International Journal of Scientific Reports
Okoye CN et al. Int J Sci Rep. 2023 Mar;9(3):76-79
http://www.sci-rep.com
pISSN 2454-2156 | eISSN 2454-2164
DOI: https://dx.doi.org/10.18203/issn.2454-2156.IntJSciRep20230378

Case Report

Large benign cystic teratoma of the ovary: a case report

Chukwunonso Nnamdi Okoye, Ogheneochuko Magdalene Alabintei, Peter Chibuzor Oriji*, Benjamin Olusegun Awotundun, Aderonke Adeniran, Romeo Mbooh, Ephraim Ayibakuro Suobite

Department of Obstetrics and Gynaecology, Federal Medical Centre, Yenagoa, Bayelsa State, Nigeria

Received: 22 January 2023
Accepted: 15 February 2023

***Correspondence:**
Dr. Peter Chibuzor Oriji,
E-mail: chibuzor54@gmail.com

ABSTRACT

Cystic teratoma is the most common ovarian germ cell tumour. It is made up of ectoderm, mesoderm, and endoderm that eventually become hair, muscle, teeth, or bone. These tumors are usually benign. A 30-year-old para 6+0 with 2 living children, presented to the gynaecological clinic of the Federal Medical Centre, Yenagoa with complaints of abdominal swelling of four-year duration. Physical examination revealed a young woman, in no obvious distress. Her abdomen was uniformly enlarged, moved with respiration and non-tender, smooth, firm, mobile in two planes and not attached to underlying structures or overlying skin. It was dull to percussion, and there was ascites demonstrable by fluid thrill. Report of abdominopelvic ultrasound scan revealed a huge cystic mass arising from the right adnexae, and extending into the abdomen. She subsequently had right ovarian cystectomy, and was discharged home on the 3rd day post-operation. Histopathology report revealed a diagnosis of benign cystic teratoma. She is presently on follow-up. Ovarian cyst is commoner among the women of reproductive age-group. Routine pelvic examination is advised to enable early detection and prompt management of this condition. Prognosis is usually good when the cyst is benign.

Keywords: Cystic teratoma, Ovarian germ cell tumour, Benign, Cystectomy, Yenagoa

INTRODUCTION

The most common ovarian germ cell tumor is cystic teratoma. It is made up of highly differentiated derivatives of the germ cell layers (ectoderm, mesoderm, and endoderm) that eventually become hair, muscle, teeth, or bone.[1]

These tumors are often benign, but can develop into malignancies in 0.2-3% of instances, mainly in postmenopausal women.[1-8] Squamous cell carcinoma is the most frequent type of malignant transformation (75%), followed by adenocarcinoma and carcinoid tumors.[1,2] Histologically, ovarian teratomas are widely divided into three categories: immature teratomas, mature cystic teratomas, and monodermal teratomas (including carcinoid tumors, neural tumors, and struma ovarii). Mature cystic teratoma, sometimes referred to as dermoid cyst, is the most prevalent variety of these tumors.[1]

CASE REPORT

She was a 30-year-old trader with secondary level of education who resided in Yenagoa, Bayelsa State, Nigeria, and was para 6+0 with 2 living children. She presented with complaints of abdominal swelling of four-year duration. Abdominal swelling was gradual in onset and progressively increased in size. There was no swelling on any other part of the body, history of yellowness of the eyes, chronic cough, nausea, vomiting, and early satiety, and constipation, passage of watery stools, abdominal pain, bloatedness or vaginal bleeding. There was no history of abdominal masses, use of ovulation induction agents, treatment for infertility or family history of cancer of the breast, ovary or colon.

Age at menarche and first childbirth were 14 years and 15 years, respectively. Menstrual flow was for 3-4 days in a regular 28-day cycle, with no history of menorrhagia, dysmenorrhea or dyspareunia. She was aware of contraception, but has not used any method. She had no knowledge of papanicolaou smear for cervical cancer screening.

She had 6 previous confinements between 2007 and 2016. The outcome of the first two were live male and female babies respectively at term through spontaneous vaginal deliveries, while that of the last 4 deliveries were fresh stillbirth female babies at term (the last delivery was by an emergency caesarean section for poor progress in labour and suspected foetal macrosomia, while others were by spontaneous vaginal deliveries). She was married in a monogamous setting and there was no family history of gynaecological malignancies or chronic medical illnesses. She has had both unorthodox and orthodox care before being verbally referred to our facility for management.

