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Case Report

Bilateral ovarian carcinoma with colorectal metastases - An unusual presentation

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ABSTRACT

Primary ovarian carcinoma may metastasize to the peritoneum leading to malignant ascites. Four percent cases of primary ovarian carcinoma can involve the colorectum. We present a case report of a 50-year-old women who had complaints of bilateral adnexal mass and disturbed menstruation with altered bowel habits. Computed tomography scan of the abdomen and pelvis showed a bilaterally enlarged ovaries and a lobular rectal mass. Proctoscopy substantiated the rectal mass as an ulcerated lesion. Histopathology confirmed the diagnosis as bilateral serous papillary cystadenocarcinoma. Left hemicolectomy specimen illustrated foci of atypical glands. Immunohistochemical staining of both the tumor masses showed strong cytokeratin 7 positivity with negative cytokeratin 20 expression. Bilateral involvement of the ovaries with colorectal metastasis is very uncommon, which is highlighted in this paper.

1. Introduction

Ninety percent of malignant ovarian tumors are epithelial in origin.[1] Primary ovarian carcinoma may metastasize to the peritoneum leading to malignant ascites. Blood borne spread of tumor can also the contralateral ovary and more distant sites.[2,3]

Ovary is the site for both primary and metastatic tumors. Colorectum may be involved from metastatic spread of primary cancer of the ovary in approximately 4.0% cases and an isolated rectal metastasis is very rare.[4,5] The most common subtype of the metastatic ovarian tumor is endometrioid adenocarcinoma.

Identification of the correct primary lesion can help in the appropriate management, with incorporation of specific chemotherapeutic regimen in later stages of the disease. Ovarian adenocarcinomas are more responsive to platinum based chemotherapy whilst colonic adenocarcinoma are susceptible to 5-fluorourocil combination therapy.[6]

2. Case Summary

A 50-year-old female presented to the Obstetrics and Gynaecology Clinics with complaints of pain in the lower abdomen with heavy menstruation and altered stool. On examination, there was tenderness and bilateral discrete adnexal lumps.

Computed tomography scan of the lower abdomen revealed bilateral heterogenous echogenic discrete ovarian masses of 10.4 x 8.3 cm each and an irregular lobulated mass of 8.4 cm in length in the proximal rectum. Proctoscopy showed an ulcerated exfoliative growth in the rectum. A total hysterectomy with bilateral oophorectomy was performed.

Grossly the cut surface of both the ovaries showed solid and cystic necrotic and haemorrhagic areas. Microscopically tissue sections showed papillary frond like architecture lined by columnar epithelium with stratification and marked cytologic atypia consistent with papillary serous cyst-adenocarcinoma (Figure 1). The sampled lymph nodes were positive for tumor cells. A left hemicolectomy with lymphadenectomy was also performed, which showed foci of atypical glands infiltrating into the muscularis propria,

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consistent with moderately differentiated adenocarcinoma (Figure 2). The regional lymph nodes were free of any tumor, but peritoneal metastasis was present. The patient was staged as T3cN1M1 and FIGO stage IV disease.

Immunohistochemistry of both the ovarian and rectal masses showed strong cytokeratin 7 positivity (Figure 3) and negative cytokeratin 20 expression (Figure 4), which confirmed the colorectal metastasis from the primary ovarian cystadencarcinoma. Chemotherapeutic regimen of 6 cycles of 50 mg of cisplatinum and 100 mg of 5-fluorourocil was administered to the patient. She tolerated the medicines very well and she is doing well after 6 months of follow up period.

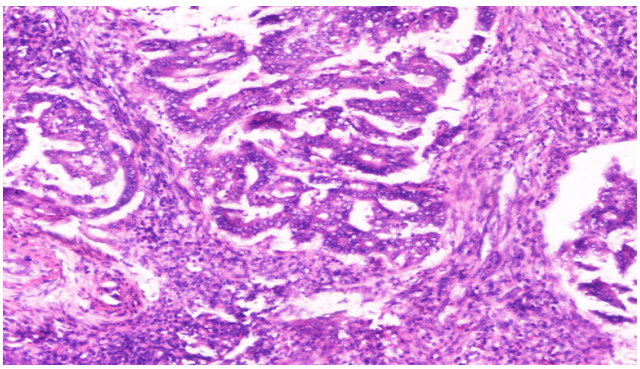

Fig. 1: Carcinoma Ovary shows papillary frond like architecture lined by columnar epithelium with stratification and marked cytologic atypia infiltrating into the stroma. Hematoxylin & Eosin x 40X.

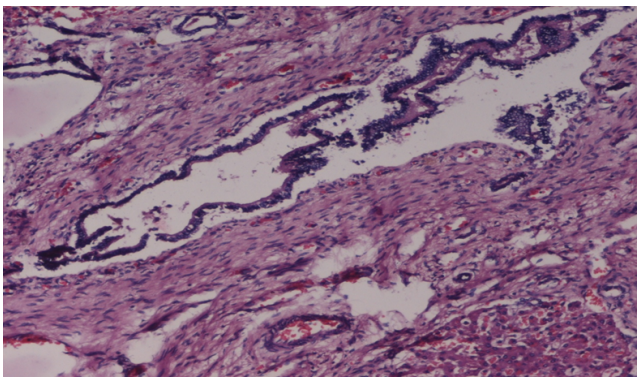

Fig. 2: Colorectal carcinoma shows foci of atypical glands infiltrating into the muscularis propria, consistent with moderately differentiated adenocarcinoma. Hematoxylin & Eosin x 40X.

