

Original Article

PATTERN OF OVARIAN CYST ACCIDENTS IN A TERTIARY HOSPITAL IN NIGER-DELTA, NIGERIA: A 4-YEAR RETROSPECTIVE REVIEW.

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Abstract

Background: Ovarian cyst accidents constitute about 3 % to 5 % of gynecological emergencies and can be associated with significant morbidity. An appraisal of ovarian cysts accidents will help optimize patient management.

Objectives: To describe the pattern of presentation of ovarian cyst accidents at the Federal Medical Centre Yenagoa Bayelsa State, Nigeria.

Materials and Methods: A retrospective review of all cases of emergency laparotomies done for ovarian cyst accidents at the Obstetrics and Gynaecology department of the Federal Medical Centre, Yenagoa was undertaken from 1st July 2015 to 30th June 2019. Data on patient's socio-demographic characteristics, symptomatology, significant investigation results, findings at laparotomy and histology were extracted. The data were analyzed using IBM SPSS version 25.0. Frequencies and percentages of categorical variables were determined and results presented in tables.

Results: Ovarian cyst accidents accounted for 5.9 % (n=43) of emergency laparotomies (n=729) in the facility during the study period. Patient's age ranged between 16–45 years with a mean age of 27.5 ± 6.4 years. Majority (30.2 %) of the women were in the 26–30 years age group. Most (69.8 %) of them were multiparous. All presented with lower abdominal pain and over 70% had an abdomino-pelvic mass. About two third (66 %) had the cyst on the right. Mean diameter of cysts was 9.5 ± 4.2 cm. Cystectomy was done in 86.0 %, 14.0 % had ovariectomy and histology showed benign cyst in 100 % of the cases.

Conclusion: All the cases of ovarian cyst accidents occurred in women of reproductive age and were from benign ovarian cysts. Most of the patients were multiparous and ovarian cystectomy was done in most cases.

Keywords: Ovarian cyst, Ovarian cyst accidents, Laparoscopy, Laparotomy, Histology, Reproductive age.

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INTRODUCTION

The ovaries are prone to a variety of cystic growths. Some of these may be physiological/functional, consequent to the normal process of ovulation or overstimulation of the ovaries. They include follicular cysts, corpus luteum cysts, theca lutein cysts etc. Otherwise, an ovarian cyst may be neoplastic (benign or malignant) and can arise from any of the embryonic origins of the ovary.¹⁻³ In the reproductive age group, masses of the ovary are often cystic, functional or benign neoplastic.³ However, malignant tumours may also occur³; especially in women over 40 years old⁴ and are usually mixed cystic and solid or completely solid tumours.³ Though the ovary has a number of supports in its location in

the pelvis, it experiences mobility, especially in the presence of cysts and tumours and thus vulnerable to accidents.⁵

Accidents of an ovarian cyst include torsion, rupture, haemorrhage, infection or a combination,^{3,5-7} and they constitute about 3% to 5% of gynecological emergencies.⁵ With various gynaecological emergencies presenting with acute abdomen, a high index of suspicion from a good understanding of the nature and clinical presentations of ovarian cysts are required to make a diagnosis of ovarian cyst accidents.⁵ As there has not been a previous study on the nature of ovarian cysts accidents at the Federal Medical Centre, Yenagoa, the aim of this study was to describe the pattern of presentation of ovarian cyst accidents at the centre and serve as a background for further studies.

MATERIALS AND METHODS

A retrospective descriptive study of emergency laparotomies done for ovarian cyst accidents, at the Federal Medical Centre, Yenagoa, Bayelsa state, Nigeria from July 1, 2015 to July 31, 2019 was carried out. Folder numbers of patients who had emergency laparotomy were collected from theatre operation registers. This was used to retrieve the patient folders from the records department of the hospital, and relevant information were retrieved from the folders, including patient's socio-demographic characteristics at the time of admission, symptomatology, findings on physical examination, significant investigation results, findings at laparotomy and histology findings. The data were analyzed using IBM SPSS version 25.0. Frequencies and percentages of categorical variables were determined and results presented in tables.

