TEENAGE GIRL WITH OVARIAN TUMOR : A CASE REPORT

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Abstract

Ovarian tumors are the 7th most common cause of cancers in women worldwide. Despite advancements in both treatment and diagnosis, the morbidity and mortality associated with ovarian tumors continue to rise. In Bangladesh, 3132 cases were reported in 2015 and more cases are expected to be reported as diagnostic techniques continue to improve. Among ovarian tumors, dysgerminomas are one of the most common malignant ovarian neoplasms diagnosed in women under the age of 20. The following case study of a 12-year-old with abdominal pain and concomitant chest pain is an atypical presentation of dysgerminoma. This patient was diagnosed initially as having an ovarian neoplasm on the basis of a physical examination which was eventually corroborated by an ultrasound scan. Laparoscopic removal was eventually done as the patient was young and had desired a more cosmetically viable management protocol. At laparoscopy, the left ovary was found to be pearly white and enlarged, measuring 3.5x5.5 cm. It was removed and sent for histopathologic examination, which revealed that the patient had dysgerminoma. The patient remains in close follow up.

Key words

Ovarian tumor; Dysgerminoma; Laparoscopy; Laparotomy.

Introduction

With a prevalence of 11.4 new cases diagnosed per 100,000 women worldwide, ovarian tumors are a common occurrence in the world today[1]. It is the 7th most common cause of cancer among women worldwide and it is increasing in frequency in many parts of the world. In Bangladesh alone, an estimated 3132 cases were reported in 2015[2,3]. As more and more women worldwide choose to postpone their pregnancies at a later age, the incidence is only set to increase further[4]. This along with rising obesity levels help to further explain this drastic increase.

The three major types of ovarian tumors are epithelial, sex cord, and germ cell[5]. Epithelial cell tumors are most common at 82% occurrence while germ cell tumors are rare, accounting for approximately 20% of all ovarian tumors. The most commonly occurring germ cell tumor is dysgerminoma. Despite the rarity of this disease, dysgerminomas present a crucial diagnosis in the clinic because they account for 2/3 of all malignant neoplasms diagnosed in women under the age of 20[5]. Dysgerminomas arise when germ cells that are typically encapsulated at birth within the primordial follicle inexplicably escape the encapsulation. Once they escape, they grow in an uncontrolled manner. All dysgerminomas are considered malignant, but only 1/3 behave in an aggressive way. Although the exact etiology behind it is unknown, recent studies implicate a loss of function in the tumor suppressor gene TRC8/RNF139[5].

Consequently, based on the above a diagnosis of dysgerminoma below the age of 20 is a pressing concern. The following is a case study of a 12-year-old patient that was managed at Southern Medical College Hospital who was ultimately diagnosed with having dysgerminoma.

Case Report

A 12-year-old female child presented to our hospital with pain in the lower abdomen that had lasted for 3 months prior to admission. This had started rather quite suddenly. It was dull in nature and more concentrated towards the left lower quadrant. It was not precipitated by any intake of food or drink, and there was no prior history of trauma to the region. There was no associated vomiting, and there was no radiation of pain to another site. The pain would not get relieved by any means nor were there any factors that would aggravate the pain. As menarche did not yet begin in this patient, the patient did not experience any menstrual irregularities, and she did not experience any weight loss throughout her ordeal. Simultaneous with the pain in the lower abdomen, she reported

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that she began to suffer from a diffuse pain all over her chest. With the above complaints, the patient got admitted to the Gynecology and Obstetrics Department of Southern Medical College Hospital on 13/10/2019 for further evaluation.There was no previous history of hospital admission, and there was no history of DM, HTN or TB in this patient. Furthermore, there was no history of malignancy in the family.

On examination, the patient was not anemic. The pulse was 78b/min, blood pressure 110/70, respiratory rate 12 breaths per minute, and the temperature was 97.6^{o}F. The abdomen was soft with slight tenderness present at the left iliac fossa. There was no palpable mass anywhere. Per rectal examination revealed an average sized mass (Approx. 4x5 cm) high up in the pelvis. The weight was 28 kg and the height was at 3ft 5 in, giving her a BMI of 14.29. The rest of her examinations were normal.

Prior to admission, the patient had been examined by a gynecologist who had ordered a routine blood work along with the assays of βHCG, CA-125, CA 19-9 and Carcino Embryonic Antigen (CEA).

Her lab investigations were largely normal. The routine blood work did not reveal any abnormality and the respective assays for βHCG, CA-125, CA 19-9 and CEA were normal. Despite the chest pain, the X-ray was also normal. On trans-abdominal ultrasonography of the lower abdomen, a homogenous soft tissue mass, measuring 4.3x3.8x3.0 cm was present in the left iliac region. This was found to be pushing the Pouch of Douglas anteriorly. There was no abdominal lymphadenopathy detected.

