E-ISSN: 2706-9575
P-ISSN: 2706-9567
IJARM 2024; 6(4): 30-31
www.medicinepaper.net
Received: 05-09-2024
Accepted: 12-10-2024

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Case report - Metastatic mucinous ovarian adenocarcinoma

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DOI: https://doi.org/10.22271/27069567.2024.v6.i4a.594

Abstract
The difference between primary and secondary (metastatic) ovarian mucinous tumors can be clear, but there are still cases where making the correct diagnosis can be complicated. Special emphasis is on cases in which the correct diagnosis and the primary origin of the disease have an impact on the further course of treatment. In one of them, ovarian metastases may be misdiagnosed as a primary ovarian tumor because of pathologic features that may simulate a primary ovarian tumor. In the majority of such cases, further diagnostic work-up reveals a primary tumor elsewhere. However, in rare cases, the primary tumor may be undetected at the time of diagnosis and will only become clinically manifest and viable in the further course of the disease. According to current knowledge, the most reliable approach to the diagnosis of mucinous ovarian tumors combines macroscopic, microscopic and immunohistochemical evaluation in combination with close clinical-pathological correlation. Despite all efforts, there are still rare cases in which the diagnosis cannot be established with certainty and the exact conclusion about the primary or metastatic origin of the tumor.

Keywords: Ovarian carcinoma, primar intestinal tumor

Introduction
Ovarian cancer is a heterogeneous group of neoplasms. They differ in pathogenesis, tissue origin, clinical-pathological prognostic factors, molecular links and biological behaviour. The pathogenesis of Mucinous Ovarian Carcinoma (MOC) is complex. MOC is characterized by Gastrointestinal (GI) type morphology and accompanying immunophenotype. It can be associated with ovarian teratoma or Brenner's tumor [1]. Among the spectrum of mucinous ovarian tumors, invasive mucinous adenocarcinoma is less common than benign tumors and tumors of Low Malignant Potential (LMP or "borderline" or "atypical proliferative") [2]. Establishing an accurate distinction between primary and metastatic ovarian mucinous tumors is often very complicated. The diagnosis is especially complicated when we talk about the primary site of the tumor in the gastrointestinal tract, pancreas and biliary tract [3]. There is a large number of tumors for which, based on morphology and immunohistochemical characteristics, it is not possible to distinguish between a primary and metastatic tumor. Such tumors require close clinical-pathological cooperation. The reason for this is the overlapping of tumor morphology and immunohistochemical characteristics, and in some cases overlapping of molecular changes of primary and metastatic tumors. This applies especially to cases when ovarian metastases are clinically evident before the manifestation of the primary tumor. The primary site of the tumor is very often not detected even by imaging methods, until the operative procedure is started, so pathohistological processing of the preparation, morphological and immunohistochemical characteristics complete the picture and help in differential diagnosis.

Case presentation
A 30-year-old female patient comes to the gynecologist because of a growth in the right iliac region, which she has been following for a couple of months, and reports pain on the same side. In her gynecological anamnesis, she mentions two vaginal births, two spontaneous abortions, and that lately her menstruation is late, she only menstruates for three days. She also mentions a constant feeling of fever. Diagnostic processing: TVUS: uterus in AVF, dimensions 74x47x52 mm, endometrium 8.9 mm. In the projection of the right adnexa, a

tumoral change measuring 12x88 mm, clearly limited, partly cystic, partly solid. Left adnexa 39x24 mm. In c. Douglasi and in front of the uterus a column of liquid up to 34 mm. Tumor markers: HE 4 229 (H); Ca 125 47.6; Prem ROMA 76. After treatment, the patient's case was presented at the gynecological-oncology council, and it was decided to undergo surgical treatment, adnexectomy. Intraoperatively, in the abdominal cavity, there is an abundance of free, yellowish liquid, which is aspirated for the purpose of cytological processing. The right ovary transformed into a cystic formation the size of a medium ball, filled with liquid contents. On the left ovary, a cystic formation of the size of approx. 8x5 cm. In view of the findings and with the patient's prior consent, an adnexectomy on the right and a cystectomy on the left are performed, and the specimens are sent for pathohistological processing. The pathohistological finding of the right adnexa described Adenocarcinoma mucinosum (intestinal type) G2, most of it has the appearance of a "borderline" tumor with foci of intraepithelial carcinoma. Pathohistological finding of a left ovarian cyst with the same morphological characteristics as the described tumor of the right ovary. No malignant cells were found in the aspirate. Lymphogenic spread was not detected. CT scan of the abdomen and small pelvis after the operation describes multiple secondary deposits on the liver parenchyma, in the projection of the left ovary a cystic formation of the size of approx. 3 cm, and most likely in the projection of the sigmoid colon an infiltrative process. Endoscopic biopsy of the colon confirmed invasive adenocarcinoma. CEA 1278.31 ng/mL. The patient continues treatment in oncology, systemic chemotherapy. Four months later, she was hospitalized again in the gynecology department due to a formation on the incision wound and febrility. TAUS describes a hypoechoic change with a diameter of 4 cm in the incision wound projection on the right. According to the decision of the gynecological-oncological council, the subcutaneous tissue tumor was extirpated and sent for pathohistological examination, which confirmed that it was a metastasis of adenocarcinoma of the intestinal type, probably of large intestine origin. Proposed oncological treatments were continued and the control CT scan of the abdomen and pelvis showed progression of the left ovarian cyst, i.e. tumor-altered left ovary.

Discussion

In the case report by Santoro *et al*., a 58-year-old female patient with an expansive tumor mass in the pelvis, after surgical treatment and pathohistological diagnosis, showed sensitivity of the tumor tissue to CK20 and CDX2, and negativity to Er and CK 7, positivity, as in our case, to the intestinal type markers [1]. Metastatic ovarian tumors are usually smaller, bilateral, nodularly infiltrating the surface or stroma of the ovary. They are accompanied by an infiltrative type of invasion. Our report of a case with a primary tumor site on the large intestine showed the clinical manifestation of metastatic, primarily on both ovaries, dimensions of tumor changes with maximum dimensions of up to 10 cm, which fits into the described picture of the morphological features of metastatic ovarian tumors [3]. We search the literature and based on 49 separate studies; it was shown that unilateral tumors larger than 10 cm make up 15% of all metastatic tumors. Metastatic ovarian tumors are common and make up 5-30% of all ovarian tumors. Dundr P. *et al*. reviewed the literature and indicated that 4.7% of all ovarian tumors are metastatic. Metastatic tumors of the ovary most often originate from the gastrointestinal tract, accounting for 53.2% of tumors. The difference between a primary mucinous ovarian tumor and metastatic ovarian tumors from another primary source is important and has a direct impact on the treatment and prognosis of the patient.

Conclusion

In further clinical, diagnostic and therapeutic work, cases with features of mucinous ovarian adenocarcinoma should be viewed from a wider angle, leaving room for a clear distinction whether the tumor is primary or secondary metastatic. Current clinical practice has described how metastatic ovarian tumors are usually smaller, bilateral, nodularly infiltrate the surface or stroma of the ovary, and are followed by an infiltrative type of invasion. Establishing the correct diagnosis can be complicated, and the diagnosis of mucinous ovarian tumors relies on macroscopic, microscopic and immunohistochemical evaluation in combination with close clinical-pathological correlation.

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How to Cite This Article
Lačević L, Bulbul AP, Suljević A, Eminović E, Hodžić AV. Case report - Metastatic mucinous ovarian adenocarcinoma. International Journal of Advanced Research in Medicine. 2024;6(4):30-31.