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Case Report

Laparoscopic Fertility-preserving Treatment of a Pure Nongestational Choriocarcinoma of the Ovary: Case Report and Review of Current Literature

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ABSTRACT This case report demonstrates the feasibility of laparoscopic and fertility-preserving approach in nongestational choriocarcinoma of the ovary (NGCO). Pure NGCO is a rare malignant condition. In the last decade, only 14 cases have been reported in the literature. The use of laparoscopy and fertility-preserving procedures in nonepithelial ovarian malignancies is extremely controversial. A 23-year-old woman underwent emergency laparoscopy due to acute abdominal pain associated with an 8-cm large adnexal mass. The initial procedure consisted only of a left oophoroplasty, and histology revealed a tumor of high malignant potential compatible with a primary NGCO. Approximately 3 weeks after initial surgery, she was submitted to a laparoscopic staging surgery, including left adnexectomy, omentectomy, peritoneal biopsies, and retroperitoneal lymphadenectomy. Final pathology confirmed an International Federation of Gynecology and Obstetrics stage IIB NGCO. Before initiation of adjuvant chemotherapy based on 3 courses of bleomycin, etoposide, and cisplatin, the patient received goserelin for ovarian suppression. Nine months after therapy, the patient presented no signs of recurrence and reassumed normal menstruation cycles with normal levels of gonadotropins and tumor markers. The current report brings new insights into the possibility of using use minimally invasive surgery and a combination of fertility-preserving methods for the treatment of NGCO. Journal of Minimally Invasive Gynecology (2015) 22, 1095–1099 © 2015 AAGL. All rights reserved.

Keywords: Fertility-preserving surgery; Laparoscopy; Nongestational choriocarcinoma of the ovary (NGCO); Ovarian suppression

Choriocarcinoma of the ovary is a rare and aggressive malignancy, which may be either gestational or nongestational in origin [1]. Epidemiologically, the first pathologic entity is far more frequent than the second one. Nongestational choriocarcinoma of the ovary (NGCO) accounts for less than .6% of all ovarian neoplasms [2,3]. The histopathologic diagnosis of NGCO is very difficult to confirm in women of reproductive age because of the absence of ultrastructural or immunohistochemical distinctive features between the 2 forms of the disease [4]. Currently, there is a notorious paucity of data regarding exact carcinogenesis, tumor biology, clinical course, and standard oncologic treatment of this condition. Particularly in regards to surgical therapy, the possibility of implementing fertility-preserving procedures or the use of laparoscopy are seldom discussed in the literature. Herein, we report a case of NGCO diagnosed in a young woman and discuss the diagnosis and treatment, especially the type and form of surgery, including a brief review of the current literature.

Case Report

A 23-year-old virgin woman was referred to the Department of Operative and Oncologic Gynecology, Asklepios

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Clinic Hamburg, Germany, after undergoing emergency explorative laparoscopy due to acute intermittent lower abdominal pain associated with a complex pelvic mass. The diagnostic hypothesis at this point was an adnexal torsion or a hemorrhagic ovarian cyst. During the surgery, an approximately 8-cm tumor arising from the left ovary was observed. The adnexum at this side was partially twisted because of the presence of the expansive lesion. Capsule rupture or peritoneal spread was not identified. At this time, she received only a tumor enucleation at this side. Histology revealed a tumor of high malignant potential compatible with a primary ovarian choriocarcinoma. Postoperative serum tumor marker analysis showed persistent elevated levels of β-human chorionic gonadotropin (β-hCG; 18 000 mIU/mL) and normal levels of CA-125, cardioembryonic antigen, alpha-fetoprotein, and lactate dehydrogenase.

Approximately 3 weeks after the initial surgery, the patient underwent a positron emission computed tomography that demonstrated a highly metabolic active residual lesion in the region of the operated ovary, without signs of extragonadal dissemination. Based on these findings (possible residual tumor and inadequate operative staging), the patient was extensively counseled about the therapeutic options, namely conservative versus radical surgery. She decided for the fertility-sparing option, and a laparoscopic staging surgery, including peritoneal washing and biopsies of suspicious areas, unilateral salpingo-oophorectomy (left), pelvic peritonectomy, retroperitoneal lymphadenectomy, and infracolic omentectomy, was performed without intercurrences.

