Ultrasound, macroscopic and histological features of malignant ovarian tumors. Metastatic tumors to the ovary: ovarian metastases from biliary tract and ovarian metastases from colon cancer

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CLINICAL INFORMATION

The patient was referred to our center for **bilateral solid adnexal masses** and **free fluid in the pouch of Douglas** that were incidentally detected during a routine transvaginal ultrasound examination performed at another hospital.

The patient reported weight loss and serum levels of **oncological markers** were:
CA 125 249 U/ml, CA 19.9 117 U/ml, CA 15.3 19 U/ml, CEA 57 ng/ml.

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Video 1 Two cases of ovarian metastases. The first video shows clinical, ultrasound, macroscopic and histological features of a patient with ovarian metastasis from biliary tract. The second video presents clinical, ultrasound, macroscopic and histological features of a patient with ovarian metastases from colon cancer.

SUMMARY

The objective of this video is to present two cases of ovarian metastases, examined at the Gynecologic Oncology Unit of the Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, in Rome, Italy.

The first case is a 79-year-old patient with no family history of cancer and a past medical history of cholangiocarcinoma and left oophorectomy for ovarian metastasis. She was referred to our center for omental cake and a right adnexal mass detected at CT scan during oncological follow-up. The patient was asymptomatic and serum levels of oncological markers were: CA 19.9 155 U/mL (reference range 0–37 U/mL), CEA 1.4 ng/mL (reference range 0–5 ng/mL). Transvaginal ultrasound examination performed at our center showed a right multilocular solid tumor (>10 locules) of 96×113×94 mm, with low-level content and irregular internal walls with a solid component of 38×22×23 mm in size.¹ The mass showed rich vascularization at color Doppler examination. IOTA ADNEX² showed an increased risk of malignancy, with highest relative risk either for stage II–IV ovarian cancer or for metastatic cancer to the adnexa (link to the IOTA ADNEX model calculator: <https://www.iotagroup.org/sites/default/files/adnexmodel/IOTA-ADNEXmodel.html>). Moreover, the tumor was classified as Ovarian-Adnexal Reporting and Data System (O-RADS) 5.³

At laparoscopy, the presence of the right ovarian mass was confirmed. Thus, a right salpingo-oophorectomy and peritoneal biopsies were performed.

The macroscopic assessment confirmed the presence of a solid cystic neoformation of 14 cm in size and the absence of residual ovarian parenchyma.⁴ The final histology report described ovarian tissue infiltrated by adenocarcinoma with morphological and immunohistochemical aspects compatible with biliary tract carcinoma.⁵ Tubal tissue and peritoneal biopsies were negative for atypia.

The second case is a 69-year-old patient with no family history of cancer and a previous laparotomy performed for a myomectomy. She was referred to our center for bilateral solid adnexal masses and free fluid in the pouch of Douglas that were incidentally detected during a routine transvaginal ultrasound examination performed at another hospital. The patient reported weight loss and serum levels of oncological markers were: CA 125 249 U/mL (reference range 0–35 U/mL), CA 19.9 117 U/mL (reference range 0–37 U/mL), CA 15.3 19 U/mL (reference range 0–32.5 U/mL), CEA 57 ng/mL (reference range 0–5 ng/mL). Transvaginal ultrasound examination was performed at our center and it showed bilateral adnexal solid masses with inhomogeneous echostructure, irregular external walls, and no stripes.¹ The right solid mass was 118×78×67 mm in size and the left solid mass was 74×60×64 mm in size. At color Doppler examination, the right ovarian mass showed moderate vascularization and presence of the lead vessel was also observed.⁶ We applied the IOTA ADNEX model² to the target lesion—the right solid mass. IOTA ADNEX showed an increased risk of malignancy, with highest relative risk either for stage II–IV ovarian cancer or for metastatic cancer to the adnexa (link to the IOTA ADNEX model calculator: <https://www.iotagroup.org/sites/default/files/adnexmodel/IOTA-ADNEXmodel.html>). Moreover, the tumor was classified as O-RADS 5.³

MRI showed bilateral adnexal solid masses of 11 cm (right mass) and 5.5 cm (left mass), respectively; ascites, abdominal and pelvic

Figure 1 Ultrasound and macroscopic images of a 79-year-old patient with ovarian metastasis from biliary tract (A, B) and a 69-year-old patient with ovarian metastasis from colon cancer (C, D).

lymphadenopathy, and nodules in both liver and right adrenal gland were present.

The patient underwent an exploratory laparoscopy, which confirmed the presence of bilateral adnexal masses with recto-sigmoid compression. Multiple iliac and para-aortic lymphadenopathies were also visible. At frozen section, ovarian biopsies were positive for low-grade serous ovarian carcinoma. Therefore, the patient underwent a laparotomy and total hysterectomy, bilateral adnexectomy and biopsy of the superior mesenteric artery lymph node were performed.

At macroscopic examination, bilateral solid tumors were detected.⁴ The final histology report was positive for colon cancer ovarian metastases.⁵

The patient underwent a colonoscopy, and a biopsy performed at the level of the recto-sigmoid junction was positive for adenocarcinoma.

A CT scan showed irregular recto-sigmoid thickening with perivisceral adipose tissue infiltration, abdominal and pelvic lymphadenopathy, peritoneal and liver metastases, as well as metastasis in the adrenal gland.

She was administered two courses of chemotherapy with CAPOX, which was then suspended for toxicity. She then underwent eight cycles of chemotherapy with FOLFOX and then four cycles of 5-fluorouracil and folic acid. Subsequently, because of progression of disease, the patient underwent a cycle of therapy with LONSURF, which was then suspended due to decay of general conditions.

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