ISSN: 2755-0176

Journal of Cancer Research Reviews & Reports

SCIENTIFIC Research and Community

Research Article

Open Access

Histopathological Pattern and Clinical Correlates of Ovarian Tumours in FMC, Abeokuta: A Five-Year Review

Omotola Aminat Oladosu-Aderolu[1], Awonuga David Olalekan[1], Aremu Hadijat Ifedola[1*], Ojugbele Nimatallah Module[1] and Ifebude Joshua Ebuka[2]

[1]Department of Obstetrics and Gynaecology, Federal Medical Centre, Abeokuta, Nigeria

[2]Department of Obstetrics and Gynaecology, University of Sheffield Teaching Hospital, UK

ABSTRACT

Background: Ovarian tumours are one of the commonest gynaecological conditions seen in our environment. One of the most important aspects of the management of an ovarian tumour is the differentiation of lesions that are likely to be benign from those that are likely to be malignant. Understanding such patterns and their clinical correlation is essential in order to counsel patients and prognosticate. The histological pattern has not been adequately reviewed with clinical presentations in FMC, Abeokuta. This study was undertaken to determine the histopathological patterns of ovarian tumours and their clinical correlates at Federal medical centre Abeokuta.

Aims and Objectives: To know the histological pattern, incidence and age distribution of ovarian lesions at FMC, Abeokuta over a 5year period as well as correlate the findings with clinical presentations.

Materials and Method: This is a retrospective study of all the ovarian samples received in the histopathology unit of the hospital from January 1, 2014, to December 31, 2018. Data of all ovarian samples were retrieved from the histopathology registers and further clinical information were obtained from the health records of the hospital where the case files were retrieved and the relevant clinical information extracted.

Results: Ovarian lesions account for 3.7% % of all samples processed in the histopathology department of the hospital during the study period. A total of 106 ovarian samples were processed but only 91 cases were analysed for this study. The mean age was 39years with an age range of 14-77years. Of the 91 cases analysed, 41(45%) were non-neoplastic, 45 (49%) were benign and 5(6%) were malignant. Corpus luteum cyst was the commonest of all non-neoplastic lesions (accounting for 44% of non-neoplastic lesions) followed by simple follicular cyst (20%) and inflammatory cyst (18%). Mature cystic teratoma was the commonest benign neoplastic lesion (35%) followed by serous cystadenoma (22.5%), mucinous cystadenoma (20%) and fibroma (17.5%). The commonest malignancy was serous cyst adenocarcinoma. Abdominal pain and abdominal swelling were the predominant symptoms bringing patients with ovarian lesions to the hospital.

Conclusion: Ovarian lesions are significant causes of abdominal swelling from the adolescent to the elderly age group. However, only 1 in 18 cases is malignant and this is therefore re-assuring to both the clinician and the patients.

***Corresponding author**
Aremu Hadijat Ifedola, Department of Obstetrics and Gynaecology, Federal Medical Centre, Abeokuta, Nigeria.

Received: May 25, 2026; **Accepted:** May 30, 2026; **Published:** June 10, 2026

Keywords: Histopathological Pattern, Clinical Correlate, Ovarian Tumours

Introduction

The ovaries are flat, nodular, oval structures that measure between 3 and 5 cm in their greatest dimension and weigh between 2 and 4 g. They are suspended by peritoneal folds and ligaments on either side of the uterus and attached to the back of the broad ligament of the uterus, behind and below the uterine tubes. A single layer of surface epithelial tissue lines their external surface, while a dense fibrous tissue and stroma make up most of their internal substance.

Ovarian cyst is a common gynaecological problem. The cyst may be functional or pathological in nature [1]. Majority of the functional cysts are simple cysts, while minority consists of complex cystic architecture. Studies have shown that 90% of these cysts resolve spontaneously [2]. These cysts are frequently seen in young female in their 2nd decades due to failure of ovulation [2]. Pathological cysts may be benign, malignant and borderline. Benign cysts are common in young women in the reproductive age group while malignant tumours are frequently seen in the elderly. Most of the ovarian tumours are broadly classified into surface epithelial-stromal tumours, sex cord-stromal tumors, and germ cell tumors.

