

DOI: 10.36648/Case Report.3.2.7

Bilateral Torsion of Ovarian Dermoid Cyst in an 18-Year-Old Nulligravida: A Case Report

Adu Appiah-Kubi^{1,3}, Thomas Okpoti Konney^{1,2}, Yaw Owusu Gyanteh¹, Emma Lawrence⁵ and Carolyn Johnston⁴

¹Department of Obstetrics and Gynaecology, Komfo Anokye Teaching Hospital, Kumasi, Ghana

²Department of Obstetrics and Gynaecology, School of Medicine and Dentistry, Knust. Kumasi, Ghana

³Department of Obstetrics and Gynaecology, School of Medicine, UHAS Ho, Ghana

⁴Division of Gynaecologic Oncology, University of Michigan, Ann Arbor, USA

⁵Department of obstetrics and Gynaecology, University of Michigan, Ann Arbor, USA

***Corresponding author:** Adu Appiah-Kubi, Department of Obstetrics and Gynaecology, Komfo Anokye Teaching Hospital Ghana Kumasi, Ghana & School of Medicine, UHAS Ho, Ghana Kumasi, Ghana, Tel: 00233207363173; E-mail: aapiah@uhas.edu.gh

Citation: Appiah-Kubi A, Konney TO, Gyanteh YO, Lawrence E, Johnston C (2019) Bilateral Torsion of Ovarian Dermoid Cyst in an 18-Year-Old Nulligravida: A Case Report. Int J Case Rep Vol: 3 No: 2:7

Received date: November 20, 2019; **Accepted date:** December 13, 2019; **Published date:** December 20, 2019

Copyright: © 2019 Appiah-Kubi A, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Background: Adnexal torsion has been described most frequently in women of childbearing age however; it is not uncommon in premenarchal girls or postmenopausal women (17.2% of cases). Torsion of the ovary may occur separately from torsion of the fallopian tube, but most commonly the two adnexal structures are affected together and are responsible for 2.7% of all gynaecologic emergencies. Mature cystic teratoma is the most common type of ovarian germ cell tumour and is usually unilateral but can be bilateral in 10-15% of cases. In 3.5% of such cases unilateral torsion has been reported. Bilateral torsion is very rare. We present a rare case of bilateral torsion of a dermoid cyst.

Case presentation/methods: We present a case of bilateral torsion of Dermoid cyst in an 18-year-old nulligravida who was managed by detorsion and bilateral cystectomy at laparotomy at the Komfo Anokye Teaching Hospital. We reviewed the literature for similar cases.

Outcomes: Histopathology confirmed bilateral mature cystic teratoma. The patient has been having regular menstrual cycles after the procedure.

Conclusion: We demonstrate that prompt surgical intervention should be considered to salvage the ovaries in cases of large and dense ovarian cysts to prevent complications such as torsion.

Keywords: Dermoid Cyst; Cystic Teratoma; Torsion; Detorsion; Cystectomy; Laparotomy

Introduction

Adnexal torsion has been described most frequently in women of childbearing age however, it is not uncommon in premenarchal girls or postmenopausal women (17.2% of cases) [1]. Torsion of the ovary may occur separately from torsion of the fallopian tube, but most commonly the two adnexal structures are affected together and are responsible for 2.7% of all gynaecologic emergencies [2].

The aetiology of adnexal torsion is unknown. Torsion of a normal sized ovary is extremely rare. Large and heavy ovarian cysts such as mature cystic teratoma (Dermoid cysts) or polycystic ovaries seem to be prone to torsion. Comerci et al. [3] reported an incidence of 3.5% torsions in a series of 517 cases with mature cystic teratoma.

Adnexal torsion occurs when an ovary twists around the infundibulopelvic and ovarian ligaments that hold it in place. This twisting can cut off blood flow to the ovary and fallopian tube [4] leading to tissue death. The mature cystic teratoma is the most common type of ovarian germ cell tumour [5] and is usually unilateral but can be bilateral in 10-15% of cases [6]. Mature cystic teratomas comprise 10%-20% of all ovarian tumors. It is commonly seen in patients between 20 and 40 years of age [7]. The size of this tumor rarely exceeds 10 cm [8]. These tumors are usually benign, but in 1%-2% of cases, it may be associated with malignancy [9]. Mature cystic teratomas often remain asymptomatic or may present with an acute abdomen due to torsion, infection, or rupture. Spontaneous rupture of the tumor is however rare being only occasionally reported [10]. We present a rare case of a bilateral torsion of Dermoid cyst in an 18-year-old nulligravida managed by detorsion and bilateral cystectomy at laparotomy.

