Ultrasound, macroscopic and histological features of malignant ovarian tumors. Non-epithelial ovarian carcinomas: tubal choriocarcinoma and granulosa cell tumor

Lorena Quagliozzi,1 Viviana Lo Presti,1 Damiano Arciuolo,2 Floriana Mascilini 1

1Dipartimento Scienze della Salute della Donna, del Bambino e di Sanità Pubblica, Fondazione Policlinico Universitario A Gemelli, IRCCS, Rome, Italy

Biography: Dott.ssa Floriana Mascilini is a gynecologist of Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, in Rome. She is particularly involved in clinical research in ultrasound and gynecologic oncology.

The first case is a 31-year-old woman with no family history of cancer, and a past medical history of miscarriage diagnosed 7 months before. The patient was referred to our center for a right adnexal mass incidentally detected during an ultrasound examination performed at another hospital for irregular bleeding. Serum levels of oncological markers were: CA 125: 10.0 U/mL (reference range 0–35 U/mL), human epididymis protein 4: 46.1 pmol/L (reference range 0–150 pmol/L), and serum levels of β-human chorionic gonadotropin: 14 240 mU/mL. Transvaginal ultrasound examination performed at our center showed an oblong solid mass of 85×34×75 mm in size, situated medially to the right ovarian parenchyma, with inhomogeneous echostructure, irregular external walls, and no stripes (Figure 1A).1 Uterus, left and right ovaries were normal. At color Doppler examination, a moderate vascularization was detected within the adnexal lesion.

We applied the IOTA ADNEX model,2 which showed an increased risk of malignancy, with highest relative risk for stage I ovarian cancer (link to the IOTA ADNEX model calculator: https://www.iota.org/sites/default/files/adnexmodel/IOTA-ADNEXmodel.html). Moreover, the tumor was classified as O-RADS 4 (Ovarian-Adnexal Reporting and Data System).3

Video 1 Clinical, ultrasound, macroscopic, and histological details of a 31-year-old patient with tubal choriocarcinoma and a 28-year-old woman with tubal choriocarcinoma granulosa cell tumor.
hemorrhagic areas with giant-tube with yellowish necrotic debris. At microscopy, necrotic and performed. Macroscopy showed the presence of a dilated fallopian last cycle of chemotherapy, the right solid adnexal lesion appeared gonadotropin decreased from 14 -human chorionic β on the right side with rich vascularization at color Doppler examination. Solid tissue with irregular margins and inhomogeneous distension. Serum levels of oncological marker CA 125 was 757 mL (reference range 0–35 U/mL). The patient, informed of the potential risk of spreading the tumor by having a biopsy, wished to postpone any radical surgery after the acquisition of the definitive histological examination. At final histology, fragments of tubular tissue in the aggregate seat of solid neoplasia consisting of cytotrophoblastic and syncytiotrophoblastic elements with marked atypia, in the absence of villar structures, were observed. Immune histochemical staining ultimately confirmed the diagnosis of tubal choriocarcinoma.

A chest CT scan documented pulmonary metastases (FIGO stage IV). The patient was treated with chemotherapy, including six cycles of EMACO (etoposide, methotrexate, actinomycin D, cyclophosphamide, vincristine/oncovine). Serum levels of β-human chorionic gonadotropin decreased from 14 240 to 6000 mIU/mL after one cycle of chemotherapy and they were within the normal range after six cycles. At ultrasound examination performed 1 month after the last cycle of chemotherapy, the right solid adnexal lesion appeared smaller than in the first scan (65×23×39 mm in size), and it showed minimal vascularization. A surgical procedure, including hysterectomy, left salpingectomy, and right salpingo-oophorectomy, was performed. Macroscopy showed the presence of a diluted fallopian tube with yellowish necrotic debris. At microscopy, necrotic and hemorrhagic areas with giant-cell granulomatous reaction, without evidence of residual neoplastic cells, were reported.

The second case is a 28-year-old woman with family history of colon cancer (maternal grandmother). The patient was referred to our center for a pelvic mass detected during a transvaginal ultrasound examination performed at another hospital for abdominal distension. Serum levels of oncolgical marker CA 125 was 757 U/mL (reference range 0–35 U/mL).

Transvaginal ultrasound examination performed at our center showed a normal uterus and left ovary and a voluminous mass on the right side with rich vascularization at color Doppler examination. Solid tissue with irregular margins and inhomogeneous echostucture was also seen in the pouch of Douglas. The transabdominal ultrasound examination confirmed the presence of a right multicellular solid mass of 184×94×130 mm in size, with several irregular locules, anechoic cystic content, and a solid component of 56×33 mm in size (Figure 1B). Ascites, right diaphragmatic carcinomatosis, and lesser omentum carcinomatosis were also described. Using pattern recognition, the ultrasound examiner suspected a mucinous malignant ovarian tumor. IOTA ADNEX model showed an increased risk of malignancy, with highest relative risk for borderline ovarian tumor and for stage II–IV ovarian cancer (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.

Laparoscopy confirmed the presence of a voluminous pelvic mass. Therefore, the patient underwent laparotomy and a right salpingooophorectomy was performed. During laparotomy, white plaques in the pouch of Douglas were observed. Peritoneal and omental biopsies were performed. The macroscopic assessment of the mass confirmed the presence of a multicellular solid tumor. Final histology report was positive for granulosa cell tumor, adult-type. Peritoneal and omental biopsies were negative for atypical cells (FIGO stage 1C2).

Author affiliations
1 Dipartimento Scienze della Salute della Donna, del Bambino e Sanità Pubblica, Fondazione Policlinico Universitario A Gemelli, IRCCS, Roma, Italy
2 Department of Surgical Pathology, Policlinico A Gemelli, Rome, Italy

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ORCID iD Floriana Mascilini http://orcid.org/0000-0003-0736-3114

REFERENCES