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Ovarian Tumours- Clinicopathologic Features in Port Harcourt, Nigeria.

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ABSTRACT

Ovarian tumours continue to be one of the leading gynaecological conditions in Nigeria. These are associated with late presentation and poor outcome in the event of malignancy.To ascertain the prevalence, clinical and pathological features of ovarian tumours at the University of Port Harcourt Teaching Hospital.A retrospective analysis of the clinical data from medical records over eight years was conducted. Data on the sociodemographic characteristics, clinical features and histological variants was collated and analyzed. The prevalence of ovarian tumours was 4.3%. Benign tumours constitute 79.6% of all ovarian tumours with physiological ovarian cysts being the commonest variety. Malignant tumours make up 19.3% of all ovarian tumours with mucinous cyst adenocarcinoma been the commonest (50%). Ovarian tumours are more with nulliparous patients and bilateralism is associated with malignancy (P=0.06,OR 3.54,95% CI 0.81-15.65). Most patients are asymptomatic but pelvic pain was the commonest presentation when symptomatic. Patients with abdominal swelling are more likely to have ascites (P=0.00) and abdominal mass was associated with pelvic pain (P=0.00). The ovarian tumours seen in the Port Harcourt are mainly benign. Most patients are asymptomatic, tumours are more in nulliparous women and bilateralism is suggestive of malignancy.

Keywords: ovarian tumours, clinicopathologic features, Port Harcourt.

INTRODUCTION

Several cells in the ovary are titopotential and can give rise to variety of tumours including the malignant forms[1]. The different types of ovarian tumours occur in all races and cultures. Epidemiological studies report that ovarian tumours are less common in Africa and Japan. However, the true incidence of ovarian tumours in Africa is unknown, as some of the patients do not present in hospitals and others are managed conservatively without surgery or tissue diagnosis.

The major histological variants of ovarian tumours observed in Nigeria were epithelial tumours, germ cell tumours and sex-cord stromal tumours[1]. The epithelial tumours were the most common in several centers in Nigeria with a prevalence of 40-76% in Ibadan, Maiduguri, Lagos and Benin; this is followed by germ cell tumours with 10-28% of ovarian tumours in these centres[1-4]. However, studies in Port Harcourt, two decades ago indicated that germ cell tumours were commoner in this part of Nigeria and noted a reduced incidence of surface epithelial tumours[5, 6]. In Nigeria, benign ovarian tumours made up 77-81% of ovarian tumours[1-6]. The rates are similar to what obtains in other parts of the world[7,8].

Ovarian cancer accounts for about 4% of all female cancers worldwide with over 225,000 new cases diagnosed each year[9]. The incidence of malignant ovarian tumours increases with age and this varies considerably across the globe[2,10]. The highest incidence of ovarian malignancy is in the 40-49 years age group while in benign tumours the highest incidence is between 15-39years[11,12]. About 90 to 95% of ovarian malignancy arises sporadically, while 5 to 10% are attributed to hereditary factors[10]. Other factors that may predispose to malignant ovarian tumours include a higher number of ovulatory cycles[12]. Nulliparity and use of ovulation induction agents or oestrogen only pills also increase the risk of malignant ovarian tumours[10, 12,13]. The use of oral contraceptive pill reduces the risk of malignant ovarian tumours by 30-60%. Other protective factors include pregnancy at an early age, breastfeeding, and late menarche[11, 12,14].

Patients with ovarian tumours have been noted to present late thus increasing morbidity and mortality associated with this pathology. These tumours are poorly studied in the Niger delta region of Nigeria with very few reports. It is thus necessary to evaluate the clinicopathologic features of these tumours to assist in diagnosis, prognostication and proffer options of managing patients.

MATERIALS AND METHODS

A retrospective analysis of the clinical data from gynaecological ward admissions, operating theatre and discharge records over eight years, from January 2004 to December 2011 was done. The data of all the patients with the diagnosis of ovarian tumours and all those who had surgeries done on their ovary at the University of Port Harcourt Teaching Hospital were collected. Information collated onto a preformed spreadsheet was: age, parity of patients, clinical presentation and histological variants of the tumours. This was analyzed with SPSS 20.0 for window and Epi Info version 7, presented as frequency tables and charts, test of association using chi square and odd ratio were carried out, with P value less than 0.05 set as significant.

RESULTS

A total of 4351 patients were admitted into the gynaecology ward within the period of study and 187 cases of true ovarian tumours were identified giving a prevalence of 4.3% of gynaecological admissions.