Physical examination revealed a young woman, in no obvious distress, afebrile (36.4°C), not pale, anicteric, and with no pedal oedema or peripheral lymphadenopathy. Her respiratory rate was 22 cycles per minute, and both lung fields were clear, her pulse was 86 beats per minute, regular and of good volume, blood pressure was 110/80 mmHg, heart sounds were heard and normal. Her abdomen was uniformly enlarged, moved with respiration and non-tender. The abdominal girth was 115 cm, with an abdominal mass measuring 45×56 cm (Figure 1), which was non-tender, smooth, firm, mobile in two planes and not attached to underlying structures or overlying skin. It was dull to percussion, and there was ascites demonstrable by fluid thrill. The liver and spleen were not palpable, and the kidneys were not ballotable. There was normal female external genitalia, and vaginal examination was unremarkable.

Figure 1: Abdominal mass measuring 45×56 cm.

Report of an abdominopelvic ultrasound scan revealed a huge cystic mass measuring 23.2 cm×19.6 cm arising from the right adnexae, and extending into the abdomen. There are areas of calcification within the mass, with debritic fluid seen within. Other intra-abdominal and pelvic organs were unremarkable. Results of CA 125 was 5.79 µ/ml (normal), carcino-embryonic antigen (CEA)<1.0 ng/ml (normal). Full blood count, serum electrolyte, urea and creatinine, liver function test and fasting lipid profile were all normal. Chest X-ray and echocardiography revealed no abnormalities.

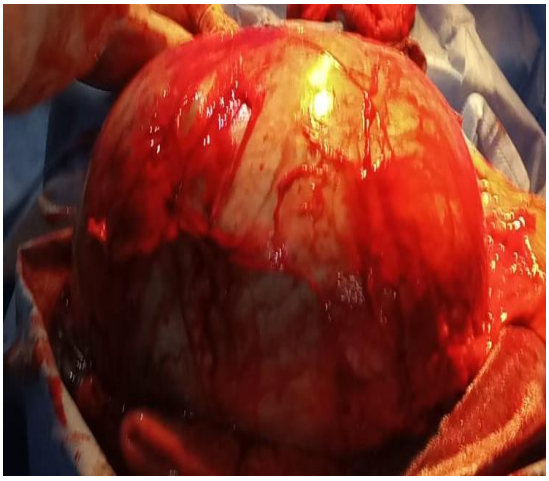

Figure 2: Intra-operative finding of a huge right cystic ovarian mass measuring about 20×12 cm.

She subsequently had right ovarian cystectomy. Intra-operative findings were a huge right cystic ovarian mass of about 20×12 cm (Figure 2), weighing 10 kg, and bound by adhesions to the omentum with visibly dilated blood vessels seen. A small cyst measuring <2×1 cm was noted on the left ovary, and cystic fluid was aspirated. Other pelvic organs were unremarkable. Left cystic ovarian aspirate was sent for cytology and the right cystic ovarian mass was sent for histology. Figure 3 shows the anterior abdomen, post-surgery. She was managed on nil per os immediate post-operation until bowel sounds were established; she received intravenous fluids for 24 hours, and parenteral antibiotics and analgesics for 72 hours.

She was discharged home on the 3rd day post-operation in stable clinical condition and was seen on her follow-up visit at the gynaecological clinic 4 weeks and then 3 months after discharge. Post-operative conditions were unremarkable. Cytology report revealed no malignant cells. Histology report revealed a specimen consisting of a grayish-white cystic tissue whose content has been expelled, weighing 1.0 kg and measuring 21.0×13.0×5.0 cm. Cut section revealed a unilocular cyst with wall diameter of 0.5 cm. Seen within the cystic cavity was a cyst measuring 4.0 cm in diameter containing a gelatinous straw-coloured material. There is a focus of calcified tissue. Microscopic findings showed cystic spaces lined by stratified squamous epithelia. The cyst wall contains skin adnexal structures, few adipose cells and wide focus of calcification. The diagnosis of benign cystic teratoma was made.

