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CASE REPORT

Abdominal Mass in the Puerperium: Challenges in Diagnosis

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ABSTRACT

Ovarian cancer is the fourth most common cancer among women in Peninsular Malaysia. Epithelial ovarian cancer accounts for 90% of all ovarian tumours. Herein, we present a rapidly growing ovarian tumour in a young female patient, following an uneventful vaginal delivery at home. We discuss on the challenges of making said diagnosis in a post-partum patient who presented with abdomen distension. A 19-year-old lady presented to the Emergency Department three days after spontaneous vaginal delivery at home. Her chief complaint was that of a rapidly progressive abdominal distension. Diagnostic and therapeutic emergency laparotomy were done, revealing a huge cystic ovarian mass. Histopathology reported a high grade, serous ovarian carcinoma. There are multiple causes for abdominal distension in post-partum women, however priority should be given into looking for gynaecological origin, given the changes in hormone. Sudden abdominal distension during post-partum period is rare and a systemic approach in its management is vital. There is, inarguably, a role of diagnostic and therapeutic laparotomy in this.

INTRODUCTION

According to the National Cancer Registry, ovarian cancer is the fourth most common cancer among women in Peninsular Malaysia, making up five per cent of all female cancer cases and the most malignant gynaecological malignancy[1]. Ovarian epithelial cancer is the most common form of ovarian cancer[2]. Epithelial ovarian cancer, accounts for 90% of

all ovarian tumour, is grouped into four major histological types; serous (70%), endometrioid (10 – 15%), clear cell (10%) and mucinous (3%)[1]. Herein, the authors present rapidly growing ovarian tumour in a young female patient following uneventful vaginal delivery at home. The authors discuss on the challenges of diagnosis of a patient presented with abdomen distension in post-partum period.

CASE PRESENTATION

A 19-year-old lady, para 1, non-Malaysian, presented to Emergency Department three days after spontaneous vaginal delivery at home with chief complaint of rapidly progressive abdominal distension. She delivered to a healthy baby at home, assisted by an untrained midwife. She did not have any proper antepartum follow-up during the pregnancy due to financial constraint. She denied any abdominal swelling prior to pregnancy and her abdomen enlarged appropriately during the 9 months period of pregnancy. Post-delivery, she developed abdomen distension, which increased in size within 3 days. Abdomen distension was massive till she started to have a pain and difficulty in breathing. She had bouts of vomiting with reduced oral intake after that. She has no similar symptoms prior to or during pregnancy. However, she still had a normal bowel opening and denied any urinary abnormality. She had a normal lochia and did not have any fever or constitutional symptoms. There was no family history of malignancy.

On examination, she was alert, pale, not jaundice and a febrile. She was tachypnoeia, as a result of diaphragm splinting. Otherwise, her vital signs were stable. Lungs were clear and heart sound was normal. Her abdomen was grossly distended, even larger than a term pregnant lady. Per abdomen examination revealed abdomen was distended, tensed, dull on percussion and presence of fluid thrills. The bowel sound was still present. Per rectal and per vaginal examination were normal. Abdomen radiograph shows generalised opacity, unable to visualize any intra-abdominal organ (Figure 1). Bedside ultrasound abdomen done showed large amount of ascites, obscuring the view of any organs or mass in abdomen

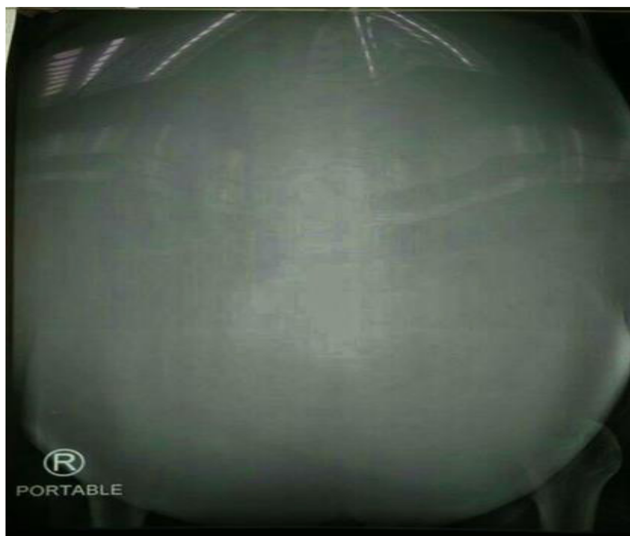


Figure 1 Abdominal radiograph showing generalised opacity, obscuring the pelvic bone

