
Ovarian carcinoma diagnostic challenge: large ovarian carcinoma giving umbilical subcutaneous metastases without infiltrating intestines

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Summary

Introduction: The authors present an interesting case of large ovarian carcinoma challenging for diagnosis (with lymphonodal and umbilical subcutaneous metastases, but without infiltrating intestines and therefore causing few symptoms). **Case Report:** A 63-year-old patient, almost completely asymptomatic, presented with large bilateral adnexal masses. ROMA index was elevated. Abdominal and pelvic MRI scan showed presence of 20-cm mixed-consistency tumors of both ovaries and lymphedema in periumbilical subcutis. Only two parailiacal lymph nodes were enlarged. Patient had total hysterectomy with bilateral adnexectomy, selective lymphadenectomy, and excision of subcutaneous tumor. The right tumor formed the incarceration of the intestines, without infiltrating the intestinal wall. Histopathological analysis diagnosed ovarian serous papillary adenocarcinoma with metastases in lymph nodes and umbilical region subcutis. **Conclusion:** This report highlights that, although very rare, one of the first ovarian carcinoma manifestations can be its subcutaneous/cutaneous metastases. Additionally, lack of clear symptoms can exist in even at the advanced stage.

Key words: Ovarian carcinoma; Diagnostics; Intestinal incarceration; Cutaneous metastases.

Introduction

Malignant ovarian tumors present a diagnostic challenge due to their unspecific and late symptoms [1]. The common symptoms are pelvic and abdominal pain, bloating and gasses, decreased appetite, constipation, and tiredness. As the illness progresses, nausea, vomiting, diarrhea, weight loss, frequent urination from pressure to the bladder, and occasional vaginal bleeding may occur. All of these early and late symptoms and signs may be wrongly attributed to gastrointestinal or urinary tract pathologies [1, 2].

Ovarian malignancies are mostly diagnosed clinically or ultrasonographically as suspicious cystic, solid or mixed consistency formations on regular gynecological examinations or accidentally during other check-ups [3]. Although, imaging methods [transvaginal ultrasound (TVUS), MRI, as well as tumor markers (Ca 125, HE4, CEA, Ca 15-3, Ca 19-9), and different scoring systems can give valuable information regarding the ovarian tumors, none of the current diagnostic methods are reliable enough to be used as screening test for prediction and early detection of ovarian malignancies [2]. Consequently, malignant ovarian tumors are usually diagnosed at the advanced stage, making them one of the leading mortality causes in female population

worldwide [1].

The aim of this report was to highlight that, although very rarely, one of the first manifestations of ovarian carcinoma can be its subcutaneous or cutaneous metastases. Additionally, the authors are showing the diagnostic difficulties of ovarian carcinoma as the lack of symptoms can exist in even at the advanced stage. Moreover, this is the first case of giant ovarian carcinoma growing annularly around intestines, but without infiltrating them and therefore causing few symptoms.

Case Report

The authors present a case of a 63-year-old patient who was admitted to this institution due to presence of large bilateral adnexal masses. Patient was almost completely asymptomatic complaining only of occasional blunt abdominal pain mostly in the right adnexal region during last five to six months. Urination and defecation were regular. Her appetite was as always and she did not lose weight (BMI – 29.8 kg/m²). Due to already existing obesity, she denied registering abdominal bloating, enlargement or palpable masses.

Upon admission she was clinically and ultrasonographically thoroughly examined. On the TVUS a large (20 cm in diameter) tumefact with non-homogenous structure, was seen. It filled out