The age range of the patients was 10 - 89 years, with a mean age of 35.45 ± 6.1years. Physiological tumours occurred most in 30-39 years age group, Germ cell tumours were seen in 20-29 years age group while sex cord-stromal tumours were found in patients aged 20-39years. There were no physiological, germ cell or sex cord-stromal tumours in patients aged 60 years and above.

Concerning the parity of women studied: 39.3%(99) were Para 0-1, 32.5%(82) were Para 2-3 while greater than Para three were 28.2%(71).

The frequency of ovarian tumours was observed to decrease with increasing parity. Ovarian tumours were commoner in nulliparous women than in parous women (54%Vs 46%) though this was not statically significant (p=0.7)

Ovarian tumours were unilateral in 28 patients (15.0%) and bilateral in 159 patients (85.0%). Patients with bilateral ovarian disease had higher chances of malignancy (34 out of 159patients) when compared to those with unilateral disease (2 out of 28patients) (P=0.06, OR 3.54; 95% CI 0.81-15.65) See table I

Histological reports of the true ovarian tumours showed that 149 (79.6%) patients had benign ovarian tumours, 36 patients (19.3%) had malignant ovarian tumours and 2 (1.1%) were borderline tumours. Majority of the benign tumours were physiological ovarian cysts 84(44.9%) followed by germ cell tumours 48(25.7%). Benign epithelial tumour was seen in16 patients (8.5)%. Epithelial tumours and germ cell tumours of the ovary occurred in 50 (19.9%) patients each (Table 3).

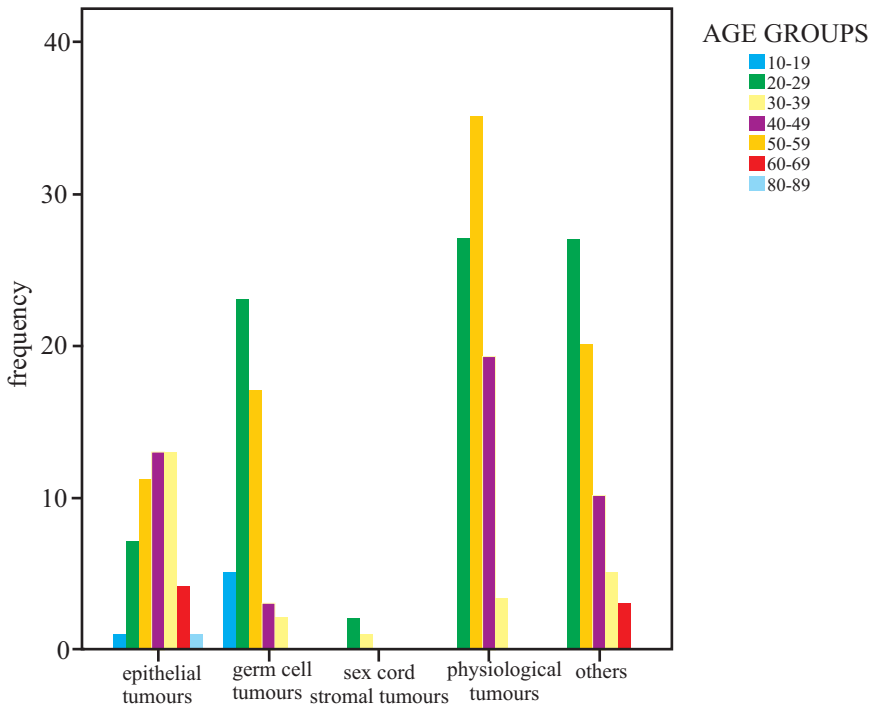

Figure I: Age groups and histological types of ovarian tumours

Table 1: Relation of diseased ovary to the tumours type

Diseased ovary	Types of tumours			
	Benign	Malignant	Borderline	Total
Both	124 (83.2%)	34 (94.4%)	1 (50.0%)	159 (85.0%)
Left	14 (9.4%)	1 (2.8%)	1 (50.0%)	16 (8.7%)
Right	11 (7.4%)	1 (2.8%)	0 (0%)	12 (6.3%)
Total	149 (100.0%)	36 (100.0%)	2 (100.0%)	187 (100.0%)