Case Report

An 18-year-old P0+0 senior high school student was referred to our outpatient department at Komfo Anokye Teaching Hospital in Kumasi, Ghana with an ultrasound report with an incidental finding of bilateral ovarian masses thought to be dermoid cysts measuring approximately 8 cm × 10 cm on the right and 6 cm × 8 cm on the left. She complained of mild backache. On examination her abdomen was soft and a non-tender mass compatible with 16-week gravid uterus was palpated.

She was managed on an outpatient basis with analgesics until she reported to the emergency unit with severe lower abdominal pains two weeks after her initial outpatient visit. The pain was constant, sharp and radiated to the back. She had vomited once, shortly after the onset of the pain. This was her first episode of pain and besides the nausea/emesis; she did not have any other symptoms or self-reported abnormalities.

She took paracetamol prior to reporting and had not taken any other medication. She had no family history of any malignancy. She had her menarche at 14 years and coitarche at 17 years. Her Last Menstrual Period was one week prior to presentation. She had no significant social history.

On examination she was in pain, afebrile, anicteric and not pale. All her vital signs were normal. The abdominal examination showed minimal movement on respiration, a bulge in the lower abdomen with rebound tenderness and guarding. There was a firm tender mass in the lower abdomen extending to just below the umbilicus. There was no demonstrable ascites and bowel sounds were heard and were normal. She had normal external genitalia. Pelvic examination elicited bilateral adnexal tenderness. Urine pregnancy test was negative.

A transabdominal ultrasound taken at the emergency unit revealed both ovaries to be enlarged, rounded and heterogenous in appearance with the right ovary measuring 8 cm × 10 cm and the left 6 cm × 8 cm. There was no flow upon colour Doppler interrogation in both ovaries.

Other laboratory tests were reported as normal (Full blood count, Biochemistry, Tumour markers).

A presumptive diagnosis of bilateral ovarian torsion was made, and she was counselled on the need for an emergency exploratory laparotomy. We obtained an informed consent and prepared her for an emergency laparotomy. Decision to incision time was about 30 minutes.

At laparotomy, there was no ascites; both ovaries were enlarged approximately as estimated by the ultrasound scan. The right and left ovary had twisted on their infundibulopelvic ligaments, twice and once, respectively. Both were slightly edematous with intact capsules and looked viable. There was no evidence of hemorrhage or adhesions. The uterus, bilateral fallopian tubes, and remainder of the intraperitoneal contents appeared to be normal.

The ovaries were untwisted, and bilateral cystectomy was done. There were no intraoperative complications. She was managed with intravenous fluids, analgesia and antibiotics. She

made an unremarkable post-operative recovery and was discharged on post-operative day 5.

The histology was consistent with bilateral mature ovarian teratomas. She reported for review at two weeks and four weeks postoperatively with no concerns and was very grateful. She had her menses 3 weeks after the surgery, and had since been having regular menses

Discussion

Mature cystic ovarian teratomas are a benign ovarian tumor accounting for about 95% of all ovarian teratomas and about 10% to 20% of all ovarian tumours [11]. It can happen in all age groups however it is the most common ovarian tumour encountered in women in their 20's and 30's [12].

It is thought to arise from the germ cell of the ovary and is composed of cystic materials and organized structures. All the three cell layers can be found in it. Macroscopically it often contains many cystic areas with teeth, hairs, hairs mixed with sebaceous, sticky and foul-smelling materials (**Figure 3**). Commonly mature cystic teratomas of the ovary are unilateral except in about 8% to 15% of cases where they are found to be bilateral [13,14]. In the majority of cases it does not present with symptoms and is found incidentally on abdominal examinations or on a pelvic ultrasound being performed for other purposes. The presence of symptoms depends on the size of the cyst and may be due to one of the complications like torsion or rupture of the ovarian cyst. The ovarian enlargement is one of the risk factors for the torsion. Reports indicate that, in 80% of ovarian torsions the ovaries measure more than 5 cm [15]. The most common benign tumour reported to have ovarian torsion is the mature ovarian teratoma (dermoid cyst)

The most common symptom of ovarian torsion (**Figure 1**) is acute onset of lower abdominal pain, followed by nausea and vomiting [16]. Our patient presented with the sudden onset of severe lower abdominal pain that was associated with nausea and vomiting with prior knowledge of bilateral ovarian cysts.