Table I : Lab investigations.

S.L. No	Name of Investigation	Patient's Value	Normal Value
01	Hb%	11.8 g/dl	11.5-12.5 g/dl
02	RBS	5.4 mmol/L	3.9-6.1 mmol/L
03	S. TSH	0.67 mIU/L	0.35-4.0 mIU/L
04	HBsAg	Negative	
05	VDRL	Non-reactive	
06	Urine R/M/E	Normal Investigation	
07	X-ray	Normal skiagram	
08	ECG	Normal ECG	
09	USG	Large Left Ovarian Mass (5x5.8x3.8 cm) is found	
10	CA 125	11.6 U/ml	<35 U/ml
11	CEA	0.837 ng/ml	Up to 5 ng/ml
12	CA 19-9	11.3 U/ml	<35 U/ml
13	B-HCG	Normal results	

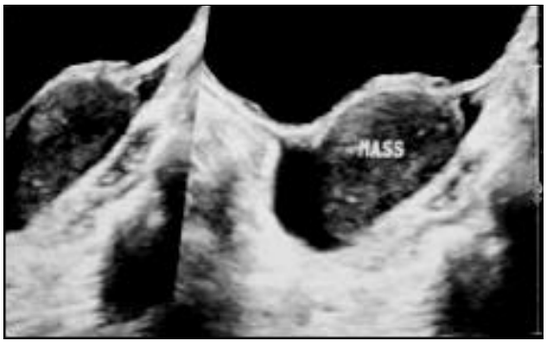

Fig 1 : USG finding of left ovary.

The major differentials we considered in this patient were: pelvic abscess, torsion of ovarian pedicle, ovarian tumor and benign ovarian cyst. The pelvic abscess was ruled out on account of a lack of fever and the chronicity of the current disease process. Torsion of the ovary would present with much more pain than the patient had while ovarian cyst usually remains asymptomatic and painless. With all the above investigation reports and clinical examination, ovarian tumor was our provisional diagnosis.

After due assessment and discussion of all management options with the hospital team as well as the patient, it was decided to perform a laparoscopic oophorectomy on this patient. As the patient was young, laparotomy was not considered due to potential complications that maybe incurred during the operation. Four ports were opened after gaining initial access through the Plummer's point. The uterus, ovaries and fallopian tubes were visualized, the uterus was found to be rudimentary while the left ovary was enlarged. The right ovary was found to be healthy. The left ovary was dissected and removed, it was sent for histopathologic examination as well. The mass removed measured 3.5x2.5 cm and was homogenous on cut section.After initial complaints of pain, patient responded well to the treatment regimen and went home accordingly the next day. She was asked to come for follow up on the 26th of October for a routine assessment.

The histopathology report which had come a week later on the 21st October revealed that the patient had a dysgerminoma of her left ovary. The tumor was described as having cells with centrally rounded nuclei with clear cytoplasm and distinct cell membrane arranged in lobules, small clusters, separated by delicate septa infiltrated by lymphocytes. Large areas of the tumor were infiltrated by lymphocytes, histocytes along with plasma cells and aggregates of epithelioid cells.

Discussion

Dysgerminomas account for over 30% of all malignant ovarian neoplasms of women worldwide[6]. They tend to occur in the pediatric population. When present in this age, the prognosis tends to be poor. On average, however 75% of all dysgerminomas are commonly found in women in the third and fourth decade of life with the mean age of diagnosis at 22 years[7,8].

Currently there are many hypotheses present, but none sufficiently explain the etiology behind the disease. The main complications of dysgerminoma occur primarily during pregnancy as increased risk for torsion and rupture may increase the incidence of spontaneous abortion or preterm delivery.

The five year survival rate is 96% if the tumor is confined to the ovary and 63% if extension occurs beyond the ovaries. Any peritoneal involvement carries a poor prognosis[9].

Management of dysgerminoma depends on its staging. Most dysgerminomas (75-80%) are present at stage Ia on diagnosis and can be managed by surgical resection alone with a unilateral salpingo-oophorectomy[8]. This is the usual course of action when fertility is to be kept intact. Adjuvant chemotherapy is reserved for cases beginning from stage Ib-IV. Although most patients at stage Ia need no further treatment after surgery, there is a 10-15% chance for recurrence. Consequently, under current ACOG guidelines, those suffering from recurrence or who are at stage Ib-IV should have 3 cycles of Bleomycin, Etoposide and Platinum (BEP regimen)[10].

As the mass appeared healthy on cut section after the operation, further assessment or management by chemotherapy was deemed unnecessary. The patient remains in regular follow up and is currently healthy.

Conclusion

This helps us understand that laparoscopic oophorectomy remains a viable means to manage such cases in the pediatric population. The level of postoperative complications is few and patients can go home early.

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Contribution of authors

Equal.

Disclosure

Both the authors declared no competing interests.

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