This review is retrospective, and the data was completely anonymised such that the information was not attributable to any of the study participants. Institutional research board approval was therefore not required.

RESULTS

A total of 729 patients had gynaecological emergency laparotomies during the study period, of which 43 women had ovarian cyst accidents. Ovarian cyst accidents thus accounted for 5.9 % of gynaecological emergency laparotomies. The patient's age ranged between 16–45 years, with a mean age of 27.5 ± 6.4 years. Most; $n = 13$ (30.2%) of the patients were in the 26-30 years age group, while the 16-20 years age group was least recorded; $n = 5$ (11.6%) as depicted in Table 1. Slightly above two-third of the patients were multiparous; $n = 30$ (69.8%) while about one-third were nulliparous; $n = 13$ (30.2%).

As shown in table 2, the most common presenting symptom was lower abdominal pain in all the patients. An abdomino-pelvic mass was present in 32 (74.4%) of the women. Adnexal tenderness was another common finding. Ovarian cyst occurred on the right in 25 (58.1%) of the patients, while bilateral occurrence was recorded in one patient (Table 3). In this study, the diameter of the cysts ranged from 5 cm to 18 cm with a mean cyst diameter of 9.5 ± 4.2 cm.

Ovarian cyst torsion was the most frequent type of ovarian cyst accident; $n = 12$ (27.9%), followed by ruptured ovarian cyst; $n = 9$ (20.9%), haemorrhagic ovarian cyst; $n = 7$ (16.3%) and infected ovarian cyst; $n = 7$ (16.3%). A combination of forms of ovarian cyst accidents occurred in

18.6% as displayed on Table 3. Ovarian cystectomy was the most frequent surgical intervention; $n = 37$ (86.0%), while ovariectomy was done in 14.0% of the cases.

As shown in table 4, report of histological analysis was returned for thirty-nine of the 43 excised tissues and all were benign. Physiological cysts were the most common finding; $n = 18$ (41.9%), followed by benign epithelial tumours; $n = 17$ (39.5%) and benign germ cell tumours; $n = 4$ (9.3%) (Table 4). Most; $n = 12$ (70.6%) of the benign epithelial tumours were serous cystadenomas, while the rest were mucinous cystadenomas (29.4%) (Table 4). Of the physiological cysts, 10 (55.6%) were corpus luteum cysts and 8 (44.4%) were follicular cysts (Table 4).

Table 1: Socio-demographic profile of patients with cyst accidents at the Federal Medical Centre, Yenagoa

Variable	Frequency (n =43)	Percentage (%)
Age of Distribution		
16 – 20	5	11.6
21 – 25	10	23.3
26 – 30	13	30.2
31 – 35	9	20.9
36 – 40	3	7.0
41 – 45	2	4.7

Table 2: Pattern of presentation of patients with ovarian cyst accidents at the Federal Medical Centre, Yenagoa

Variable	Frequency	Percentage (%)
Lower abdominal pain	43	100.0
Abdomino-pelvic mass	32	74.4
Adnexal tenderness	30	69.8
Menstrual disturbance	7	16.3
Pressure effect	4	9.3
Bleeding per vaginam	1	2.3

*** Some patients had multiple symptoms, so the cumulative percentage exceeds 100%

Table 3: Intra-Operative Findings at Laparotomy of patients with ovarian cyst accidents at the Federal Medical Centre, Yenagoa.