Intraoperatively, there were no ascites or clear signs of peritoneal carcinomatosis. However, we observed an approximately 3-cm mass arising from the left ovary (Fig. 1) and a 5-mm large lesion in the cul-de-sac (Fig. 2). The right ovary and fallopian tube were normal in appearance. Optimal debulking was achieved with no macroscopic residual tumor. Final pathology revealed a 2.3-cm large residual choriocarcinoma on the left ovary and a small satellite lesion (3 mm) in the Douglas pouch. All other removed specimens, including 25 pelvic and para-aortic lymph nodes, were negative for malignancy. Further immunohistochemical analysis showed positivity for β-hCG, pancytokeratin, CK7, and Glypican 3 but negative immunostaining for CD30 and OCT4. Final tumor classification was pT2b pN0 L0 V0–International Federation of Gynecology and Obstetrics stage IIB NGCO. The patient developed no postoperative complications and was discharged 5 days after surgery. Fourteen days after the intervention, the serum level of β-hCG was undetectable.

Fig. 1

Laparoscopic appearance of an NGCO.

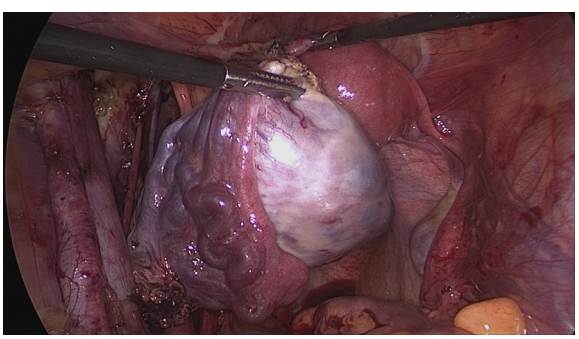
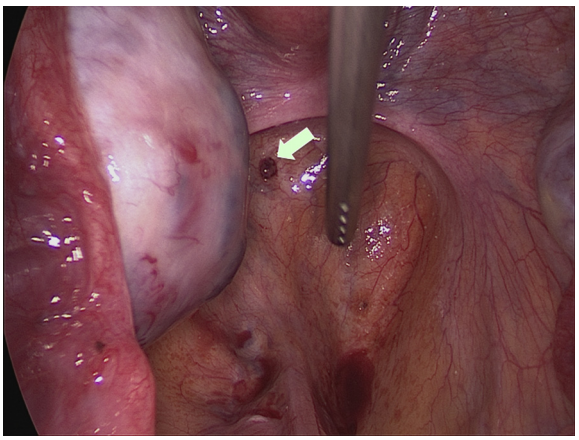


Fig. 2

NGCO implant in the posterior cul-de-sac.



Following the recommendation of our interdisciplinary tumor board, 3 courses of BEP (30 mg bleomycin on days 1, 8, and 15, cycles every 22 days; 100 mg/m^2 etoposide on days 1–5; 20 mg/m^2 cisplatin days 1–5) in the adjuvant setting were administrated. The patient was informed about potential risks of premature ovarian failure induced by chemotherapy and agreed to receive 10.8 mg goserelin for ovarian suppression before initiation of chemotherapy. The protective therapy and chemotherapy were administrated without major toxicity.

Serum concentrations of β-hCG and sexual hormones, thorax and abdominal CT scans, and pelvic and sonographic examinations were then performed every 3 months. Nine months after conclusion of the chemotherapy, the patient had no clinical or imaging signs of recurrence. She reassumed normal menstrual cycles approximately 5 months after the end of the systemic therapy and currently presents normal levels of gonadotropins (follicle-stimulating hormone, 7 mIU/mL; luteinizing hormone, 5 mIU/mL) and estradiol (50 pg/mL). Tumor markers remain negative.

Discussion

Primary choriocarcinoma of the ovary is a rare condition that affects women of childbearing age more frequently than other women [5,6]. Clinical symptoms are normally nonspecific and may include abdominal pain and vaginal bleeding. Despite its infrequent occurrence, it must be considered, in conjunction with distinct forms of abortion or ectopic pregnancy, a differential diagnosis in women