



Case report

A diagnostic challenge of a giant Para-ovarian cyst in an adolescent girl in a low resource setting- a case report

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ABSTRACT

Introduction and importance: Presentation of a giant para-ovarian cysts is rarely reported in the literature, with varying symptoms, methods of treatment, and complications. Herein, we highlight the diagnostic challenges faced in a low resource setting in the diagnosis of a giant para-ovarian cyst in a 17-year-old girl.

Case presentation: A 17-year-old, virginal girl who presented with vague abdominal pain with an abdomino-pelvic mass of about 24 weeks pregnancy uterus size was diagnosed as a case of huge benign ovarian cyst with normal tumour markers. A computed tomography showed a large well defined clear cystic lesion (19x23 cm) in the abdomino-pelvic region, and normal tumour markers.

Clinical discussion: During exploratory laparotomy, the mass was found to be a giant para-ovarian cyst arising from right side, with normal bilateral tubes, ovaries and uterus. She underwent successful excision of the cyst with the laparotomy incision, with an uneventful postoperative recovery.

Conclusion: In a resource constraint setting, preoperative differentiation of a giant para-ovarian cyst from an ovarian cyst is a real challenge. Operating gynaecologists needs to be aware of the possibility of giant para-ovarian cysts in women with a huge abdomino-pelvic mass with normal tumour markers, and plan the treatment accordingly.

1. Introduction

Cysts arising from either ovary or fallopian tube are considered as an adnexal cysts (1). Cysts arising from the mesothelium in the large ligament between the ovary and the tube is para-ovarian cyst, and it accounts for about 10 % of all the adnexal masses (2). The mean size of para-ovarian cysts was 7.51 cm (3). Presentation of a giant para-ovarian cysts (>20 cm) is rarely reported in the literature, with differing presentation of symptoms, diagnosis and surgical managements (1,4–6).

The symptoms of para-ovarian cysts included incidental finding, abdominal pain, abdominal distension, bloating sensation, abdominal discomfort, etc. (1,3,4,6). In a retrospective study among 51 patients with intraoperative diagnosis of para-ovarian cysts, the complications noted were cyst enlargement (79.62 %), adnexal torsion (18.51 %), haemorrhage (7.4 %), rupture (1.85 %) and benign tumour (12.96 %). Ultrasound diagnosis was correct in 47.05 % (3). In 2D ultrasound evaluation of para-ovarian cyst, the hyperechoic line is always seen between the cyst and the ovarian capsule (7).

Herein, we report a case of a giant para-ovarian cyst in a 17-year-old adolescent girl, which was incidentally diagnosed during a laparotomy for a suspected huge benign ovarian cyst. We discuss challenges in diagnosis of such cysts in resource constraint setting, and the importance of preoperative imaging studies.

2. Methodology

The information in this case report was obtained by the retrospective review of patient's medical documents, and reported in line with the SCARE 2023 criteria (8). Written informed consent was obtained from the patient to publish her de-identified clinical details in this case report.

3. Case presentation

A 17-year-old, virginal girl presented to a local hospital in Bhutan with complaints of occasional abdomen pain mostly in right hypochondriac region. The pain was acute in onset, colicky in nature, non-

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radiating, not associated with any other symptoms and lasted for few minutes. She had similar pain about one year ago for which she did not seek medical help. She neither felt any abdominal lump nor did she notice abdominal distension.

She had menarche at the age of 14 years, with regular monthly menstrual cycle. She did not have dysmenorrhoea. There was no family history of ovarian, breast or colon cancer. She did not have a significant medical or surgical history.

The ultrasound scan at a district hospital detected a large (20.6 cm*6.6 cm) clear cystic lesion covering the entire abdomen. For this pain and abdominal cyst, she was referred to a regional referral hospital, and detected a huge cystic abdomino-pelvic mass corresponding to 24 weeks pregnant size uterus. A computed tomography scan (CT) revealed a large well defined clear cystic lesion (19 × 23 cm) (Fig. 1A-C). It was seen occupying the lower abdomen compressing the adjacent structures and right ovary with moderate endometrial collection. The left ovary was seen separately and the rest of the abdominal organs were visualised normal (Fig. 1). In Bhutan, regional referral hospital has general gynaecologist and obstetrician.

She was further referred to the national referral hospital of Bhutan for further evaluation and management by the gynaecological oncologist. In Bhutan, the lone gynaecological oncologist of the country is stationed in the national referral hospital. The tumour markers were within normal range: B-hCG: <0.100mIU/ml, AFP:0.9 IU/ml, CA125:17.96 U/ml, CA19-9:5.08 U/ml, LDH:350 U/L.

