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Case Report

An Atypical Presentation of Non-Gestational Choriocarcinoma During the COVID-19 Pandemic: A Case Report

Aditi Bommireddy* and Jenna Emerson

Oregon Health & Science University, USA

***Corresponding author:** Aditi Bommireddy, Oregon Health & Science University, USA.

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Abstract

Non-gestational choriocarcinoma is a markedly aggressive ovarian germ cell tumor. This report describes an atypical presentation of non-gestational choriocarcinoma in a premenopausal female during the COVID-19 pandemic. The patient initially presented with respiratory symptoms and ultimately progressed to multi-organ failure. She underwent an extensive and thorough work up without a diagnosis for many weeks. A pelvic lesion was incidentally noted on routine exam and after histologic evaluation, she was diagnosed with non-gestational choriocarcinoma. The patient expired from respiratory failure secondary to widely metastatic disease within a day of diagnosis and before treatment could be initiated. The aim of this case report is to describe a rare gynecologic malignancy presenting as a diagnostic challenge for gynecologic and non-gynecologic providers alike.

Introduction

Non-gestational choriocarcinoma is a rare gynecologic malignancy that has primarily been described in case reports alone. It is rapidly progressing and has a poor prognosis, making early diagnosis critical. This report describes an atypical presentation of non-gestational choriocarcinoma in a premenopausal female during the COVID-19 pandemic. The workup and differential diagnosis are reviewed, demonstrating how the diagnosis was ultimately obtained. The aim of this case report is to describe a rare gynecologic malignancy presenting as a diagnostic challenge for gynecologic and non-gynecologic providers alike.

Case Report

The patient was a 49-year-old gravida 3, para 3 premenopausal woman who presented to emergency care for cough, wheezing, and new onset of hemoptysis in January 2021. Chest x-ray demonstrated right lung ground glass opacities concerning pneumonia. COVID test was negative and a CT-PE was negative for pulmonary embolus but showed nonspecific multifocal nodular consolidations with surrounding ground glass opacities throughout the lungs. Based on these findings, the patient was treated for pneumonia.

The patient had a subsequent Emergency Department (ED) presentation shortly thereafter for pelvic pain. Transvaginal ultrasound showed a 6 cm myoma and IUD appropriately positioned; outpatient follow up was recommended. About 3 weeks later, the patient once again presented to the ED with significant shortness of breath. She was tachycardic and hypoxic requiring 15 L of supplemental oxygen. A repeat COVID test was negative and CT-PE again was negative for pulmonary embolus but showed interval increase in rounded areas of airspace opacity throughout both lungs. She was started on broad spectrum antibiotics and was admitted for acute hypoxic respiratory failure secondary to multifocal pneumonia. During the admission, the patient reported vaginal pain and bleeding. Her hemoglobin was noted to be down-trending to 7.9 g/dL from a baseline of 11g/dL three weeks previous. A full infectious and vasculitis work-up was performed, both of which were unrevealing.

The patient's respiratory status continued to worsen, and she was transferred to the Intensive Care Unit (ICU) and intubated. At this time, she also began developing shock liver and renal failure.

In the ICU, the patient also developed new fevers. Multiple chest x-rays obtained over the next few days showed airspace opacities. Bilateral chest tubes were placed, and she was transferred to a higher level of care for Extracorporeal Membrane Oxygenation (ECMO) for management of Acute respiratory distress syndrome (ARDS) and sepsis of unknown etiology. She was initiated into ECMO and Continuous Renal Replacement Therapy (CRRT). Gynecology was consulted when the patient's nurse noted abnormal appearing vaginal tissue on routine assessment. On pelvic exam, there was significant brown discoloration and induration beginning at the vaginal introitus involving the labia minora and anterior vaginal wall approximately 6-7 cm into the vaginal canal. Biopsies of the abnormal vaginal tissues were obtained.

