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Early onset of Ovarian Cancer in Bahamians and the need for Early Detection

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Abstract

Background: Bahamians have a high incidence of BRCA mutations, leading to a higher incidence of ovarian cancer at an earlier age than that seen in the general population. Effective screening tools are not currently available for patients with ovarian cancer and for many Bahamians, limited access to health care and poor medical education combine to further make the diagnosis and treatment a medical quandary. Patients who do develop ovarian cancer are often diagnosed in later stages of the disease, when the chance for remission is minimal and treatment is futile. There have been multiple studies focused on the importance of early screening in decreasing the mortality of BRCA associated breast cancer; however, few studies have focused on the application of this principle to ovarian cancer.

Case Summary: A 21 years Bahamian female was admitted to our facility with ascites, suprapubic pain, nausea, vomiting, diarrhea, and a twenty-pound weight loss over the course of two weeks. Upon admission, gynecological ultrasound was ordered and revealed a complex adnexal mass. The patient then underwent consecutive paracentesis procedures while awaiting further workup and evaluation. Serial imaging and lab tests during her 8 day hospital course revealed stage 4 ovarian serous cystadenocarcinoma with marked carcinomatosis, which severely limited her treatment options.

Conclusion: Research shows that women in their 6th or 7th decades of life are predisposed to developing ovarian cancer.Studies have been geared towards signs and symptoms affecting this patient population when presenting with ovarian cancer, leading medical practitioners to dismiss the likelihood of ovarian cancer in younger patients with similar symptoms. This can further delay diagnosis until later stages of the disease process and result in marked carcinomatosis on pathology. This underscores the need to exploit alternative methods, such as genetic testing combined with routine imaging and lab tests, especially in populations with increased propensity. This would provide a means of halting the disease process in its early stages through optimization of available treatment options.

Keywords

ovarian serous cystadenocarcinoma; carcinomatosis; BRCA; paracentesis; genetic testing

Introduction

Serous ovarian cystadenocarcinoma accounts for ~25% of serous tumors[ref] and represents the largest proportion of malignant ovarian tumors [1], accounting for over 50-80% of all malignant epithelial ovarian tumors [2]. The prevalence peaks around the 6th to 7th decades of life [3]. Ovarian

cancer is often considered insidious because it does not present with overt symptoms such assignificant bleeding, excruciating pain, or an obvious lump. Instead, the symptoms tend to go undetected and their progression is often indolent. Initially these nonspecific changes are often attributed to menopause, aging, dietary indiscretions, stress, depression, or functional bowel problems and patients undergo treatments for these presumed ailments without a pelvic examination [4].

Case Presentation

We present the case of a 21 years Bahamian female who was referred to our gynecological oncology team after presenting to the ED with a 2 week history of worsening abdominal distention, achy suprapubic pain, nausea, vomiting, diarrhea and 20 pound unintended weight loss. Upon her initial presentation, a gynecologic ultrasound was performed in the ED and revealed an adnexal mass. This led to the patient being referred to our team for further workup and evaluation.

During our initial history the patient disclosed that she had been seen at an outside hospital two weeks prior after presenting with similar symptoms. After the patient was admitted a paracentesis was performed and 2.7 L of ascetic fluid was removed and sent for analysis. Over the course of the two weeks the patient's medical state showed little improvement. This eventually prompted a referral to our hospital for further evaluation and specialization [5].

Upon her admission to our gynecological oncology team, we did not yet have all of her previous paperwork from the outside hospital. However, she complained her abdominal symptoms were getting worse. Upon physical examination we found that her abdomen was taut and extremely tender to palpation with a re-accumulation of ascitic fluid. Labs and imaging were ordered as part of initial workup and evaluation [6]. Her presenting symptoms, combined with her age and initial imaging results, led us to consider possible ovarian germ cell tumor. Based on this diagnosis, our tentative plan was to discuss chemotherapy treatment options since tumors of this nature are chemo-responsive. During this process, her initial labs came back with elevated LDH. This confirmed our initial clinical suspicion of germ cell ovarian cancer, in this case dysgerminoma.

Around this time period, the patient's complete medical record from the outside hospital arrived. It showed that the cytology from her paracentesis was highly suspicious for adenocarcinoma. This led us to revise our treatment plan and contemplate performing another paracentesis for verification purposes while we were waiting for the complete set of tumor markers to return. However, her symptoms continued to worsen with further re-accumulation of ascitic fluid, leading us to have 4 L of ascetic fluid aspirated and analyzed.

The set of tumor markers then came back with elevated Ca-125 [7] and estradiol, which further indicated ovarian adenocarcinoma. She was then discussed at our tumor board where we decided she should start neoadjuvant chemotherapy of carboplatin and paclitaxel (Carbo/Taxol) with the possibility of future debulking surgery. On hospital day 8 her initial symptoms had stabilized. She was then cleared for discharge and we scheduled her first chemo session.

Outcome and follow up

She tolerated her initial round of chemotherapy with usual side effects of nausea and vomiting. Prior to her second cycle she presented to the ED with worsening respiratory symptoms and a

thoracentesis was performed. However, she had recurrence of her symptoms and eventually underwent a talc pleurodesis approximately one month after her initial presentation to our team. She was then given two weeks to recover following this procedure and was scheduled to resume chemotherapy after that time period.

Conclusion

Ovarian cancer has the highest mortality of all the female gynecologic malignancies. The usual patient is in her 6th or 7th decade of life; however, there is a subgroup of patients who are young adults and/or are of Bahamian descent. The non-specific signs and symptoms employed to diagnose ovarian cancer in the typical patient may not be applicable to the aforementioned patients. Unfortunately, this leads to delayed diagnosis and increased cases of morbidity and mortality. For this reason, it is imperative that we, as medical practitioners, are aware of these subgroups and begin to employ alternative screening tools to identify these patients at earlier disease stages. Current screening tools being employed include genetic testing combined with routine imaging and lab tests. Additionally, primary prevention techniques can include patient education. By educating women of Bahamian descent about BRCA 1/2 and its implication in ovarian cancer, they may become more vigilant about seeking medical treatment on presentation of these symptoms. If effective, these screening tools can be a standard of care for ovarian cancer diagnosis and can be appropriately utilized.

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