With the clinical diagnosis of a huge benign ovarian cyst, exploratory laparotomy with intra-operative frozen section biopsy (FSB) was decided by the gynaecological oncologist. Intra-operative FSB is available at the national referral hospital during the office hours from 0900 h to 1500 h. After obtaining a written informed consent, exploratory laparotomy with infra-umbilical vertical incision (Fig. 2) under general anaesthesia was performed. Intraoperatively, there was a giant right sided solitary para-ovarian cyst (30*20 cm) with intact capsule (Fig. 3) and free of adhesion. The uterus, bilateral fallopian tubes and ovaries were normal. There was no ascites. A 5 mm laparoscopic trocar was used to puncture the cyst wall, and drained about 1500 ml of clear straw colour fluid without spillage into the peritoneal cavity. Once the cyst wall was shrunken, complete excision of the cyst wall and excision of

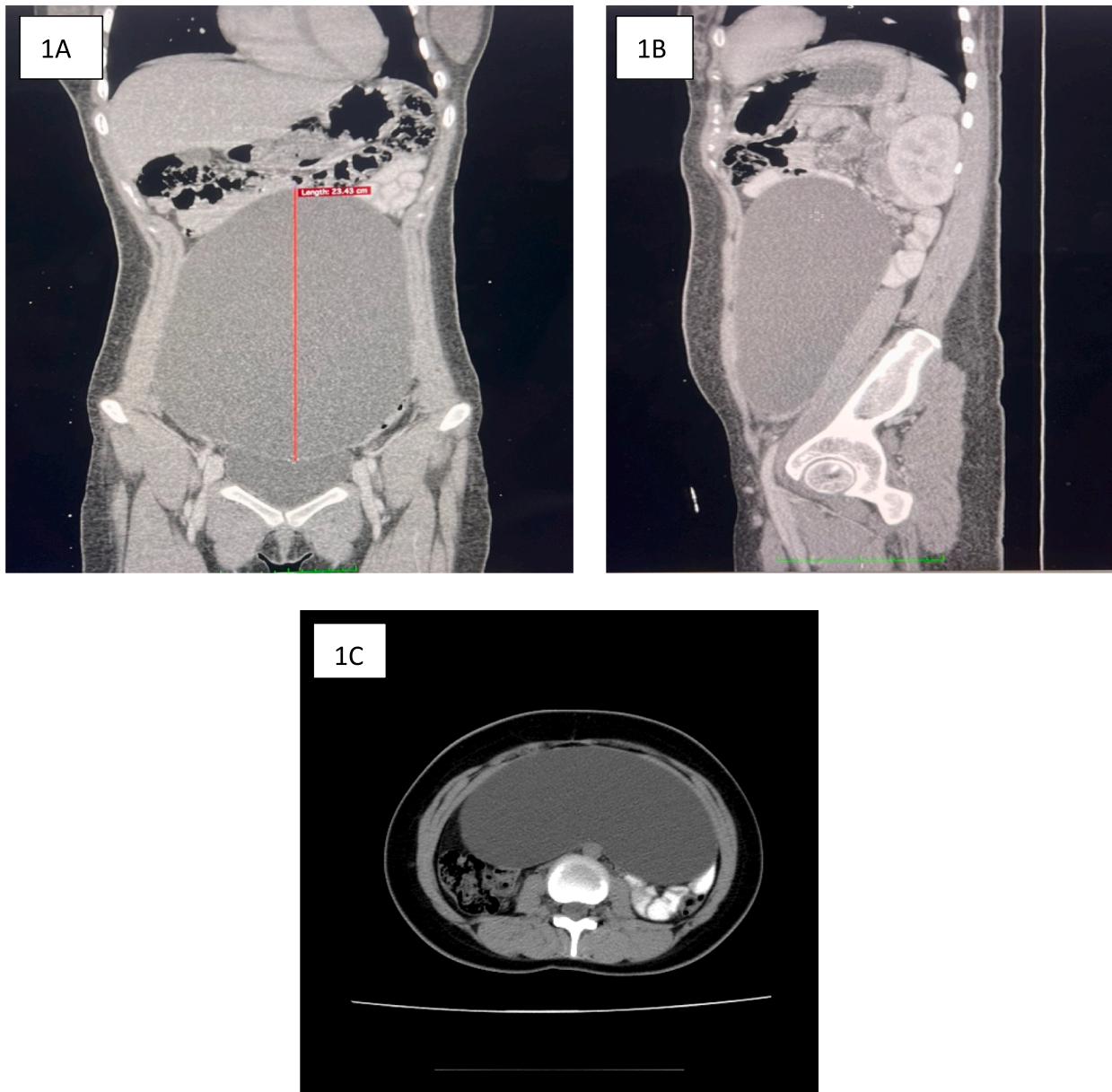


Fig. 1. A-C. CT images showing a large cystic well defined lesion (19x23cm) occupying the lower abdomen compressing the adjacent structures.