Variable	Frequency (n = 43)	Percentage (%)
Location of Cyst		
Right	25	58.1
Left	17	39.5
Bilateral	1	2.3
Types of Accident		
Torsion	12	27.9
Ruptured	9	20.9
Combined	8	18.6
Haemorrhagic	7	16.3
Infected	7	16.3

Table 4: Histologic diagnosis of patients with accidented Ovarian Cysts at the Federal Medical Centre, Yenagoa

Variable	Frequency (n = 43)	Percentage (%)
Serous cystadenoma	12	27.9
Corpus luteum cyst	10	23.3
Follicular cyst	8	18.6
Mucinous cystadenoma	5	11.6
Benign teratoma	4	9.3
No histology report	4	9.3

DISCUSSION

All ovarian cyst accidents recorded during this study occurred in women of reproductive age. This finding is similar to that from previous studies,^{5,8} and reflects the general preponderance of ovarian cysts during the reproductive age and the role played by endogenous sex steroid hormone production.³

The finding from this study, that all the patients with ovarian cyst accident presented with lower abdominal pain and most of them also had abdomino-pelvic mass is similar to the clinical presentation noted in a study done by Zekele et al,⁹ where abdominal pain occurred in 98.1% and abdominal mass in 78.6 % of the patients. Treatment modality of ovarian cyst accidents is determined by the patient's clinical state, size of the lesion, skill of the

physician, availability of resources, risk of malignancy, among other factors.

Apart from availability of skill and resources, the size of the tumour may affect the choice of laparotomy versus laparoscopy for ovarian cyst accidents that require surgical intervention. The mean cyst diameter of 9.5 ± 4.2 cm from this study is similar to the average cyst diameter of 9.7 cm documented by Ekweani et al.⁵ There is no consensus yet on the limit of ovarian cyst size considered a contraindication to laparoscopic management.¹⁰ Laparoscopic management of huge ovarian cysts; defined as > 10 cm in diameter by some authors and that reaching above the umbilicus by others, has been described.^{10,11} However, laparotomy is still employed in the management of ovarian cysts in settings with limited resources and skill.⁵ All the surgeries were by laparotomy in this study as resources for endoscopic surgeries were not available at the time. Suspicion of malignancy is not an absolute contraindication to laparoscopic surgical intervention for ovarian cysts,¹² but laparoscopy should be avoided in patients in shock.^{7,13} Occasionally, management of some ovarian cyst accidents e.g., ovarian cyst rupture, haemorrhage or an infected ovarian cyst can be limited to medical conservative treatment, which include administration of intravenous fluids, antibiotics, analgesics etc.⁷

In this study, ovarian cyst torsion was the most common finding at laparotomy, similar to the study by Zekele et al, where ovarian cyst torsion was most frequently found at laparotomy (62.0 %).⁹ The role of de-torsion and subsequent cystectomy is becoming increasingly recognized in the management of ovarian cyst torsion. This is contrary to the traditional practice of total excision without untwisting a torsed ovarian cyst (for the fear of reperfusion injuries from release of emboli and toxins into the systemic circulation).¹⁴ De-torsion and subsequent cystectomy should always be considered in women of reproductive age, in whom preservation of future fertility is paramount.^{14,15}

Beyond ultrasound characterization of an ovarian mass, the role of histological diagnosis cannot be overemphasized as the need to rule out malignancy is paramount.¹⁷ Similar to the result from this study, Abduljabbar et al² previously documented that majority (79.5%) of the cases of ovarian cysts studied had unilateral involvement and the right ovary was more affected (63.1%). Also similar to the finding from

this study, except that germ cell tumours were the most common benign neoplastic cyst in their study, Forae and Aligbe¹ from a histological overview of ovarian lesions, found that there were more nonneoplastic cysts and among them, corpus luteum cysts were most common. However, Manivasakan et al¹⁶ in a study of benign adnexal masses, found serous cystadenomas to be most common. The findings from this and other studies agrees with the fact that, in the reproductive age group, masses of the ovary are often cystic, functional or benign neoplastic. Case fatality rate was zero over the 4-year study period implying a good detection rate of ovarian cyst accident and prompt intervention.

In conclusion, ovarian cyst accident is a more common occurrence in women of reproductive age group, especially between ages 20 and 30 years and are usually functional or benign neoplastic lesions. Early diagnosis and early implementation of appropriate management is necessary to prevent significant morbidity and mortality.