Figure 3: Anterior abdomen, post-surgery.

DISCUSSION

The most commonly affected areas for cystic teratomas are the ovaries and testes. The anterior mediastinum, sacrococcygeal area, and neck, however, are less often affected.[1] Ovarian teratomas are the most common ovarian germ cell tumors. They make up 20% of all the ovarian tumors in adults and 50% of all ovarian neoplasms in children, are benign.[1] Some of the risk factors for ovarian cystic teratoma include reproductive age group, a previous history of cystic teratoma, late menarche with irregular menstruation, low parity, infertility, adolescent exercise and alcoholism.[2] Our patient was in the reproductive age group.

Cystic teratomas are mainly asymptomatic, but can present with mild symptoms. About 6-65% of cystic teratomas at the time of diagnosis are asymptomatic.[9] They are usually found incidentally during a physical examination, during radiological studies or during pelvic/abdominal surgery for any other condition. Lower abdominal pain is present in 44-47% of patients.[9] This is followed by palpable abdominal or pelvic mass. Other features may include increasing abdominal girth, gastrointestinal or urinary symptoms (due to increasing tumor size), which causes compression of the adjacent structures, cachexia, fever, abdominal pain and vaginal bleeding.[10]

For patients with ovarian torsion, which is one of the most common complications of cystic teratoma, they present with an acute abdomen, nausea and vomiting, which requires urgent intervention. The only complaint our patient presented with was abdominal swelling. Abdomino-pelvic examination assesses the presence or absence of abdominal tenderness/masses, adnexal masses and uterine size. Good history and physical examination of patients are key in making diagnosis. Pelvic ultrasound scan plays an important role in the diagnosis and follow up of patients with cystic teratoma. Ultrasound scan revealed this huge cystic mass arising from the right adnexae, extending into the abdomen in our patient. Transvaginal ultrasound has a sensitivity of 57.9% and specificity of 99.7%.[11,12] It is as accurate as MRI in the assessment of ovarian cystic teratomas.[11,12] Other investigations may include the assessment of serum tumor markers, like alpha-fetoprotein (AFP), lactate dehydrogenase (LDH), and human chorionic gonadotrophin (hCG).

Differential diagnosis of ovarian cystic teratoma can be categorized into gynaecological and non-gynaecological. Benign gynaecological conditions include ectopic pregnancy, hemorrhagic ovarian cyst, pedunculated fibroid, polycystic ovary, tubo-ovarian abscess, simple cyst, cystadenoma and endometrioma. Malignant gynaecological conditions include ovarian sarcoma, sex cord/stromal tumour, endometrial carcinoma Kruckenberg tumour and other ovarian germ cell tumours. Benign non-gynaecological conditions include peritoneal cyst, peritoneal inclusion cyst, renal cyst, pelvic kidney, bladder diverticulum, diverticular abscess and peritoneal/retroperitoneal abscess. Malignant non-gynaecological conditions include metastasis, gastrointestinal cancer and retroperitoneal sarcoma.

Surgery is the definitive treatment modality of cystic teratoma. Some factors are considered when managing women with ovarian cystic teratomas. These factors include desire for fertility, size of the mass, risk of malignancy, and prevention of post-operative adhesions. Mature cystic teratoma of the ovary in women of reproductive age is usually removed by simple cystectomy, and the cyst should be removed in its entirety, because of the rare risk of a malignant change. This was the treatment modality that our patient received. In post-menopausal women, bilateral salpingo-oophorectomy is recommended, because post-menopausal women have some risk of malignant change.[13] These procedures can be done through laparotomy or laparoscopy (where the facilities are present). The advantages of laparoscopy include reduction in post-operative pain, reduced blood loss, reduction in duration of hospital stay, quick recovery and early mobilization. The disadvantages include prolonged operative time, increased cost of operation, and the potential need for a second staging procedure if the cyst is malignant.