Fig. 2. Infra-umbilical vertical incision in a 17-year-old girl to excise a huge para-ovarian cyst.



Fig. 3. Para-ovarian cyst wall in a 17-year-old girl.

redundant peritoneum covering the cyst were done. The resected specimens were sent for histopathological examination. As the cyst was clinically looking benign, FSB was not performed during the operation. The uterus, tubes and ovaries were left in situ. Copious lavage of peritoneal and pelvic cavities with 2 liter of warm normal saline was done. The abdominal wall was then closed in the standard fashion. In the postoperative period, she had an uneventful recovery. She was discharged on postoperative day 3, and stitches were removed on

postoperative day 12. Histopathology examination showed the cyst was lined by ciliated tubal type epithelium (Fig. 4a-c). The wall was composed of fibro-collagenous tissue infiltrated with a few inflammatory cells. This confirmed the intra-operative diagnosis of a benign para-ovarian cyst.

On review four weeks after the surgery, the wound was healthy (Fig. 2) and the abdomen was soft. The patient was found to be attending her regular daily activities.

4. Discussion

In this case, we present a case of an incidental diagnosis of a giant para-ovarian cyst during laparotomy in a 17-year-old girl, who presented with pain abdomen. Accurate preoperative diagnosis is essential for counselling and planning treatment.

Cysts arising from the mesothelium in the large ligament between the ovary and the tube is para-ovarian cyst, and it accounts for about 10 % of all the adnexal masses (2). In a single centre cross-sectional study in Bhutan, 80.3 % of adnexal masses were ovarian origin and malignancy constituted 12.8 % (9). There is no prevalence/incidence record on para-ovarian cysts in Bhutan.

Para-ovarian cysts are the distended remnants of the paramesonephric duct or the mesothelial inclusion cysts which are mostly non neoplastic, the commonest being the hydatid of Morgagni (1). In adolescent, it is very common and resolves on its own. Pre operative diagnosis is made in <50 % of the cases. 5–20 % of the adnexal masses are estimated to be para-ovarian cyst (6). Yet it is often misdiagnosed as ovarian cyst due to its vague clinical symptoms (2). The clinical presentations of a para-ovarian cyst such as pain abdomen, abdominal distension can misguide to other differential diagnosis but it's important to rule out the possibility of this lesion to prevent further complication. Complications include torsion, infection, haemorrhage, rupture or change into malignancy associated with its pressure symptoms like constipation, hydronephrosis, and painful frequent micturition if the para ovarian cyst are growing large in size and compressing the bladder. Ultrasound helps in confirming the clinical diagnosis of a para ovarian cyst (4). The ultrasound features of para- ovarian cyst include thin walled with smooth margin usually unilocular simple cyst and moves independently when a probe pressure is applied (split sign). They are diagnosed either incidentally during imaging or during abdominal surgeries (7). International Ovarian Tumour Analysis (IOTA) simple ultrasound rules are reproducible, easy to train and use. It is highly sensitive and specific in predicting ovarian malignancy preoperatively (10). In the resource constraint setting, availability of imaging facilities such as ultrasound, CT and MRI (magnetic resonance imaging) are limited. Even if these services are available, expert radiologist who could provide a quality interpretation of image is not available often. In our case, there is a huge discrepancy in the cysts size detected in the ultrasound, CT and intraoperative findings. Ultrasound scan in our setting is performed by technicians, whereas CT images are interpreted by radiologists. There is no inter-disciplinary clinical meetings to discuss such discrepancies issues and come up with quality improvement plans.

The para ovarian cyst or the para tubal cyst or the hydatid cyst of Morgagni seen in teenager are often large size. The malignancy incidence in para-ovarian cyst is low. FSB should be checked intra-operatively to confirm the malignancy status of the cyst especially if papillary projections are noted inside (8,9). In a 30 year-old woman with a thin walled unilocular cyst without papillary projections or nodules and normal CA125 level, final histopathology confirmed frozen section diagnosis of para-ovarian cyst (1). In our case, frozen section was planned before the surgery. However, with benign appearance of para-ovarian cyst intraoperatively, the surgeon decided to abandon FSB. FSB service is available from 09 to 15 h with prior information to the pathologist about 24 h. In case of need of FSB is felt on the operation table, this service is not available.

