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## Case Report

# Giant metastatic ovarian tumor originating from the colon in 61-year-old female – Case report


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### ARTICLE INFO

#### Article history:

Received 2 March 2013

Accepted 8 July 2013

Available online 9 July 2013

#### Keywords:

Ovarian cancer

Colorectal cancer

Metastases

Immunohistochemical tests

Ovarian tumor

### ABSTRACT

**Introduction:** Ovary is a common site of primary tumors and metastases. Metastases consist approximately 20% of ovarian cancers. Clinical symptoms of metastases may imitate symptoms of primary ovarian cancer. Metastatic tumors to the ovary in about 50%–80% of cases are bilateral. The 5-year survival rate is in the range of 10%–24%. It is rare not to localize the primary site.

**Aim:** A case of giant metastatic ovarian tumor of unknown primary site in 61-year-old multipara was presented.

**Material and methods:** The case was presented on the basis of medical record of the patient. **Case study:** A female with an abdominal mass was admitted to the Department of Gynecology for a surgical removal of the tumor. The patient complained of abdominal distension. She was qualified for a surgical procedure. During surgery a 24-cm tumor of the left ovary was resected. The intraoperative pathologic examination identified *cystadenocarcinoma mucinosum*. Surgical resection was extended and hysterectomy with right salpingo-oophorectomy and pelvic lymphadenectomy was performed. The pathologic examination reported that the tumor was compatible with *Adenocarcinoma metastaticum et intestino crasso*. Diagnostic imaging and endoscopy did not reveal a primary site. Two years after the surgery the patient feels well.

**Results and discussion:** In pathologic examination there was a difficulty in determining the primary site. Final diagnosis was made based on immunohistochemical results. Immunohistochemical profile: CK7(-), CA125(-), CK20(+++), CDX2(+++), Mucicarmine(±), is characteristic of colorectal cancer. Metastatic ovarian tumors require extended diagnostic imaging and histopathology.

**Conclusions:** In preoperative diagnosis of ovarian tumors possibility of metastases should be taken into account. Diagnostic difficulties require close collaboration between the clinician and the pathologist at each stage of cancer diagnosis.

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## 1. Introduction

Ovary is a frequent site of metastases from the other organs.<sup>2,6,7,9</sup> Metastatic ovarian tumors may spread in continuity, to adjacent organs, by implants, by peritoneal fluid, through blood vessels and lymphatic vessels. Most frequent is lymphatic spread. Approximately 10%–20% of ovarian tumors are metastases. The most common metastases derive from the gastrointestinal tract (about 36%), other parts of the reproductive tract (about 27%), breast cancer (25%), while other locations constitute 8% of cases. Other origins of malignancies are lymphomas, melanomas, choriocarcinomas, lung and bronchial cancers.<sup>4,5,6,7</sup> Histopathologically, 90% of metastatic tumors are adenocarcinomas. Mean age of patients with metastatic ovarian tumors is 50. Half of them are postmenopausal. Clinical symptoms of metastatic tumors imitate primary ovarian cancer and are unspecific. They may occur in the advanced stages of cancer. This includes abdominal distension, pressure on the internal organs, defecation disturbance and ascites. Ovarian metastases may also cause increased secretion of steroid hormones and hence the symptoms of virilization or hyperestrogenism. Metastatic tumors in approximately 50%–80% of cases occur bilaterally, often have compact structure and are smaller than primary ovarian cancers. Owing to the high incidence of metastatic tumors, preoperative diagnosis should be extended to investigate the possible presence of primary site in the most common localizations, i.e. gastrointestinal tract, uterus, breasts. In rare cases localization of the primary site of an ovarian metastasis is impossible. During surgical removal of ovarian tumors it is advisable to perform extemporaneous pathological examination. Surgical treatment of metastatic ovarian tumors should include hysterosalpingo-oophorectomy with the resection of greater omentum and biopsy of pelvic lymph nodes, and possibly operation of the primary organ.

The next stage of treatment is adjuvant therapy, dependent on the site of origin of cancer. Five-year survival rates are higher when lesions of diameter not exceeding 2 cm are left.<sup>6,9</sup> The prognosis for metastatic cancers is unfavorable. Five-year survival rates vary in the range of 10%–24%. The most frequent primary site of ovarian metastases is colorectum (60% of cases), stomach (31%), less frequently pancreas (about 3%) and small intestine (about 2%).