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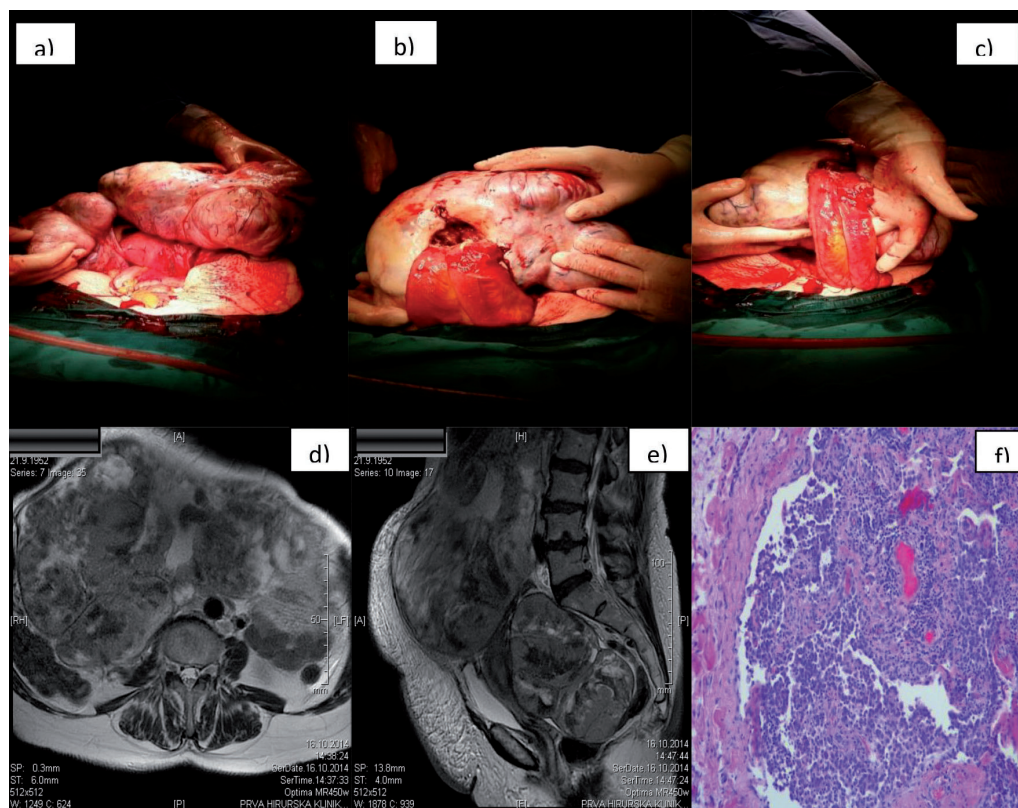


Figure 1. — Large ovarian carcinoma: a) surgical finding of bilateral tumors; b) and c) circular growth around intestines without infiltration; d) abdominal MRI transverse section; e) abdominal MRI sagittal section; f) histopathological finding of ovarian adenocarcinoma.

the whole pelvis and lower part of the abdomen, making it impossible to visualize neither uterus nor ovaries. All laboratory tests (blood count, biochemical analyses, and coagulation factors) were normal. Tumor markers Ca 125 (9445IU/L), HE4 (362IU/L), and ROMA index were elevated, while Ca 19-9, Ca 15-3 and CEA were in referral range. Based on tumor marker findings, ovarian origin of the tumor was assumed. Therefore, abdominal and pelvic MRI was performed and it confirmed presence of large partially solid and partially cystic tumors of both ovaries (right $12 \times 10 \times 13.6$ cm and left $17.6 \times 26 \times 17$ cm). The tumors were compressing surrounding abdominal organs, but without any sign of infiltration (Figure 1). Bilaterally parailiacally two enlarged lymph nodes 17 and 30 mm in diameter were noted, but all other lymph nodes had adequate characteristics. There were no signs of any secondary deposits. A lymphedema in periumbilical subcutis was registered. Thoracic RTG scan did not show pleural effusion or any other pathological finding.

The decision for operative treatment was made. After opening the anterior abdominal wall, the presence of 300-400 ml of free fluid was noted. The right ovary was completely transformed into the tumor, 20×30 cm in diameter, positioned behind the uterus reaching upward the mesogastrium. The left ovary was also transformed into the tumor, 15×20 cm in diameter, positioned in the left adnexal region. Both tumors were cystic, mostly yellowish, and partially livid, with smooth capsule.

The uterus was of normal size and characteristics. Numerous adhesions between tumors, peritoneum, intestines, and urinary bladder were present. There were no secondary deposits on the peritoneum, omentum, intestines or liver. The only other pathological formation visualized was a suspicious periumbilical subcutaneous tumor, livid, and 3×3 cm in diameter. Lymph nodes in

both iliac regions were slightly enlarged.

After adhesiolysis the authors noted that the upper part of the right ovary tumor was completely twisted around the small intestines. The intestines were passing completely through the tumor. Nevertheless, the tumor did not infiltrate the intestinal wall, but it was forming the incarceration of the intestines in the length of 15 cm (Figure 1).

Total hysterectomy with bilateral adnexectomy and selective iliac lymphadenectomy was performed. The authors also excised the whole tumor from subcutis. The postoperative course was uneventful. Patient recovered fully and was discharged from the Clinic.

On histopathological analysis, bilateral ovarian serous papillary adenocarcinoma with metastases in lymph nodes and subcutis (G3, NGII, FIGO IV) in the umbilical region was determined (Figure 1). Free abdominal fluid cytology showed few malignant cells. Therefore, patient was referred to chemotherapy (taxol-CBDCA) in the regional oncology center.