Surface epithelial-stromal tumors account for approximately 60% of all ovarian tumors and approximately 90% of malignant ovarian tumors [3]. The major subtypes of epithelial tumours are the serous, mucinous, endometrioid, clear cell, and transitional cell (or Brenner type). Highly malignant epithelial-stromal tumors lacking

any specific differentiation are classified as undifferentiated. Epithelial stromal tumors that are not designated as having a specific subtype

commonly are recorded as adenocarcinomas not otherwise specified (NOS). Sex cord-stromal tumors are ovarian tumors that are believed to originate in theca cells, other stromal cells, and granulosa cells and their testicular sex cord counterparts, the Sertoli and Leydig cells. These tumors often are associated with endocrine manifestations. They account for approximately 8% of all ovarian tumors and approximately 7% of all malignant ovarian tumors [4]. Granulosa cell tumors, fibromas, thecomas, Sertoli cell tumors. Germ cell tumors are ovarian tumors formed by cells that are believed to be derived from primordial germ cells. These tumors make up approximately one-fourth of all ovarian tumors but only 3–7% of malignant ovarian tumors [5].

In parts of Asia and Africa where the prevalence of surface epithelial-stromal tumors is relatively low, germ cell tumors constitute a larger proportion of all ovarian neoplasms [6]. More than half of the ovarian neoplasms that develop in children and adolescents are of germ cell origin, with one-third of these being malignant. Conversely, in adults, germ cell tumors are relatively infrequent, and the great majority of them are benign, with most being mature cystic teratomas (dermoid cysts). The prototypical germ cell tumors are the dysgerminomas. Embryonal carcinomas are germ cell tumors composed of poorly differentiated, multipotential germ cells. Germ cell tumors with differentiation in an embryonal or somatic direction result in teratomas. Those that differentiate in an extraembryonic (placental or trophoblastic) direction result in yolk sac tumors or choriocarcinomas. Mixed subtypes of germ cell tumors also occur frequently.

Inclusion Criteria
All samples containing ovarian tissues were included.

Exclusion Criteria
Case files that could not be retrieved were excluded from the analysis.

Data Collection
Approval to review the records was obtained from the head of the department. The Histopathology records were thereafter reviewed. The total number of samples processed was noted as well as the total number of samples that were gynaecological and ovarian tissue. A total of 2794 samples were processed during the study period. There were 674 Gynaecological samples of which 106 samples contained ovarian tissue.

The hospital number, the age of the patients and the histological diagnosis was noted. Approval to retrieve the case files of the ovarian samples was obtained from the head of the department of medical records. The case files were subsequently retrieved from the health records department for extraction of relevant information. A total of 91 case files were retrieved giving a retrieval rate of 86%. The age, parity, marital status, occupation, tribe, weight, height, clinical presentation, menstrual pattern and the type of surgery done were recorded.

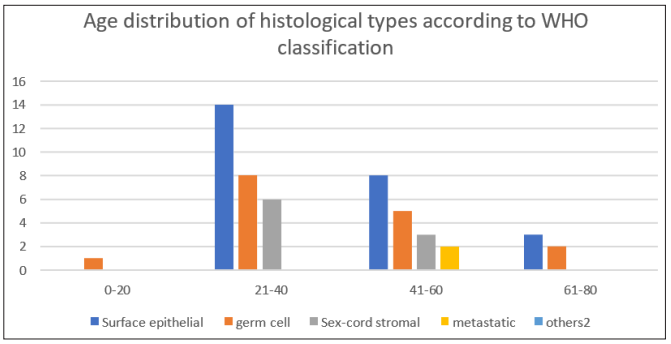
Ethical Approval and Considerations Data Analysis
Data obtained were collated and analysed with simple statistical methods using Microsoft excel 2011 edition. The results are presented using tables and histogram.

Results
Within the period from January 1, 2014, to December 31, 2018, a total of 2794 samples were received in the department of Anatomic pathology, of which 674 samples were gynaecological samples and 106 of these contained ovarian tissue. Ovarian samples therefore constituted 3.79% of total samples processed and 15.7% of gynaecological samples processed. However, only 91 case files were retrieved and analysed.
The age distribution of the patients with ovarian lesions ranged between 14 and 77years.
The mean age was 38.5 ± 11.2 years. Most of the patients, n=60(66%) was nulliparous.

Table 1: Age and Parity of Patients with Ovarian Lesions

	Frequency	Percentage
AGE		
10-19	2	2.2
20-29	22	24.2
30-39	30	33.0
40-49 50-59	21 9	23.1 9.9
60-69	5	5.4
70-79 PARITY	2	2.2
0	60	66
1	12	13
2	10	11
3	3	4
4 AND ABOVE	6	6
Total	91	100

Surface epithelial cell tumours were found predominantly between ages 21 and 60. Mature cystic teratomas were found predominantly in the third and fourth decades of life and they were the only histological type found in females below age 20. Primary ovarian malignancy was found only in women above 60years of age. The age distribution of lesions is illustrated in the Histogram below.



Non-neoplastic lesions accounted for 41(45%) while neoplastic lesions constituted 50 (55%) of all ovarian lesions. Benign neoplasms were 45(49%) while malignant neoplasms were 5(6%) of the total ovarian samples.