Figure 1: A picture of the bilateral ovarian torsion.

The diagnosis of ovarian torsion depends on a detailed history, examinations and imaging. Pelvic ultrasound which is the initial imaging of choice, will show an enlarged ovarian mass with either an absent doppler flow or reduced flow in the vessels due to torsion of the ovary [17,18]. Another sign that may be picked on pelvic ultrasound with doppler interrogation is

the whirlpool sign which is due to a twisted ovarian vascular pedicle [19,20]. The diagnosis of torsion in this case was not a challenge because of the classical history of sudden onset of lower abdominal pain and examination finding of tender lower abdomen with palpable mass. The diagnosis was later confirmed with ultrasound findings of bilateral adnexa masses with no flow on doppler interrogation.

Management of torsion of the ovary is surgical either through laparoscopy or through laparotomy [21]. This case was promptly managed with laparotomy and bilateral ovarian cystectomy after detorsion of the ovaries (**Figure 2**). The reason the above management was chosen was that the patient was a young nulliparous woman and desired fertility and fortunately both ovaries looked viable with no signs of malignancy. The main benefit of our management was the ability to be able to grossly determine the viability of the ovaries after detorsion.

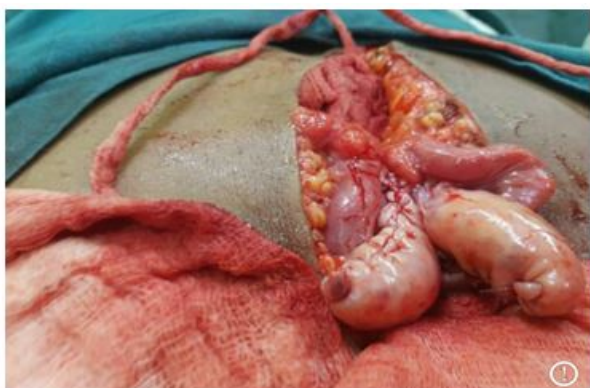


Figure 2: Ovaries after the bilateral cystectomy.

We re-emphasize that early surgical intervention should be considered in cases of large ovarian cysts to prevent a complication such as torsion which occurred in our case.

Also, prompt diagnosis and management should be the hallmark of management when a young woman presents with suspected bilateral ovarian torsion like we did in this case so as not to lose both ovaries with its associated need for hormone replacement and need for *In Vitro* Fertilization (IVF) with donor eggs if future fertility is desired.

In conclusion, our rare case of bilateral ovarian torsion in a young woman who was seen earlier in our outpatient department with bilateral ovarian masses only for her to come in as an emergency, shows the need for early surgical intervention in our young women with confirmed big bilateral ovarian masses (**Figure 2**) so as to prevent emergencies like torsion and when these emergencies do occur prompt diagnosis and surgical intervention should be done to salvage the ovaries.

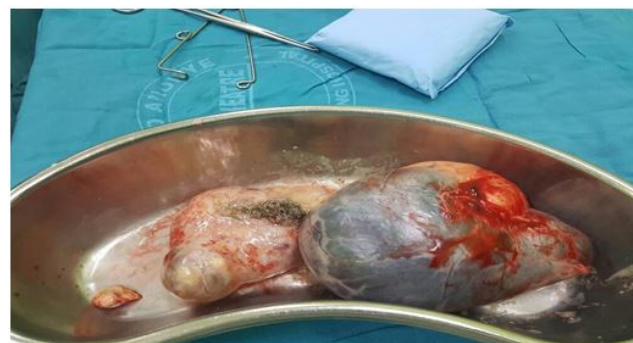


Figure 3: Ovaries after the surgery with its content (hair).