Final pathology gave a diagnosis of choriocarcinoma, and with this finding a quantitative HCG was obtained which resulted at >223,560. Bronchoscopy was performed and pulmonary cytology specimen also showed tumor cells consistent with those found on the labial biopsy. Gynecologic Oncology was consulted, however the patient expired from respiratory failure secondary to widely metastatic disease within a day of diagnosis and before treatment could be initiated.

Discussion

Choriocarcinoma is a gynecologic cancer that produces human chorionic gonadotropin and is composed of cytotrophoblasts which are the cells that lie in sheets to form villus like structures and syncytiotrophoblasts which are cells that secrete beta human chorionic gonadotropin and human placental lactogen [1-4]. Choriocarcinoma is characterized by a malignant transformation of trophoblastic cells of embryonic origin, whose purpose in normal physiology is to invade into the endometrium and ultimately establish the placenta. This naturally erosive and invasive process leads to a particularly aggressive disease when undergoing malignant transformation. Non-gestational choriocarcinoma does not arise from a pregnancy event, differentiating it from gestational choriocarcinoma. Non-gestational choriocarcinoma is extremely rare, with an incidence of 1/369,000,0004. It comprises 2.1% of all malignant germ cell tumors and less than 1% of all ovarian tumors [5-7].

Most of the information about non-gestational choriocarcinoma comes from case reports owing to its extremely rare nature. The clinical symptoms are mostly non-specific. Early metastases by hematogenous dissemination are common, thus metastatic disease at the time of diagnosis is common [4]. Brain involvement is the leading cause of death in these patients [2]. Metastases are commonly hemorrhagic, due to the innate ability of trophoblastic cells to invade and erode vessel walls [2]. The gross morphology of non-gestational choriocarcinoma is non-differential, typically characterized by hemorrhage and necrosis [3]. The tumor is often soft and friable, and mostly red, black, and brown in color. Viable tumors are often difficult to identify due to the high volume of necrosis but are most reliably identified on the leading margins of the tumor [3]. The diagnosis is made with histopathology, where a mixture of cytotrophoblasts, syncytiotrophoblasts, and occasionally intermediate trophoblasts are found. The cells demonstrate frequent atypical mitoses and are easily identified.

The prognosis of non-gestational choriocarcinoma is poor [2,5]. There are currently no guidelines or consensus on the standard treatment of non-gestational choriocarcinoma [4,8]. Since it is a very rare cancer, treatment options are extrapolated from treatment of other germ cell tumors and gestational choriocarcinoma [9]. Described treatments includes surgery combined with multi-drug chemotherapy [3]. Compared to gestational choriocarcinoma, non-gestational choriocarcinoma tends to be less sensitive to chemotherapy with higher rates of recurrence [9]. Often multi-agent combination chemotherapy is required, particularly when distant metastases are present, Beta-hCG is >40,000 or in the case of gestational choriocarcinoma the interval since pregnancy is >4 months2. Examples of a chemotherapy regimen include adjuvant cisplatin, etoposide, and bleomycin or EMA/CO regimen consisting of etoposide, methotrexate, dactinomycin, cyclophosphamide, and vincristine can be used [3,4,6]. Beta-hCG is a good indicator of prognosis and treatment response [2,8].

In the case we describe, infectious etiology was at the primary focus of the differential and an extensive infectious workup was undergone. This patient was presented during the COVID-19 pandemic and her clinical picture of ARDS requiring ECMO caused her care team to initially suspect COVID-19 infection as the cause of her respiratory failure. However, she had several negative COVID tests, and her thorough infectious work up was completely negative. Although possible metastases were commented on in multiple imaging reports, the rapidly progressing clinical picture was initially not believed to be consistent with an undiagnosed cancer and malignancy workup was delayed. In addition, there were multiple gynecologic concerns documented in the patient's chart during the course of her illness that were not addressed. Although prognosis may not have changed, a gynecologic exam earlier in the patient's course, at the onset of vaginal pain and bleeding, may have led to an earlier diagnosis [10-14]. This case describes a rare and aggressive malignancy demonstrating an atypical presentation with rapid progression of metastases and clinical deterioration, creating a diagnostic dilemma for the medical team.

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