Table 2: Frequency of subtypes of ovarian tumours

HISTOLOGY	TYPES OF TUMOURS	FREQUENCY no(%)
Physiological	Physiological tumours	84(44.9)
Germ cell	Benign cystic teratoma	48(25.7)
	Yolk sac tumours	2(1.0)
Total Germ Cell		50(26.7)
Epithelial	Brenner tumours	1(0.5)
	Mucinous cystadenoma	5(2.7)
	Serous papillary cystadenoma	5(2.7)
	Serous cystadenoma	7(3.7)
	Serous cystadenomacarcinoma	14(7.5)
	Mucinous cystadenocarcinoma	18(9.6)
Total epithelial tumours		50(26.7)
Sex cord tumours	Granulosa cell	2(1.0)
	Thecoma	1(0.5)
Total sex cord stromal tumours		3(1.5)

Table 3: Frequency of histological types and percentage of benign, borderline or malignancy

HISTOLOGICAL GROUPING	Tumours type			Total n(%)
	Benign	Malignant	Borderline	
Physiological tumours	84 (44.9)	0 (0.0)	0 (0.0)	84 (44.9)
Epithelial tumours	16 (8.5)	32 (17.1)	2 (1.1)	50 (26.7)
Germ cell tumours	48 (25.7)	2 (1.1)	0 (0.0)	50 (26.7)
Sex cord stromal tumours	1 (0.5)	2 (1.1)	0 (0.0)	3 (1.6)
Total	149 (79.6)	36 (19.3)	2 (1.1)	187 (100.0)

Table 4: Clinical features of ovarian tumours

Pelvic pain	Adnexal Mass		Total
	No n(%)	Yes n(%)	
No	136(72.7	4(2.1)	140(74.8)
Yes	11(5.9)	36(47)	47(25.1)
Total	147(100)	40(21.3)	187(100)
Ascites	Abdominal Swelling		
	No n(%)	Yes n (%)	
Nil	157(84)	14(7.4)	171(91.4)
Yes	0	16(8.6)	16(8.6)
Total	157(84)	30(16%)	187(100)

Malignant ovarian tumours were found in 36 patients (14.3%) of all ovarian tumours. Thirty two patients (88.9% of all malignant cases) and 12.7% of all ovarian tumours were epithelial malignant tumours and 2 patients (5.56%) of all malignant cases were germ cell tumours and another 2 patients (5.56%) of all malignant ovarian tumours were sex cord-stromal tumours. The serous cystadenoma was commoner than the mucinous cystadenoma with a frequency of 10.3% to 9.13% of ovarian tumours. Mucinous adenocarcinoma was most common malignant ovarian tumours with a frequency of 50% of all malignant ovarian tumours and 56% of all malignant epithelial tumours of the ovary.

Benign cystic teratoma occurred in 48 patients which is (96%) of germ cell tumours and the second most common benign tumours (22.43%) (Table3).

Table V shows that 74.8%(140) of patients had no pelvic pain as against 25.1%(47) who had pelvic pain. Among those with pelvic pain 76.6%(36) had adnexal mass while 23.4%(11) had no adnexal mass. In patients without pain, 97.1%(136) had no adnexal mass while 2.9%(4) had adnexal mass.

Considering patients with ascites, 8.6%(16) had ascites while 91.4%(171) had no ascites. Among those without ascites 91.8%(157) had no abdominal swelling while 8.2%(14) had abdominal swelling. Patients with abdominal swelling are more likely to have ascites (P=0.00) and the presence of abdominal mass was associated to pelvic pain (P=0.00).

DISCUSSION

The frequency of ovarian tumours from this study was 4.3% of all gynaecological admissions. The benign ovarian tumours constituted 79.6% of all ovarian tumours. This finding is similar to reports from Maiduguri and Benin in Nigeria and the study by Sohail et al in Pakistan where the benign ovarian tumours occurred in 81%, 78% and 79.3%, of ovarian tumours respectively[1,6,10].

In this study, physiological ovarian cysts were the most common tumours present in 84 patients and representing 33.3% of ovarian tumours. This is similar to the Pakistan study but contrast with many reports in Nigerian where epithelial tumours of the ovary is the most common[1]. Similar studies in this centre about 2 decades ago identified germ cell tumours as most common[12, 17]. This study showed that germ cell tumours are still common in this center as noted two decades ago, and there is now an increase in the frequency of surface epithelial tumours as the germ cell and the surface epithelial tumours each represented 26.7% of the ovarian tumours. This study indicated a rise in the incidence of surface epithelial tumours in Port Harcourt when compared to what was observed two decades ago. The increasing cosmopolitan nature of the city of Port Harcourt may account for the rising surface epithelial tumours as the population of Port Harcourt city has become more heterogeneous with people from other parts of the country migrating to the city. In addition, the demographic distributions showed more people in the late reproductive age group that are more predisposed to epithelial tumours as opposed to those observed in the germ cell group.