There is a 0.2% chance of intraoperative spillage of cystic teratoma contents during laparoscopic excision and increased risk of post-operative adhesion formation. Laparotomy is given priority over laparoscopy if there is a risk of spillage of cyst contents into the peritoneal cavity. However, the use of endobag, which is an impermeable endoscopic sac has been shown to reduce the spillage from 46% to 3.7% of the cases of cystic teratomas.[3] Our patient had laparotomy because of the risk of spillage of cyst contents due to its size. Patients should be followed up after surgery due to the 4% risk of recurrence of the cyst and the 0.2-3% risk of malignant transformation, and the development of other germ cell tumours of the ovary within ten years of management.[1-8]

The complications of ovarian cystic teratomas include torsion, rupture, infection, adhesions, malignant change, gliomatosis peritonei and anti-N-methyl-D-aspartate receptor encephalitis. Our patient did not have any of these complications. The prognosis mainly depends on the extent of the disease and its complications. Benign cystic teratomas generally have a good prognosis after surgical management.

CONCLUSION

Ovarian cyst is commoner among the women of reproductive age-group. Routine pelvic examination is advised to enable early detection and prompt management of this condition. Prognosis is usually good when the cyst is benign.

ACKNOWLEDGEMENTS

The authors appreciate the relatives of this patient, and all members of the managing team for the roles they played in the management of this patient.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Ahmed A, Lotfollahzadeh S. Cystic Teratoma. Treasure Island, FL: StatPearls Publishing; 2022.
2. Hamilton CA, Ellison MC. Cystic Teratoma: Practice Essentials, Background, Pathophysiology. Medscape. 2021.
3. Templeman CL, Fallat ME, Lam AM, Perlman SE, Hertweck SP, O'Connor DM. Managing mature cystic teratomas of the ovary. Obstet Gynecol Surv. 2000;55(12):738-45.
4. Anteby EY, Ron M, Revel A, Shimonovitz S, Ariel I, Hurwitz A. Germ cell tumors of the ovary arising after dermoid cyst resection: a long-term follow-up study. Obstet Gynecol. 1994;83(4):605-8.
5. Godinjak Z, Bilalović N, Idrizbegović E. Laparoscopic treatment of ovarian dermoid cysts is a safe procedure. Biomol Biomed. 2011;11(4):245-7.
6. Nezhat C, Kalyoncu S, Johnson E, Berlands N, Nezhat C, Nezhat F. Laparoscopic management of ovarian dermoid cysts: Ten years' experience. Obstet Gynecol. 1999;93(4):S76.
7. Laberge PY, Levesque S. Short-term morbidity and long-term recurrence rate of ovarian dermoid cysts treated by laparoscopy versus laparotomy. J Obstet Gynaecol Can. 2006;28(9):789-93.
8. Koçak M, Dilbaz B, Ozturk N, Dede S, Altay M, Dilbaz S, et al. Laparoscopic management of ovarian dermoid cysts: a review of 47 cases. Ann Saudi Med. 2004;24(5):357-60.
9. Ayhan A, Bukulmez O, Genc C, Karamursel BS, Ayhan A. Mature cystic teratomas of the ovary: case series from one institution over 34 years. Eur J Obstet Gynecol Reprod Biol. 2000;88(2):153-7.
10. Goudeli C, Varytimiadi A, Koufopoulos N, Syrios J, Terzakis E. An ovarian mature cystic teratoma evolving in squamous cell carcinoma: A case report and review of the literature. Gynecol Oncol Rep. 2016;19:27-30.
11. Sahin H, Abdullazade S, Sanci M. Mature cystic teratoma of the ovary: a cutting edge overview on imaging features. Insights Imaging. 2017;8(2):227-41.
12. Srisajjakul S, Prapaisilp P, Bangchokdee S. Imaging features of unusual lesions and complications associated with ovarian mature cystic teratoma. Clin Imaging. 2019;57:115-23.
13. RCOG. Ovarian Cysts in Postmenopausal Women (Green-top Guideline No. 34), 2016. Available at: https://www.rcog.org.uk/guidance/browseallguidance/greentopguidelines/ovariancystsinpostmenopausalwomen-green-topguidelineno-34/. Accessed on 12 January 2023.

Cite this article as: Okoye CN, Alabintei OM, Oriji PC, Awotundun BO, Adeniran A, Mbooh R, et al. Large benign cystic teratoma of the ovary: a case report. Int J Sci Rep 2023;9(3):76-9.