AUTHORS' CONTRIBUTION

Author 1 conceptualized the study, contributed to the study design, collected data, participated in analyses of data and wrote the initial draft of the manuscript.

Authors 2 & 3 contributed to study design, participated in analyses of data and reviewed the initial draft of the manuscript. All authors read the final draft of the manuscript.

COMPETING INTERESTS

There are no competing interests.

ETHICAL APPROVAL

Ethical clearance was not required for this study.

REFERENCES

1. Forae GD, Aligbe JU. A histopathological overview of ovarian lesions in Benin city, Nigeria: How common are the functional cysts? *Int J Med Public Health*. 2014;4:265-268.
2. Abduljabbar HS, Bukhari YA, Al Hachim EG, Alshour GS, Amer AA, Shaikhoon MM, et al. Review of 244 cases of ovarian cysts. *Saudi Med J*. 2015;36:834-838.
3. Mobeen S, Apostol R. Ovarian Cyst. In: StatPearls. Treasure Island, FL: StatPearls Publishing; 2021. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK560541/>. Updated July 8 2020. Accessed July 8, 2021.
4. American Cancer Society medical and editorial content team. Ovarian cancer risk factors. American Cancer Society. Available from: <https://www.cancer.org/cancer/ovarian-cancer/causes-risks-prevention/risk-factors.html>. Updated January 26, 2021. Accessed July 8, 2021.
5. Ekweani J C, Oguntayo A, Kolawole A, Zayyan M. An 8-year review of ovarian cyst accidents at a tertiary health center in Northwestern Nigeria. *Trop J Obstet Gynaecol*. 2016;33:307-309.
6. Sorinola O, Cox C. Accidents of ovarian cysts. *Obstet Gynaecol*. 2002;4(1):10-14.
7. Mishra J. Accidents to ovarian cysts. *J Univers Coll Med Sci*. 2013;1(2):46-53.
8. Zahra F. Pattern of benign ovarian cysts in Qatari women. *Qatar Med J*. 2017;2016(2):17.
9. Zeleke S, Shiferaw N, Lukman Y. Adnexal torsion a five-years retrospective review in two hospitals. *Ethiop med j*. 2014;52(4): 155-164.
10. Alobaid A, Memon A, Alobaid S, Aldakhil L. Laparoscopic Management of Huge Ovarian Cysts. *Obstet Gynecol Int*. 2013;2013:Article ID 380854.
11. Shindholimath VV, Jyoti SG, Patil KV, Ammanagi AS. Laparoscopic management of large ovarian cysts at a rural hospital. *J Gynecol Endosc Surg*. 2009;1(2):94-97.
12. Grabosch SM, Helm CW. Ovarian cysts treatment and management. Medscape. Available from: <https://emedicine.medscape.com/article/255865-treatment>. Updated December 20, 2018. Accessed June 25, 2021.
13. Bowers SP, Hunter JG. Contraindications to Laparoscopy. In: Whelan RL, Fleshman JW, Fowler DL, eds. *The Sages Manual*. New York, NY: Springer; 2006:25-32.
14. Oelsner G, Cohen SB, Soriano D, Admon D, Mashiach S, Carp H, et al. Minimal surgery for the twisted ischaemic adnexa can preserve ovarian function. *Hum Reprod*. 2003;18(12):2599-2602.
15. Huang C, Hong MK, Ding DC. A review of ovary torsion. *Ci Ji Yi Xue Za Zhi*. 2017;29(3):143-147.
16. Knudsen UB, Tabor A, Mosgaard B, Andersen ES, Kjer JJ, Hahn-Pedersen S, et al. Management of ovarian cysts. *Acta Obstet Gynecol Scand*. 2004;83(11):1012-1021.
17. Manivasakan J, Arounassalame B. A study of benign adnexal masses. *Int J Reprod Contracept Obstet Gynecol*. 2012;1(1):12-16.