

## Case report

### **Bilateral ovarian serous cystadenocarcinoma in a teenager: a case report**



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#### **Abstract**

Epithelial ovarian cancers are uncommon among young girls and teenagers compared to germ cell tumors. We report a case of bilateral ovarian serous cystadenocarcinoma in a teenage girl with the attendant challenges of diagnosis, management and follow up. HT, 19 year old had presented at a secondary care level with features suggestive of benign ovarian tumor and had ovariectomy done. However, histology report revealed a malignant epithelial cancer, necessitating a repeat exploration. She was found to have surgical stage 3c disease and subsequently has total abdominal hysterectomy with bilateral salpingectomies, right oophorectomy and omentectomy. She was further managed with paclitaxel-carboplatin combination chemotherapy but defaulted after the 3<sup>rd</sup> cycle on account of financial constraints. She succumbed to the disease 11 months post diagnosis. Though uncommon, detailed evaluation of teenage patients for malignant ovarian cancer is expedient. The financial burden of cancer care in our environment is also highlighted.

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## Introduction

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Ovarian carcinoma is among the leading causes of cancer fatalities in women accounting for 151,900 deaths in 2012 [1]. In adults, about 60% of all ovarian tumours are epithelial, arising from the ovarian surface epithelium or small epithelial inclusion cysts unlike germ cell tumours which are more common among children and adolescents [2]. Serous and mucinous tumours are the most common epithelial tumors occurring in the sixth and seventh decades [2]. Most common presenting symptoms of surface epithelial ovarian malignancies are abdominal pain, abdominal distention due to ascites or bulky abdominopelvic masses [2,3]. Most ovarian cancers in children and adolescents are in early stage at diagnosis and conservative management with preservation of fertility is often possible [2,3]. Unfortunately, few cases of serous epithelial ovarian cancers have been reported in females under age 20 years with most of them presenting with advanced disease [4, 5]. We present an unusual case of an advanced stage papillary serous cystadenocarcinoma in a 19-year-old Nigerian girl.

## Patient and observation

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Miss HT, a 19 years of age presented at the source of referral, in February 2015, with one week history of sudden onset progressive abdominal swelling associated with pain, nausea, vomiting and loss of appetite. She attained menarche at age 13 years and has regular menstrual cycles though with associated dysmenorrhea. She was sexually active with one episode of uncomplicated voluntary surgical pregnancy termination. Her mother was said to have died of an unknown ailment 14 years earlier. Abdomen was grossly distended and intra-abdominal organs were difficult to palpate. Clinical and radiological investigations were said to have suggested a benign ovarian cyst for which she had a laparotomy. However, intra-operative findings at this first surgery included haemorrhagic ascites and 14cm X 12cm X 6cm left cystic ovarian mass. She had left oophorectomy but the histology was reported as papillary serous cystadenocarcinoma of the ovary, necessitating a referral to the University College Hospital (UCH), Ibadan, Nigeria for expert review, chemotherapy and follow up. Serum CA 125 assay result, retrieved postoperatively, was 375.4 u/ml. Unfortunately, she did not report to our unit in UCH until about 2 months after the referral having developed a recurrence of abdominal swelling with associated pain-reason for non-presentation being financial constraints. Repeat

abdominopelvic ultrasonography revealed a huge heterogeneous mixed solid-cystic mass with septations in the right adnexium. Computed tomography (CT) or magnetic resonance imaging (MRI) of the abdomen and pelvis could not be done due to financial constraints. She and her father were duly counseled on the implications of her diagnosis, the process of care including extent of surgery, need for chemotherapy with possible side effects as well as implications for her future reproductive career. She consented to care and subsequently had total abdominal hysterectomy with bilateral salpingectomies, right oophorectomy and infracolic omentectomy. She had surgical stage 3c disease and diagnosis was confirmed on histopathological examination of the specimen (Figure 1). She was commenced on carboplatin-paclitaxel combination chemotherapy with sustained clinical response until she abandoned further medications after the third course on account of increasing financial burdens. Although she was unable to have additional courses of chemotherapy, followed up care continued until 11 months post-diagnosis when she succumbed to the disease.

## Discussion

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Papillary serous cystadenocarcinoma of the ovary is the most common ovarian carcinoma comprising nearly 50% of all malignant tumours of ovary and is also well known for its bi-laterality [6]. It is rare among adolescents and children unlike germ cell tumours. There have been few global reports but none has been from our environment to the best of our knowledge. In a 3.5 year prospective study of ovarian cancers at our centre, the only teenager among the 21 patients studied had non-epithelial disease [7]. Our case is noteworthy as the patient is a 19-year old young teenager in whom a benign disease was expected. Most patients with ovarian cancer present with clinical features such as abdominal swelling and pain, ascites, loss of appetite, early satiety, easy fatiguability, menstrual abnormalities such as dysmenorrhea even though, occasionally, they may be asymptomatic [6, 8]. The common sites of metastasis include the contra-lateral ovary, peritoneal cavity, pelvic and para-aortic lymph nodes and liver. With intra-abdominal spread there is often ascites and involvement of omentum [8]. Malignant serous tumours are further subdivided into borderline, low grade and high grade. The low grade serous tumours have been documented to be associated with their precursor borderline tumours and harbour BRAF/K-ras mutations while genetic abnormalities of high grade tumors include p53 mutation, p16 expression and loss of BRCA1