Conclusion

In conclusion, our rare case of bilateral ovarian torsion in a young woman who was seen earlier in our outpatient department with bilateral ovarian masses only for her to come in as an emergency, shows the need for early surgical intervention in our young women with confirmed big bilateral ovarian masses so as to prevent emergencies like torsion and when these emergencies do occur prompt diagnosis and surgical intervention should be done to salvage the ovaries.

References

- Houry D, Abbott JT (2001) Ovarian torsion: A fifteen-year review. *Ann Emerg Med* 38: 156-159.
- Hibbard LT (1985) Adnexal torsion. *Am J Obstet Gynecol* 152: 456-461.
- Comerci JT Jr, Licciardi F, Bergh PA (1994) Mature cystic teratoma: A clinicopathologic evaluation of 517 cases and review of the literature. *Obstet Gynecol* 84: 22-28.
- White M, Stella J (2005) Ovarian torsion: 10-year perspective. *Emerg Med Australas* 17:23-27.
- Young RH, Clement PB, Suilly RE (1994) The ovary, in *Diagnostic surgical pathology*, S.S. Sternberg (ed), Ravan press: New York. p. 2195.
- Peterson WF, Prevost EC, Edmunds FT, Hundley JM Jr, Morris FK (1955) Benign cystic teratoma of the ovary: A clinico-statistical study of 1007 cases with review of the literature. *Am J Obstet Gynecol* 70: 368-382.
- Sucly RE, Young RH, Clement PB (1998) Tumor of the ovary, maldeveloped gonads, fallopian tube and broad ligament. *Atlas of tumor pathology. Third series, fascicle 23*. Wahington, DC: Armed Forces Institute of Pathology.
- Einarson JI, Edwards CL, Zurawin RK (2004) Immature ovarian teratoma in adolescence: A case report and review of literature. *J Pediatr Adolesc Gynecol* 17:187-189.
- Talerman A (1994) Germ cell tumor of the ovary. In: Kur-man Ri, ed. *Blaustein's pathology of the female genital trod* (4th edn) New York: Springer-Verlag 879-884
- Srikanth S, Anandam G (2014) Bilateral dermoid cyst of ovary. *Med J DY Patil Univ* 7:492-493.

11. Ayan A, Bukulmez O, Genc C (2000) Mature cystic teratoma of the ovary: Case series from one institution over 34 years. *Eur J Obstet Gynecol Reprod Biol* 88:153
12. Lakkis WG, Martin MC, Gelfand MM (1985) Benign cystic teratoma of the ovary: A 6-year review. *Can J Surg* 28:444-446.
13. Pepe F, Panella M, Pepe G, Panella P, Pennisi F, et al. (1986) The presence of a unilateral mature cystic teratoma, man-Dermoid cysts of the ovary. *Eur J Gynaecol Oncol* 7:186-191
14. Outwater EK, Siegelman ES, Hunt JL (2001) Ovarian teratomas: Tumor types and imaging characteristics. *Radio Graphics* 21:475-90.
15. Ci H, Mun-Kun H, Dah-Ching D (2017) A review of ovarian torsion. *Tzu Med J* 29(3):143-147.
16. Houry D, Abbott JT (2001) Ovarian torsion: A fifteen-year review. *Ann Emerg Med* 38:156-159.
17. Wilkinson C, Sanderson A (2012) Adnexal torsion: A multimodality imaging review. *Clin Radiol* 67:476-483
18. Lee EJ, Kwon HC, Joo HJ, Suh JH, Fleischer AC (1998) Diagnosis of ovarian torsion with color doppler sonography: Depiction of twisted vascular pedicle. *J Ultrasound Med* 17:83-89.
19. Nizar K, Deutsch M, Filmer S, Weizman B, Beloosesky R et al. (2009) Doppler studies of the ovarian venous blood flow in the diagnosis of adnexal torsion. *J Clin Ultrasound* 37: 436-439.
20. Valsky DV, Esh-Broder E, Cohen SM, Lipschuetz M, Yagel S (2010) Added value of the gray-scale whirlpool sign in the diagnosis of adnexal torsion. *Ultrasound Obstet Gynecol* 36: 630-634.
21. Tsafirir Z, Hasson J, Levin I, Solomon E, Lessing JB et al. (2012) Adnexal torsion: Cystectomy and ovarian fixation are equally important in preventing recurrence. *Eur J Obstet Gynecol Reprod Biol* 162:203-205.