She was subsequent reviewed by the gynaecologist team and a provisional diagnosis of ovarian cyst was made based on acute onset history with likelihood of being ovarian origin cyst. She then underwent emergency laparotomy, revealing a huge cystic ovarian mass (Figure 2). Unfortunately, the mass was accidentally punctured intra-operatively during manipulation, draining 11 litres of haemoserous fluid (Figure 3). She remained stable intra-operatively. The histopathology result came back as high grade serous with lymphovascular involvement and disrupted capsule. The malignant cells had also microscopically extended to fallopian tube and omentum (Figure 4). The patient requires staging and subsequent chemotherapy. The patient was discharged in a well condition a week after that. Patient could not afford for tumour marker test. Unfortunately, the patient failed to turn up for her follow-up in clinic as she was unable to pay for the bill.

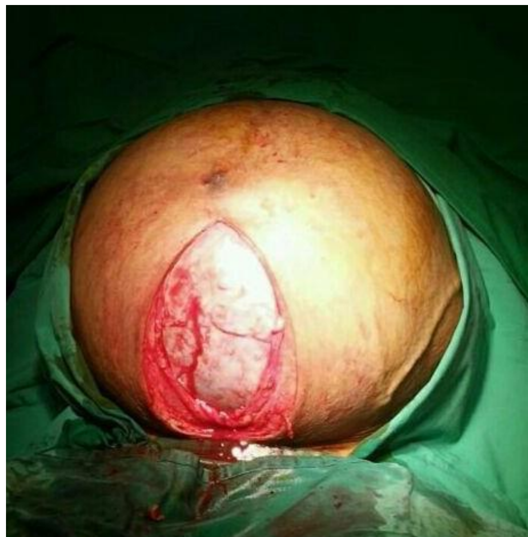


Figure 2 Taken intra operatively, showing the grossly distended abdomen

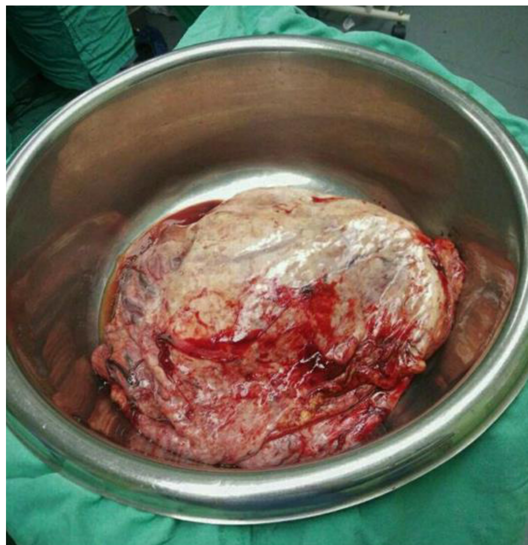
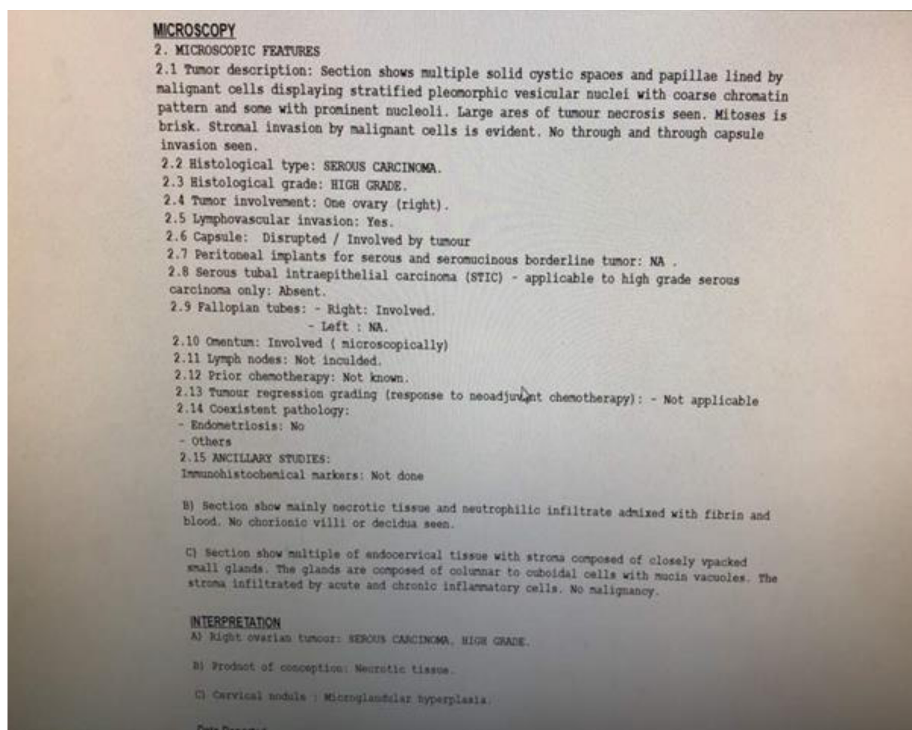


