubules and acini. Occasional papillary structures [Figure 2] were also noticed. The individual cells were large, round to polygonal with abundant eosinophilic cytoplasm, vesicular pleomorphic nuclei with coarsely clumped chromatin and one to two prominent eosinophilic nucleoli. Occasional giant cells were also seen. The tumor cells were separated by thin fibrovascular septa infiltrated by neutrophils, with focal areas of hemorrhage. Mitotic activity was 5-10/10 HPF. Also seen were foci of conventional clear cell carcinoma [Figure 3] and the characteristic hobnail cells. Tumor cells showed focal PAS positivity. Immunohistochemically, the tumor cells were cytokeratin (CK) and epithelial membrane antigen (EMA) positive and alfa fetoprotein (AFP) negative.

The diagnosis of oxyphilic variant of clear cell carcinoma ovary was established. Peritoneal fluid cytology revealed metastatic deposits from adenocarcinoma. Patient received one cycle of Cisplatin and Docetaxel. However, she expired six days following chemotherapy.

**Discussion**

The term oxyphilic clear cell carcinoma ovary was coined by...
Young and Scully in 1987. They described nine ovarian tumors characterized by a prominent component of cells with abundant eosinophilic cytoplasm.[1] It is an extremely rare tumor with only an occasional case reported from across the world.[2] To the best of our knowledge, this is the first case report of oxyphil clear cell carcinoma from our country. This variant can be misdiagnosed frequently as ovary is the site of a wider range of oxyphil tumors than any other organ.[3] Therefore, thorough sampling of tumor is needed to identify foci of conventional clear cell carcinoma in a variety of ovarian tumors with oxyphilic cells which include steroid cell tumor, yolk sac tumor, hepatoid carcinoma, metastatic renal carcinoma [Table 1] etc.[1,4] Other neoplasms that are rare in the ovary but may comprise oxyphil cells include malignant melanoma, metastatic hepatocellular carcinoma, paraganglioma, rhabdomyosarcoma etc.[3,5] Immunostains may be very helpful in the evaluation of oxyphilic tumors and tumor-like lesions and in some unusual forms of clear cell neoplasia.[6] Montag et al., analyzed 44 cases of ovarian clear cell carcinoma.

A predominant tubulocystic architectural pattern was found to be a good prognostic factor ($P < 0.01$). However, no significant difference in survival by cell type (clear, hobnail, eosinophilic and flattened) was found. Stage at presentation was the most important prognostic factor ($P < 0.001$).[7]

In the index case the patient had widespread involvement of the uterus, liver, colon, and peritoneal cavity. However, markedly elevated CA-125 indicated an ovarian origin of the tumor. The presence of typical foci of clear cell carcinoma along with oxyphil cell areas helped in establishing the diagnosis of oxyphilic clear cell carcinoma. This case highlights the fact that the diagnosis of clear cell carcinoma should always be considered in the differential diagnosis of an ovarian tumor with oxyphil cells, particularly if the patient is postmenopausal.

**References**


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