Table 2: Categories of Ovarian Samples

	NUMBER	PERCENTAGE
Non-neoplastic Benign Neoplastic Malignant neoplastic	41 45 5	45 49 6
Total	91	100

Non-neoplastic lesions were predominantly functional cysts such as corpus luteum cyst (n = 20, 22%) and simple follicular cysts (n = 8, 8.8%). There were 9 inflammatory cysts (n = 9, 9.9%) and 4 haemorrhagic cysts (n = 4, 4.4%). Other cysts encountered includes endometriotic cysts (n = 3, 3.3%) and polycystic ovaries. Surface epithelial cell tumours, n = 17(18.7%), were the most common benign neoplasms encountered followed by germ cell tumours, n = 14(15.4%). Serous cystadenoma was the commonest epithelial tumour (n = 9, 9.9%) followed closely by mucinous cystadenoma (n = 8, (8.8%). Mature cystic teratomas were the only germ cell tumours seen. Malignant lesions constituted 6.6% of all lesions. Three-fifth of these were primary ovarian malignancies while the remaining two-fifth were metastatic lesions. Serous cystadenocarcinoma was the commonest primary ovarian malignancy seen.

Table 3: Histological Features of Ovarian Lesions

LESIONS	HISTOLOGY	FREQUENCY	PERCENTAGE
NON-NEOPLASTIC	Corpus luteum cyst	20	22.0
	Simple follicular cyst	8	8.8
	Inflammatory cyst	9	9.9
	Haemorrhagic cyst	4	4.4
	Endometriotic cyst	3	3.3
	Polycystic ovary	1	1.1
BENIGN NEOPLASTIC	Mature cystic teratoma	14	15.4
	Serous cystadenoma	9	9.9
	Mucinous cystadenoma	8	8.8
	Fibroma	7	7.7
	Xanthogranulomatosis	1	1.1
	Brenner's tumour	1	1.1
MALIGNANT NEOPLASTIC	Serous cystadenocarcinoma	2	2.2
	Metastatic adenocarcinoma	2	2.2
	Carcinoid tumour	1	1.1
TOTAL		91	100

Table 4 shows that, 36 (40%) of the patients presented with abdominal pain, 23(27%) presented with history of abdominal swelling, 6(4%) presented with abnormal vaginal bleeding with abdominal mass while 26 (29%) were incidental findings during myomectomy or total abdominal hysterectomy plus bilateral salpingo-oophorectomy.

Table 4: Presenting Symptoms of Patients

PRESENTATION	NUMBER	PERCENTAGE
Abdominal pain	36	40
Abdominal swelling with	23	27
Vaginalbleedingwith abdominal mass	6	4
Incidental findings	26	29
Total	91	100

Discussion

In this study, ovarian lesions constituted 3.79% of total samples processed and 15.7% of gynaecological samples processed at the histopathology laboratory of the hospital during the study period. A study in National Hospital, Abuja found that ovarian lesions constituted 1.3% of all histological samples processed at their laboratory which is less than the value from this study [7]. This may be due to the availability of less surgical subspecialties in our facility during the study period.

The mean age and the age range of presentation of all ovarian lesions in this study were 38.51±1.2years and 14-77years which are similar to the values obtained from National Hospital, Abuja with a mean age of presentation of 39.14±11.43years and age range of 7-80years [7].

The commonest ovarian lesions found in this study are the non-neoplastic lesions (45%) similar to studies from Benin (51.3%) and Abuja (58%) [7,8]. Corpus luteum cyst was the commonest non-neoplastic cyst followed by simple follicular cyst (44.4%) followed by simple follicular cyst (17.8%). A study done in Benin also reported a preponderance of corpus luteum cyst [8]. However, in National Hospital, Abuja simple follicular cyst the commonest non-neoplastic lesions [7]. The review of histological types of benign ovarian neoplasms encountered in this study showed a higher preponderance of epithelial tumours which accounts for 42.5% of all benign ovarian neoplasms similar to studies from Maiduguri where epithelial tumours accounts for 40.7% of all benign ovarian neoplasms [9]. However, studies from Abuja, Benin city and Korle-Bu, Ghana revealed that germ cell tumours are the commonest benign ovarian neoplasm accounting for 58%, 51.8% and 41.9% of all benign ovarian neoplasms respectively [7,8,10]. Mature cystic teratoma was the commonest germ cell tumour in all the studies reviewed [7-10]. The commonest malignant tumour in this study were surface epithelial tumours dominated by serous cystadenocarcinoma (40%) similar to studies from Ghana (52%), Maiduguri (39%) and Abuja (55%) [7,8,10]

Abdominal swelling and abdominal pain are the most common presenting complaints in this study. This agrees with studies from in India and Abuja that provided a pattern with abdominal pain and abdominal mass (in that order) as the most frequent symptoms [7,11]. Abdominal pain is the commonest presentation is this study probably because of the acute nature of the pain as most patients may not easily notice a mass in the abdomen. This may also be due to the fact that malignant lesions which are more likely to present with a mass rather than abdominal pain have a low incidence in the study.