Figure 3 Showing the ruptured cyst, drained 11 litres of serous fluid



MICROSCOPY
2. MICROSCOPIC FEATURES
2.1 Tumor description: Section shows multiple solid cystic spaces and papillae lined by malignant cells displaying stratified pleomorphic vesicular nuclei with coarse chromatin pattern and some with prominent nucleoli. Large ares of tumour necrosis seen. Mitoses is brisk. Stromal invasion by malignant cells is evident. No through and through capsule invasion seen.
2.2 Histological type: SEROUS CARCINOMA.
2.3 Histological grade: HIGH GRADE.
2.4 Tumor involvement: One ovary (right).
2.5 Lymphovascular invasion: Yes.
2.6 Capsule: Disrupted / Involved by tumour
2.7 Peritoneal implants for serous and seromucinous borderline tumor: NA .
2.8 Serous tubal intraepithelial carcinoma (STIC) - applicable to high grade serous carcinoma only: Absent.
2.9 Fallopian tubes: - Right: Involved.
- Left : NA.
2.10 Omentum: Involved (microscopically)
2.11 Lymph nodes: Not inculded.
2.12 Prior chemotherapy: Not known.
2.13 Tumour regression grading (response to neoadjuvant chemotherapy): - Not applicable
2.14 Coexistent pathology:
- Endometriosis: No
- Others
2.15 ANCILLARY STUDIES:
Immunohistochemical markers: Not done

B) Section show mainly necrotic tissue and neutrophilic infiltrate admixed with fibrin and blood. No chorionic villi or decidua seen.

C) Section show multiple of endocervical tissue with stroma composed of closely vpacked small glands. The glands are composed of columnar to cuboidal cells with mucin vacuoles. The stroma infiltrated by acute and chronic inflammatory cells. No maliqnancy.

INTERPRETATION
A) Right ovarian tumour: SEROUS CARCINOMA, HIGH GRADE.

B) Product of conception: Neurotic tissue.

C) Cervical nodule : Microglandular hyperplasia.

Date Reported

Figure 4 Histological report

DISCUSSION

Postpartum period is loosely defined as the period immediately following childbirth. The term puerperium extends further and refers to the first 6 weeks after delivery, during which the reproductive organs are returning to their normal condition following labour and delivery.

A dramatic decrease in the concentrations of many hormones occurs in women after labour. Two main steroid hormones that have been maintaining pregnancy are oestrogens and progesterone. Since these hormones are predominantly produced by the placenta, progesterone and estradiol decrease rapidly to pre-pregnant concentrations within 72 hours after delivery, as these hormones are predominantly produced by the feto-placental unit and is no longer producing them.

This patient was in day three post-partum and urine pregnancy test was negative. She did not have any per vaginal bleeding and bedside ultrasound could not localize any foetus either. A differential diagnosis would be an ovarian cyst, in view of grossly distended abdomen. There are reported case of large ovarian cyst misdiagnosed as ascites[2]. The best diagnosis that fit into the patient was ovarian cyst as it fits most of the history. An ovarian cyst is a sac filled with liquid or semi-liquid material that arises in an ovary. Most of ovarian cyst patients are asymptomatic. As ovarian cyst being asymptomatic, it is therefore commonly found during ultrasound.