The frequency of malignant ovarian tumours in this study is similar to several other studies around the developing countries which varies from 15 to 20%[1,6,10, 12].

There exist an age related prevalence of the two main types of ovarian tumours in this study. The benign ovarian tumours occurred more in those below 40years and the malignant disease more in those above 40years. The peak incidence for benign ovarian tumours were in mid reproductive age while menopausal women are more predisposed to malignant tumours. Two decades ago, both the benign and malignant ovarian diseases occurred more in patients less than 40years of age. This difference in age prevalence is possibly due to the rising incidence of the surface epithelial tumours in this population as similar age distribution patterns have been observed where surface epithelial tumours are predominant[2,3,5,6].

It was also observed that the frequency of ovarian tumours decreased with increasing parity. This means that increased parity could have a protective effect against development of ovarian tumours especially the malignant types as had been observed in similar studies [3,6,13]. The periods of pregnancies are associated with anovulation, which would result in less disruption of the epithelial surface of the ovary hence reducing the risk of mutations or persistence of follicular cysts.

It was also observed in this study that bilateral ovarian tumours had a 3.5times risk of been malignant, while unilateral tumours were noted to be benign. Cytogenetic studies point to the fact that bilateral ovarian cancers are unicentric meaning that tumours on the contralateral side are as a result of metastasis[18]. Bilateral presentation has been noted to be more common and associated with late presentation, which is in keeping with the characteristics of patients observed in Nigeria[19, 20, 21]. In keeping with the earlier statement, it is possible that most of the patients reviewed presented at late stages of the disease allowing time for migration of tumour from one ovary to the other.

Benign cystic teratoma constituted 96% of all germ cell tumours while the remaining were yolk sac tumours. The yolk sac tumours are the malignant teratoma and account for 1% of all malignant tumours of the ovary in this study. The benign cystic teratoma were the commonest benign tumours in this centre and also the commonest benign ovarian cyst in Maiduguri and Benin studies. The epidemiological variation observed in this study, with physiological tumours being the commonest as against benign cystic teratoma as seen 20years ago may be attributed to change in nomenclature by World Health Organization in the classification of ovarian tumours which previously excluded physiological tumours.

The serous epithelial tumours were the most common of all surface epithelial tumours of the ovary, which conforms to observations in other series.[1,2,3,6].

Mucinous tumours accounted for 48% of all epithelial tumours of the ovary and 9.52% of all ovarian tumors. Mucinous cyst adenocarcinoma, the malignant form of mucinous ovarian tumours accounted for half of all malignant tumours of the ovary. This finding is at variance with other local studies that revealed that serous cyst adenocarcinoma is the commonest malignant epithelial tumours[1,3,10]. The sex cord-stromal tumours were the least common ovarian tumours seen in this study. Two out of the three patients who had sex cord-stromal tumours had granulosa cell tumours and this is similar to the pattern of sex cord-stromal tumours seen in Germany[22]. Globally, sex cord tumours are the rarest of all ovarian tumours and observations in this study are in keeping with universal expectation [23,24]. Further studies need to be done to explain this observation.

The clinical features of ovarian tumours are non-specific and maybe even absent in patients with the disease. The same were noted in our patients. Pelvic pain was the commonest clinical presentation, followed by adnexal mass while abdominal swelling and ascites were the least presenting features. The presence of abdominal pain in these patients was significantly associated with pelvic masses. Thus pain in this group could be attributed to distension of the ovarian capsule either due to haemorrhage, rupture or distension by growth of tumours. These are usually late features and may be the reason for the patient presenting for evaluation. The lack of pointing clinical features in these patients often times results in misdiagnosis and late recognition of the disease and a perilous outcome in the malignant disease.

CONCLUSION

This study reiterates that a benign ovarian tumour is commoner than the malignant type. There is an increased incidence of epithelial ovarian tumours over the germ cell tumours that were predominant in this region about 2 decades ago. There is thus need to have a high index of clinical suspicion in patients with predisposing factors since most of the patients studied had no specific symptoms. The increase in the predisposing factors such as declining parity and increased use of ovulation induction [2,13] agents coupled with increasing access to assisted conception treatment centres in the Port Harcourt calls for an urgent need to identify patients with ovarian tumours. Determining the prevalence of the different types of ovarian tumours will definitely improve the quality of care given to patients.

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