A study using MEDLINE search for a period of 14 years assessing the accuracy of symptoms in the diagnosis of ovarian malignancies provided the likelihood ratios of the symptoms in the following order: abdominal mass, abdominal distension (or increased girth), abdominal or pelvic pain, abdominal or pelvic bloating, loss of appetite, and family history of ovarian cancer [11,12].

Conclusion

Ovarian lesions constitute a significant proportion of gynaecological specimens processed at the Histopathology laboratory at Federal Medical Centre, Abeokuta. Most ovarian lesions occur in the third and fourth decade of life. Ovarian lesions are uncommon in Paediatric age group. The most common ovarian lesions at Federal Medical Centre, Abeokuta are the non-neoplastic lesions, of which corpus luteum cyst is the commonest. Surface epithelial tumours are the most common neoplasms of the ovary followed

closely by germ cell tumours. Serous cystadenocarcinoma is the commonest malignant neoplasm. Only one in eighteen ovarian lesions are likely to be malignant and primary ovarian malignancy occurred only in women above 50years. These are important in counselling patients with ovarian lesions. The commonest presenting complain is abdominal.

Acknowledgement
Our profound gratitude to the Head of Department of Obstetrics and Gynaecology. Dr. T.A Ogunfunmilayo and that of Histopathology department Dr. Olutunde. We appreciate them for their immense support.

Authors Contributions
Oladosu-Aderolu O.A conceived and designed the study. Oladosu-Aderolu O. A and Aremu H. I collected, analyzed the data and jointly wrote the manuscript. All the authors contributed to the critical revision and approved the final version. The project was supervised by Dr Awonuga D. O.

Financial Support and Sponsorship
Nil.

Conflict of Interest
There are no conflicts of interest.

References

1. Grimes DA, Jones IB, Lopez TM, Schulz KE (2014) Oral contraceptive pills for functional ovarian cysts. Cochrane Database sys rev 4: CD006134.
2. Danso KA, Turpin CA, Adnexal M (2005) In: Kwawukume E.Y and Emuveyan E.E. (eds). Comprehensive gynaecology in the Tropics. 2nd edition. Graphic Packaging Limited, Accra 153-157.
3. Rubin SC, Sutton G (2012) Ovarian cancer. In: Te Linde's Operative Gynaecology. 11th edition. Lippincott Williams & Wilkins, Philadelphia 805-835.
4. Alobaid AS (2008) Mucinous cystadenoma of the ovary in a 12-year-old girl. Saudi Med J 29: 126-128.
5. Abduljabbar HS, Bukhari YA, Al Hachim EG, Alshour GS, Amer AA, et al. (2015) Review of 244 cases of ovarian cyst. Saudi med J 36: 834-838
6. Buowari DY (2011) Ovarian cyst at general hospital Aliero, Nigeria: A one-year review. Tropical Journal of Medical Research 13: 165-169
7. Amin SM, Olah F, Babandi RM, Liman MI, Abubakar SJ (2017) Histopathological analysis and clinical correlations of ovarian lesions in a tertiary hospital in Nigeria: A 10-year review. Ann Trop Pathol 8: 25-8.
8. Forae GD, Aligbe JU (2014) A histopathological overview of ovarian lesions in Benin City, Nigeria; How common are the functional cysts? Int J Med Public Health 4: 265-268.
9. Obed JY, Khalil MI, Ekanem ED (1999) Histological types of ovarian tumours as seen in an African teaching hospital in North-Eastern Nigeria. J Obstet Gynaecol 19: 526-528.
10. Akakpo PK, Derkyi-Kwarteng L, Quayson SE, Gyasi RK, Anim JT (2016) Ovarian tumors in children and adolescents: A 10-yr histopathologic review in Korle-Bu Teaching Hospital, Ghana. Int J Gynecol Pathol 35: 333-336.
11. Gupta B, Guleria K, Suneja A, Vaid NB, Rajaram S, et al. (2016) Adolescent ovarian masses: A retrospective analysis. J Obstet Gynaecol 36: 515-517.
12. Scully R, Sobin L (1999) Histological typing of ovarian tumours. Springer 9: 25-30.

Copyright: ©2026 Aremu Hadijat Ifedola, 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.