Discussion

Symptoms and signs of ovarian carcinoma present late, but in case of advanced and extremely large ovarian tumors, they are expected to be rather clear [1]. They involve pain, existence of palpable adnexal masses, abdominal distension, ascites, vomiting, intestinal obstruction with ileus, vaginal bleeding of different frequency and intensity, and different symptoms caused by metastases [1, 2]. The present patient was almost asymp-

tomatic, with only slight abdominal pain, even though the tumor was 20 cm in diameter. The particularity of presented tumefact was the overgrowth around the intestines that should have caused severe symptoms like ileus. Nevertheless, patient had normal intestinal function and defecation, which was quite misleading for early diagnostics.

Some benign ovarian tumors (pelvic tuberculosis, endometrioid cyst, adenofibromas, serous or mucinous cystadenomas, thecomas, mature teratoma) often present as large adnexal masses [4]. These tumors can sometimes be associated with increased levels of tumor markers and, if very large, they can even cause ascites [5]. Moreover, massive uterine myomas or intestinal tumors can also cause confusion during diagnostic process [4]. Therefore, the differential diagnosis of adnexal masses is based on tumor markers serum levels and imaging methods (UZ and MRI). Their results should be incorporated in algorithms for prediction of ovarian malignancy (ROMA and RMI) for more reliable preoperative patient evaluation [2]. Having no intestinal infiltration, like in the present patient, might mislead gynecologist in thinking that the tumor is benignant. Nevertheless, tumor markers and ROMA index of the patient were elevated, implying on ovarian malignancy. The authors also confirmed that malignancy should be expected in case of bilateral tumors. Another particularity of the patient was the diagnosis in the time of distant metastases in unusual cutaneous localization, without local invasion to the surrounding organs.

Epithelial ovarian carcinoma usually spreads to contiguous pelvic structures, surrounding abdominal organs, and lymph nodes [6]. Ovarian carcinomas Stages I and II have retroperitoneal lymphatic dissemination in about 5–10% in most literature data, whereas Stage III has been reported to be as high as 42–78% in carefully explored patients [7]. Metastases in pelvic (58%), mesenteric/omental (29%), para-aortic (26%), or supradiaphragmatic (6%) lymph nodes are most common [8]. Mostly, ovarian carcinomas metastasize through the peritoneal cavity to cause a visceral spreading. The first abdominal organ that is infiltrated is usually the intestines. Distant metastases seldom occur in the absence of intra-abdominal disease. According to literature data less than 20% of patients with Stage IV disease showed no evidence of persistent intra-abdominal disease at the time of diagnosis with distant metastases [6, 9]. In the present case, the authors found no signs of peritoneal cavity metastases and furthermore, no infiltration of intestines, but very strange annular growth around intestines with metastases in lymph nodes and subcutis. Other authors also reported few rare cases of singleton metastases on different abdominal organs (liver, spleen) without peritoneal or intestinal spreading of ovarian carcinoma [10]. It is assumed that in such cases the carcinoma metastasized hematogenically.

Distant metastasis of ovarian carcinoma commonly spread to the lung, liver, bone, and central nervous system [6, 9, 10]. Cutaneous and subcutaneous metastases from ovarian cancer, especially in the umbilical region, are quite uncommon, occurring in not more than 5% of patients, mainly, as advanced disease and are associated with poor prognosis. Skin metastases can present as isolated nodule, multiple nodules, inflammatory herpetiform lesions, and cicatricial plaques [11–13].

If skin metastases are located in the periumbilical region, they are referred as “Sister Mary Joseph’s nodules” according to the first researcher that noticed the correlation with advanced internal malignancies [14]. It is an indication of poor prognostic outcome. The most common tumor type that gives metastases to the umbilicus is the adenocarcinoma. Approximately 1–3% of abdominopelvic malignancies arising from gastrointestinal tract, prostate, and liver give umbilical metastases. Uncommon primary origins that metastasize in umbilical region include the breast, lung, ovary, and kidney [11–13]. However, a rare umbilical nodule may be the first manifestation of ovarian disease. There are several theories explaining the pathogenesis of skin metastases in ovarian cancer: direct invasion from the underlying growth or spread of the tumor cells through lymphatics and rich vascular anastomoses that supply the umbilical region. The direct peritoneal spread, which is considered as more common, is further enhanced by the multiple peritoneal folds comprising the umbilical ligament and ligamentum teres [11–13]. The metastatic umbilical nodule is often painful, but in the present case, patient did not complain on any symptoms.

Conclusion

Based on presented case, it can be seen that even large bilateral ovarian malignancies in advanced stage with lymphonodal and distant metastases can cause few and unspecific symptoms. Once subcutaneous/cutaneous masses are detected, especially in the umbilical region, patient must be thoroughly investigated for malignant disease. For every such patient, presence of ovarian carcinoma must also be evaluated through gynecological examination, laboratory analyses with tumor markers, and imaging of pelvico-abdominal region.

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