Ultrasound, macroscopic and histological features of endometrioid and clear cell ovarian cancer

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SUMMARY

The objective of [Video 1](#) is to present two cases of epithelial ovarian carcinomas, examined at the Gynecologic Oncology Unit of the Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, in Rome, Italy. Our local Ethics Committee was consulted, but this article is exempt from the need for approval.

The first case is a 45 years' old woman with no family history of cancer, and a past medical history of hysterectomy and bilateral salpingectomy performed three years before because of diffuse uterine fibromatosis, and her history was negative for endometriosis. The patient was referred to our center for bilateral adnexal masses incidentally detected during a routine transvaginal ultrasound examination performed at

another hospital. Serum levels of oncological markers were: CA 19.9 83.2 U/mL (reference range: 0–37 U/mL), CA 125 51.4 U/mL (reference range: 0–35 U/mL), CA 15.3 19.3 U/mL (reference range: 0–32.5 U/mL), AFP 2.70 ng/mL (reference range: 0–6 ng/mL), and CEA 4.3 ng/mL (reference range: 0–5 ng/mL). Transvaginal ultrasound examination performed at our center showed a left multilocular solid tumor of 69×46×46 mm in size, with low-level content and a large central solid component of 37×30×32 mm in size. The solid component was entrapped within locules that gave the tumor a cockade-like appearance ([Figure 1](#)).¹ A right multilocular solid tumor of 55×27×35 mm in size was also seen and a cockade sign was also observed in the right ovarian cyst. At

Video 1 Ultrasound, macroscopic and histological features of endometrioid and clear cell ovarian cancer

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Figure 1 Endometrioid ovarian carcinoma not developing from endometriosis appears as a multilocular-solid lesion with a large central solid component entrapped within locules, giving the tumor a cockade-like appearance.

color doppler examination, both ovarian masses showed a rich vascularization. We applied the IOTA ADNEX model² on the biggest multilocular solid mass, that is, the left ovarian lesion. The IOTA ADNEX model showed an increased risk of malignancy, with highest relative risk for either borderline ovarian tumor or stage I ovarian cancer (link to the IOTA ADNEX model calculator: <https://www.iotagroup.org/sites/default/files/adnexmodel/IOTA20-20ADNEX-20model.html>). Moreover, the tumor was classified as O-RADS 5.³

At laparoscopy, bilateral masses were visualized. Intraoperative frozen section of both ovarian masses were positive for adenocarcinoma. Therefore, bilateral oophorectomy, omentectomy, bilateral pelvic lymphadenectomy, and para-aortic lymphadenectomy were performed. There was no residual tumor. At macroscopic examination, multilocular solid-cystic masses were described.⁴ At histology, adenocarcinoma was confirmed within the endometriotic cyst and final histology report was positive for endometrioid ovarian carcinoma, G2, Figo stage IB 2.⁵

The second case is a 54 years' old woman with a family history of endometrial cancer (mother) and cervical cancer (sister). The patient was referred to our center for a pelvic mass of 70 mm in size detected during an ultrasound examination performed at another hospital for abdominal tenderness. Serum levels of oncological markers were: CA 125 211 U/mL (reference range: 0–35 U/mL), CA15.3 79 U/mL (reference range: 0–32.5 U/mL), and CA 19.9 179 U/mL (reference range: 0–37 U/mL).

Transvaginal ultrasound examination performed at our center showed a left multilocular solid tumor (<10 locules) of 67×66×84 mm in size, with low-level content, irregular internal walls for the presence of multiple papillary projections, and a solid component of 39×21 mm in size.⁶ The mass showed a moderate vascularization at color Doppler examination. The IOTA ADNEX model² showed an increased risk of malignancy, with highest relative risk for stage II–IV ovarian cancer (link to the IOTA ADNEX model calculator: <https://www.iotagroup.org/sites/default/files/adnexmodel/IOTA20-20ADNEX20model.html>). Moreover, the tumor was classified as O-RADS 5.³

Laparoscopy confirmed the presence of a left adnexal mass. Intraoperative frozen section of the left ovarian mass was positive for adenocarcinoma. Therefore, extrafascial simple total hysterectomy, bilateral salpingo-oophorectomy, para-aortic lymphadenectomy, removal of the left external iliac lymph nodes, and infracolic omentectomy were performed. The macroscopic assessment of the right mass confirmed the presence of a multilocular solid cystic tumor with pale yellow nodules.⁷ The final histology report was positive for ovarian clear cell carcinoma FIGO stage IIIA.⁸

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