expression [9]. In resource-limited environment as ours, serum CA 125 levels and ultrasonography are useful tools for screening, preoperative diagnosis and monitoring of therapy [6, 8]. This patient had markedly elevated serum CA 125 levels at the time of presentation in UCH which would have positively contributed to her care if the report had been available before the initial surgery. In consideration of her age, a frozen section at the initial surgery may have also been an alternative to consider if facilities for such were available. Treatment modality for high grade papillary serous cystadenocarcinoma is cytoreductive surgery with adjuvant platinum-based chemotherapy as was done for Miss HT [10]. Unfortunately, financial burden of cancer care in this environment prevented her from benefitting maximally from this approach. The essence of this report is to show the need for all doctors to be exhaustive in evaluation of seemingly benign gynaecologic lesions and also to ensure thorough preoperative assessment of suspected cases irrespective of the patient's age. In addition, the impact of financial burden on prognosis of cancer care in our environment is highlighted.

## Conclusion

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We presented an uncommon case of advanced stage papillary serous ovarian cystadenocarcinoma in a teenage patient which is extremely rare and posed both diagnostic and therapeutic challenge. There is a need to make careful clinical, laboratory, radiological and pathological examination imperative in all gynaecologic patients irrespective of age.

## Competing interests

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The authors declare no competing interests

## Authors' contributions

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Timothy Abiola Oluwasola: performed the second surgery, followed up the patient and prepare the manuscript; Rukiyat Adeola Abdusalam, performed the first surgery, contributed to patient's follow up and writing of the manuscript; Clement Abu Okolo, reviewed the histology slides on the 2 surgeries and contributed to preparation of

manuscript; Ademola Odukogbe, contributed to patient's care in decision taking for second surgery, post-operative care including choice of chemotherapy and preparation of manuscript

## Figure

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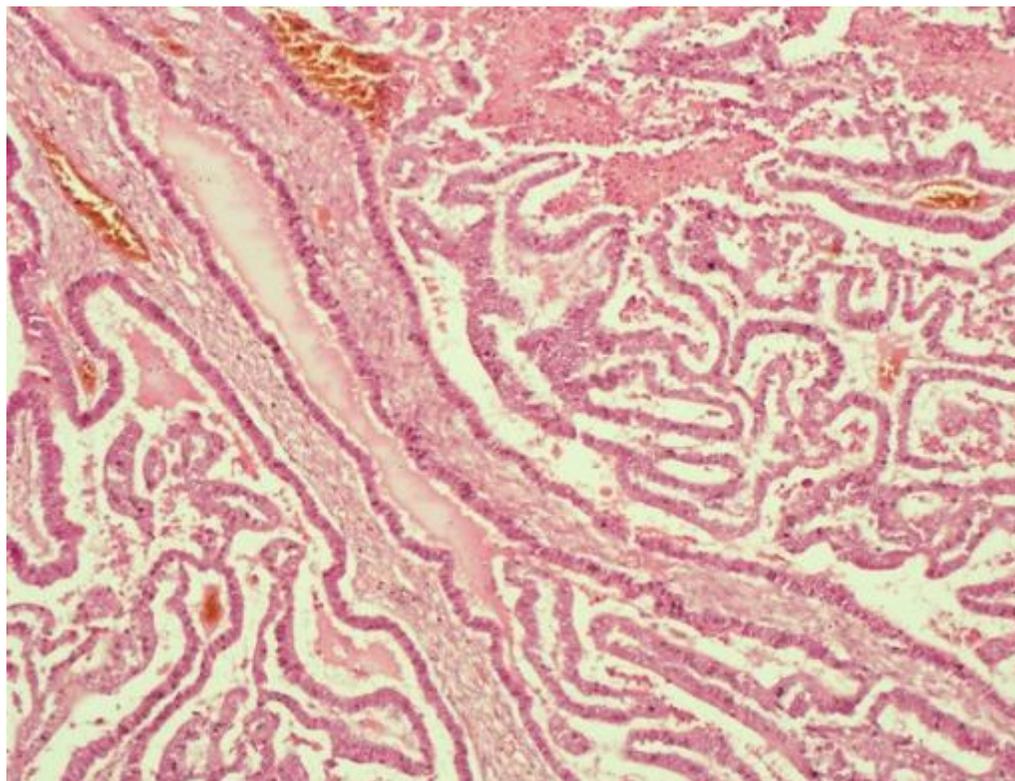
**Figure 1:** Photomicrographs of the specimen's histology report showing papillary serous cystadenocarcinoma of the ovary. There is stromal invasion by malignant glands disposed in papillary patterns lined by pleomorphic cells with large vesicular nuclei and moderate to abundant eosinophilic cytoplasm (H&E X400)

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**Figure 1:** Photomicrographs of the specimen's histology report showing papillary serous cystadenocarcinoma of the ovary. There is stromal invasion by malignant glands disposed in papillary patterns lined by pleomorphic cells with large vesicular nuclei and moderate to abundant eosinophilic cytoplasm (H&E X400)