The para ovarian cyst is usually asymptomatic and often missed due

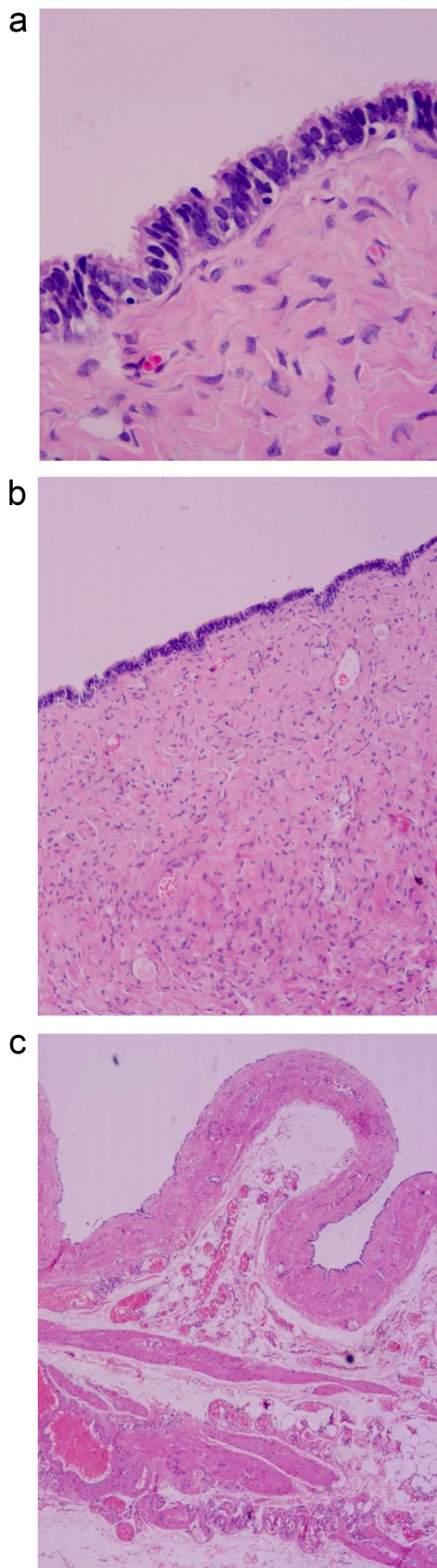


Fig. 4a. H&E Showing cyst wall lined by ciliated tubal type epithelium, X 400.
b: Cyst wall lined by tubal type epithelium, x40.
c: Section shows distended fallopian tube plicae and the wall shows layers of smooth muscle.

to vague clinical symptoms (10). A small simple cyst in asymptomatic patient may be managed conservatively. The final line of management depends upon the symptoms, cyst size and complications. Cystectomy can be done laparoscopically or laparotomy depending upon the patient status. Hence, surgical exploration with excision and conservation of ovaries in a large para- ovarian cyst is the mainstay of diagnosis and management (3). In our hospital, laparoscopy services including laparoscopic total hysterectomy is available. However, laparotomy was performed considering the huge size of the cyst. Retrospective analysis of the case shows that laparoscopy with open technique of primary port insertion at the Palmer's point could have been a better option.

The incidence of a para ovarian cyst in Bhutan is unknown, as no studies have been conducted in Bhutan. In this case, the clinicians in the local hospital were initially carried away by the ultrasound report of pseudo pancreatic cyst with normal pelvic organs and physical examination was missed. This report is to sensitise the clinicians the importance of history taking and clinical findings which will help you make a diagnosis on the possibility of this disease in adolescent girls. Use of IOTA simple rules, inter-disciplinary clinical meeting and awareness among the clinicians can be useful in diagnosing para-ovarian cyst preoperatively.

5. Conclusion

Gynaecologists should be aware of the possibility of a giant para-ovarian cyst in women presenting with a huge abdomino-pelvic mass, with normal tumour markers and imaging evidence of a giant simple cyst. Preoperative imaging studies such as ultrasound scan or CT scan can be useful in diagnosing para-ovarian cysts, and planning management. The preferred surgical route in such cases would be minimally invasive surgery. However, depending on the availability of experts and resources, laparotomy can be considered with conservation of the ovaries in a diagnosed case of para-ovarian cyst.

Author contribution

1st author SD: Conceptualised and wrote the manuscript, analysed and interpreted the data, involved in patient care, data collection and interpretation.

2nd author ND: Conceptualised manuscript and data interpretation, decision making, performed para ovarian cystectomy.

3rd author BP: Performed pathological evaluation and final interpretation

All authors read and approved the final manuscript.

Consent

Written informed consent was obtained from the patient's parents for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Ethical approval

Our institution does not require ethical approval for reporting de-identified individual case report.

Guarantor

Namkha Dorji

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Declaration of competing interest

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