In 8%–16% of women with gastrointestinal cancer ovarian metastases are present, and in more than 80% of them metastases to other organs, such as the liver, lungs, peritoneum and lymph nodes, are also found. Inability to localize the primary site despite diagnostic imaging and endoscopy is rare.

## 2. Aim

The aim of this study was to present very rare case of giant ovarian metastasis from the colon in multipara with left renal agenesis. Despite diagnostic imaging and endoscopy primary site was not identified.

## 3. Materials and methods

The case was presented on the basis of medical records of the patient (Case History no. 28211/2010) hospitalized in the Department of Gynecologic Oncology, Ministry of Internal Affairs Hospital with Warmia and Mazury Oncology Centre in Olsztyn in December 2010.

## 4. Case study

The patient, 61-year-old multipara with abdominal mass probably originating from the ovary, was admitted to the Department of Gynecologic Oncology for surgical treatment. On admission, patient's general condition was good. The patient complained of abdominal distension accompanied by pressure on the bladder in recent weeks (Fig. 1). The patient is suffering from hypertension and type 2 diabetes mellitus from several years, from 3 years she receives oral antihypertensive and antidiabetic treatment. She was diagnosed with congenital renal agenesis. Menarche at 13 years of age, menstrual periods regular every 26 days, lasting about 3–4 days, average, painless. Menopause at 46 years of age. The patient was previously asymptomatic. She gave birth vaginally twice. She had a family history of stroke. CA125, CA19,9 and CEA were normal. After preoperative tests and obtaining written consent the patient was qualified for surgical treatment. After preparation, the patient underwent surgical resection of the giant tumor of the left ovary. During surgery in the abdominal cavity 4000 mL of colorless fluid and absence of left kidney were found. A tumor of the ovary measuring 24 cm in diameter and right adnexes in the form of multilocular cyst, 10 cm in diameter, were resected. Intraoperative pathologic examination identified ovarian tumor 24 cm in diameter, solid and cystic, with a smooth surface (Figs. 2 and 3). Histological examination confirmed *cystadenocarcinoma mucinosum*. In view of the aforementioned diagnosis, surgery was extended and hysterectomy with a right salpingo-oophorectomy, appendectomy, omentectomy and pelvic lymphadenectomy, as well as swabbing of the dome of diaphragm and peritoneal specimen was performed.



Fig. 1 – Picture of patient's abdomen before the surgery.



Fig. 2 – Tumor of the left ovary inraoperatively.



Fig. 3 – Tumor of the left ovary inraoperatively.

The postoperative course was uneventful. Histological results of postoperative specimen confirmed *Adenocarcinoma metastaticum et intestino crasso*. Tumor markers: CK7(-), CA125(-), CK20(+++), CDX2(+++) Mucicarmine(±).

The rest of postoperative material did not show any pathology despite uterine fibroids. The patient was discharged home in a good condition with a wound healed at the 7th postoperative day. In order to find primary site colonoscopy and gastroscopy were performed – no pathological lesions were identified within the stomach.

In the large intestine at a depth of about 20 cm from the sphincter, a flat polypus measuring 5 mm in diameter was found. Histological examination of the removed polypus confirmed *adenoma tubulovillosum*.

In order to find the primary site, positron emission tomography – computer tomography (PET-TK) of the abdomen was performed – the resulting images did not suggest any proliferative process with increased glucose metabolism. Except for posthysterectomy and salpingo-oophorectomy status and left renal agenesis, no pathological lesions were found. Following oncology consultation, with no primary site found, the patient was qualified for systemic therapy, as in mucinous ovarian cancer. She received six courses of

carboplatin without complications. Systemic therapy was completed in July 2011. Currently, the patient remains under the care of Oncology Clinic. More than 2 years after the surgery she feels well and in further endoscopy and diagnostic imaging no pathological lesions within the gastrointestinal tract were identified.

## 5. Results and discussion

In histopathological differential diagnosis cancer markers play a key role. In this case, difficulties in differential diagnosis with inability to find the primary cancer were presented. Final diagnosis was made on the basis of pathological diagnosis, determined by immunohistochemical tests.