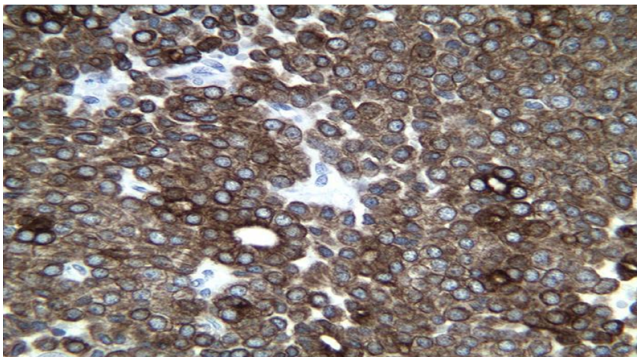

Fig. 3: Positive immunohistochemical staining for cytokeratin 7. Immunostain Cytokeratin 7 x 40X.

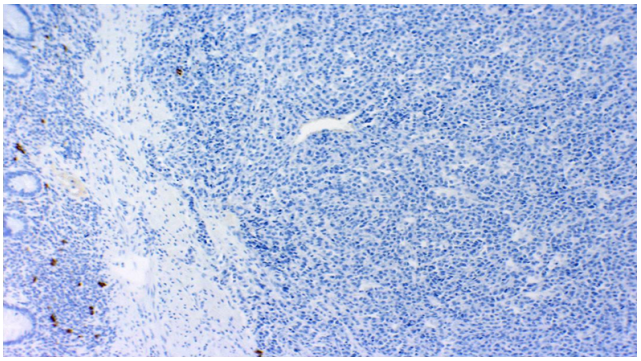

Fig. 4: Negative immunohistochemical staining for cytokeratin 20. Immunostain Cytokeratin 20 x 40X.

3. Discussion

Colo-rectal metastasis from ovarian cancer is very rare. Haraoka et al have reported 6.0% cases of colo-rectal metastases from primary ovarian cancer.[5] Koyama et al have reported only 19 such cases since 2005 in Japan in patients aged between 34 to 77 years with an average age of 58.8 years.[7] Majority of the metastatic lesions in their study was seen in the descending colon and rectum. It is very difficult to distinguish colo-rectal metastasis from primary ovarian carcinoma and primary colon cancer based on the microscopic appearance. But immunohistochemistry aids in the conclusive diagnosis of the lesion.[7]

Clinical manifestations of metastatic disease can be abdominal discomfort, bowel obstruction, a palpable abdominal mass or may even be free of symptoms.[8,9] Diagnostic evaluation such as abdominal CT or ultrasonographic imaging can reveal unilateral or bilateral masses in the pelvis, regional lymphadenopathy, ascites or a mass on the colon.[10] Endoscopic evaluation and subsequent assessment of biopsies are necessary for the diagnosis and identification of the tumor origin.[10,11]

The pathway of spread of malignant ovarian neoplasm to the colorectum may be through four different routes: lymphogenous, hematogenous, by direct infiltration of the bowel wall, or by spread through the peritoneum.[3] The transcoelomic route provides the most plausible pathophysiologic explanation for secondary disease to the colon.[11] Spread of tumor by the peritoneal route firstly involves the serosa, flowed by muscularis propria and

mucosa of the bowel wall.[12] In the present case, the tumor cells were seen in the serosa and infiltrating into the rectal muscularis propria.

The histomorphological features of colorectal metastasis are focal tumor necrosis and segmental destruction of glands whereas honeycomb proliferation with comedo-necrosis are seen in primary ovarian adenocarcinomas.[10] Metastatic foci of secondaries from the ovary may show the papillary serous morphology of ovarian carcinoma with psammomatous calcification.[12,13]

It is thus important to identify whether or not a tumor has an ovarian origin using immunohistochemical markers, since the occurrence of gastrointestinal metastases from ovarian cancer is very rare. Elevated levels of tumor markers such as CA-125 and CEA may aid in the diagnosis.[9] But the final diagnosis rests with the immunohistological staining to differentiate and locate the origin of the lesions. Specifically, immunohistochemical positivity for CK7, CA-125, estrogen and progesterone receptors is considered indicative of ovarian origin.[9,12] On the other hand, a CK20 and CEA positive stain hints at a colorectal origin.[10,13] In our case, the colonic tumor showed cytokeratin 7 positivity and negative for cytokeratin 20, which confirmed the ovarian origin.

The optimal debulking treatment of gastrointestinal metastases from ovarian carcinomas is wide surgical excision with a negative margin of 2–5 cm with wedge resection of the mesentery.[14] Our patient underwent total hysterectomy, bilateral oopherectomy and bilateral iliac lymphadenectomy with left hemicolectomy and 6 cycles of cisplatinum (50 mg) and 5-fluorourocil (100 mg) post operative chemotherapy. She is doing well after 6 months of follow up period.

4. Conclusions

Detailed clinical history, histomorphological features of focal necrosis, desmoplasia and psammomatous calcification and immunoexpression of cytokeratin 7 positivity and cytokeratin 20 negativity can be helpful in arriving at a conclusive diagnosis of an ovarian primary.

5. Source of Funding

None.

6. Conflict of Interest

None.

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