Another differential diagnosis that need to be considered is HELLP syndrome with complicated with ascites. El-Agwany et al. (2015) reported that a patient with normotensive HELLP syndrome developed ascites post-partum. The patient was managed conservatively and abdominal swelling resolved. Massive ascites is defined as accumulation of more than 2 litres of fluid in the peritoneum. If untreated, it can lead to respiratory compromise. This patient came with diffuse abdominal distension which suggestive of gross ascites. Fortunately, her blood pressure was normal, and all her blood parameters did not point towards HELLP syndrome[3].

Among many other gynaecological malignancy, ovarian tumour is the number one killer. However, ovarian cancer is only three per cent of all cancer in women[4]. However, the history of abdominal distension was too brief to support towards this diagnosis. Another possible diagnosis of the abdominal distension could be intestinal obstruction. However, patient was still able to pass flatus and she had no vomiting. Besides that, her abdominal radiography does not show any dilated bowel.

Bladder ascites should also be considered as part of the differential diagnosis of abdominal distension in a puerperium patient. Pandit V et al. (2016) reported an interesting case of a post-partum lady presented with ascites and oliguria. She was initially treated for urinary tract infection twice before suffering from ruptured urinary bladder with leakage of urine into the peritoneum[5]. It is commonly associated with uterine rupture and increase risk with delivery conducted by untrained personnel. CT cystogram is the best diagnostic modality to confirm the diagnosis, which is unavailable in our centre.

Ovarian torsion is the fifth most common gynaecological emergency with a reported prevalence of 2.5 – 7.4% in patients undergoing emergency surgery for acute pelvic pain[6]. The diagnosis of ovarian torsion during puerperium is often missed due to non-specific symptoms and uncommon objective finding[7]. Ovarian mass, be it malignant or benign must be considered as part of the differential diagnosis for women of any age, especially during post-partum period[8]. Presentation of ovarian torsion and other puerperium-related disorder is quite similar.

Abdominal distension after delivery can be due to pneumo-peritoneum too. There is another reported case of a patient, day 6 post-partum, presented with abdominal swelling and severe pain. She was subsequently diagnosed as pneumoperitoneum evident by air under diaphragm. It is a well described fact that in women, air may travel up through the genital tract and enter the peritoneal cavity, resulting in pneumoperitoneum[9].

There is a case reported about a puerperal patient presented with abdomen pain and was treated as renal colic initially. Patient was not responding to initial treatment; therefore ultrasound was ordered, which revealed ovarian mass. Diagnosis was altered to ovarian torsion[8].

Imaging is frequently used in the diagnosis of an acute abdomen. Ultrasound has become the routine bedside examination to rule out potential pelvic pathologies. Emergency physicians are suggested to master gynaecological-based ultrasound, as gynaecology emergencies are picked up by bedside ultrasound. Ovarian torsion during pregnancy and puerperium is a challenging diagnosis for emergency physicians due to largely the non-specific signs and symptoms involved[7]. A scan performed by senior gynaecologist or radiologist would make a huge difference. However, there are cases reported where ovarian malignant tumour could not be identified during routine antenatal ultrasound at 10, 12, 15 and 20 weeks of gestation[10]. The study did not specify who did the ultrasound. Our Malaysian policy for maternal and child health has stated that antenatal scan to be performed at time of booking, 16 and 32 weeks. Our patient did not go for any antenatal check-up; therefore, no scan was done for her earlier. There was limitation in doing ultrasound for her on presentation in Emergency Department as only fluid could be seen and not the other intra-abdominal or pelvic organs.

At the time of discharge, patient was informed about the intra-operative findings and that the mass is likely to be malignant. She was given an appointment. According to the histopathology reports, the patient required staging and subsequent chemotherapy. This is not surprising as most cases of high-

grade serous ovarian cancer are diagnosed at advance stages, when the tumour has already metastases[1]. The final result could not be explained to patient as she had lost from follow-up and was not contactable. As an unregistered patient and from poor social economy background, patient was unlikely to be affordable for expensive treatment. This can lead to further deterioration of her clinical condition.

CONCLUSION

A patient presenting with abdomen distension can lead to variety of possible diagnosis especially when presented with acute symptoms. A proper examination is always the best in ruling out differential diagnosis. Bedside ultrasound especially in the hand of an expert helps to diagnose patients in emergency setting.

CONFLICT OF INTEREST

The authors declare that they have no competing interests in publishing this case.

CONSENTS

Written informed consent was obtained from the patient to publish the case with its related pictures. A copy of the written consent is available for review by the Chief Editor.

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