The results obtained (Fig. 4), and most probably immunohistochemical profile: CK20(+) (Fig. 5), CDX-2(+) (Fig. 6), suggested colorectal cancer<sup>1,8</sup> and determined the final diagnosis: metastatic adenocarcinoma of the colon. Department of Pathology that had performed the previous examination, after further analysis of the case – IHC tests were performed additionally: β-catenin (+ membrane staining) and Amacr (+ focally) – confirmed the previous diagnosis, supported by the opinion of two pathologists, with the conclusion that in this case ovarian mucinous carcinoma of intestinal type cannot be excluded.

In the literature, the role of prophylactic oophorectomy in patients with colorectal cancer is being discussed.<sup>3</sup> Since in the intraoperative examination *Cystadenoma mucinosum* (mucinous cystadenoma) was diagnosed, in differential diagnosis possibility of metastasis from the colon, appendix, pancreas, biliary tract, stomach and uterine cervix, as well as mucinous adenocarcinoma of the ovary should have been taken into account.

Mucinous ovarian cancers constitute 10%–15% of all ovarian cancers. They occur particularly in middle-aged women, rarely post menopause. The majority of them (about 75%) include benign tumors, approximately 10% constitute tumors of borderline malignancy, and the remaining part (about 15%) – cancerous lesions. Microscopically mucinous tumors may be divided into two types: intestinal type and endocervical type (cervical). Immunohistochemically, mucinous ovarian adenocarcinoma

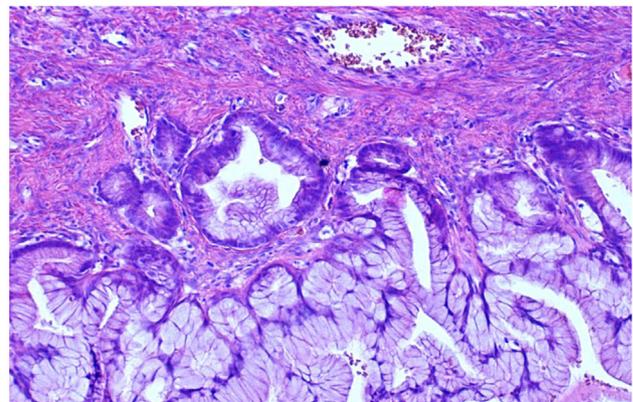
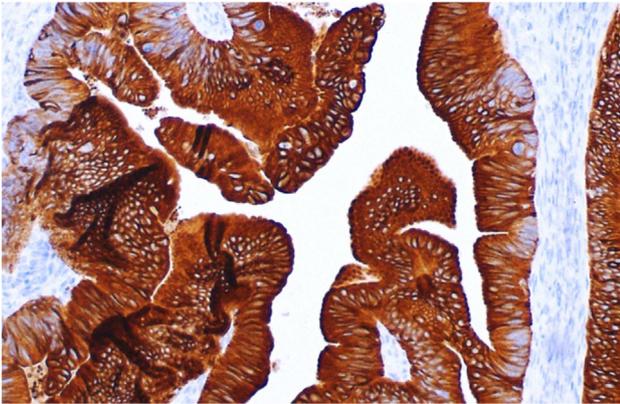


Fig. 4 – Adenocarcinoma mucinosum (HE stain, original magnification × 100).



**Fig. 5 – Adenocarcinoma mucinosum (positive immunohistochemical staining for CK20, original magnification  $\times 200$ ).**



**Fig. 6 – Adenocarcinoma mucinosum (positive immunohistochemical staining for CDX-2, original magnification  $\times 100$ ).**

cannot be distinguished from metastasis of colorectal adenocarcinoma.

## 6. Conclusions

In preoperative examinations of the large abdominal masses originating from the ovary, possibility of metastatic tumors should be taken into account. In addition to the diagnostics of

genital tract, preoperative endoscopy and mammography is advisable. Lack of markers clearly indicating location of the primary cancer in cases such as the presented (the same IHC profile) requires close cooperation between the clinician and pathologist at each stage of cancer diagnostics.

## Conflict of interest

None declared.

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