Original Article

Histopathological Profile of Cases of Oophorectomy: A Report from 1997-2007

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ABSTRACT

OBJECTIVE: This study was carried out to describe the findings of histopathological profile of series of ovarian tumors removed on oophorectomy during ten-year period in Karachi.
MATERIAL AND METHODS: It was a descriptive study of 316 oophorectomy specimen observed during last 10 years. Data were entered on SPSS 11 and results were analyzed regarding distribution of cysts in relation to age, size and complications.
RESULTS: The mean±SD age of the women undergone oophorectomy was 28.3±8.46. Complications were reported in 28.7% of the cysts and more commonly found in younger age groups. Corpus luteum was found to be the most frequent histopathology in all cases (22.87%) while follicular cysts were seen in 50% of the bilateral presentations.
CONCLUSION: Most of the cysts removed on oophorectomy were benign in nature and despite of larger sized cysts in young women, malignancy was happened to be twice more common in middle age group. Hence, in younger age group, conservative management is recommended even for large sized cysts.

KEY WORDS: Ovarian Cysts, Histopathology, Oophorectomy.

INTRODUCTION

With the frequent use of pelvic ultrasonography, ovarian cysts are increasingly detected as a chance finding in asymptomatic women. Among healthy women 6% are found to have adnexal masses, 90% of which are cystic lesions[1]. Most of the adnexal cysts removed at surgery are found to be benign or functional. Granberg et al found that the risk of malignancy in a simple ovarian cyst is less than 0.3%. He also observed that unilateral cysts were almost always benign[2]. Nadro & colleagues have suggested a place for expectant management even in post-menopausal women[3]. Many authors have suggested ultrasound guided aspiration of ovarian cysts, with or without injection of sclerosing materials like alcohol or methotrexate as a form of treatment. Zanetta et al however have concluded that aspiration does not provide better results than simple observation[4]. Clinical examination, CA125 estimation, vaginal ultrasonography, doppler studies of cyst and ovarian cytology have been used to predict the nature of the cyst. Clinical examination is often disappointing with 30-65% of ovarian tumors being overlooked. Vaginal ultrasonography can predict the benign nature of a tumour in 96% of cases. Doppler studies have a sensitivity of 92% and a specificity of 52% with a higher predictive value when combined with transvaginal ultrasonography[5]. Only 50% of women presenting with a stage -1 ovarian cancer had raised serum concentration of CA125 ovarian cytology, if performed under optimum conditions, is reliable in detecting malignancy[6]. Data have suggested that aspiration of malignant cyst does not affect survival rates at five and ten years[7]. Many authors have recommended expectant management in young and adolescent women. Treatment is indicated if diagnosis is in question, the cyst persists, or the patient is symptomatic[8,9]. Brun JL has preferred conservative management over surgical treatment if cyst is anechoic and diameter is less than 5cm with normal doppler and CA125 serum level[10]. The diagnosis of ovarian cyst provokes anxiety among women particularly in our eastern society and they often visit doctors with predetermination that delay in surgical removal will result in malignancy. Surgical procedure on ovaries may interfere with subsequent fertility and can increase risk of ectopic pregnancy and premature ovarian failure. It also imposes burden on health economics and directly brings cost to the patient. The fact is that, simple cysts usually do not become malignant while risks of surgery and the cost of treatment may be the other considering factors in order to avoid over-treatment. Vaudoyer F has strongly favored conservative surgery in pre-menopausal women[11]. This study describes, histopathological profile of the oophorectomy specimen obtained from women of different age groups and classified them according to their sizes. The aim of the study was to describe the size and relevant histopathological type of cysts in relevance to different age groups undergone oophorectomy. Furthermore the results of this study would be

helpful in making guidelines for surgical option in cases of ovarian cysts

METHOD AND MATERIAL

A case series of 316 oophorectomy specimen sent during last 10 years for histopathology were studied. Women were categorized according to their ages as less than 20 years, 20-27, 28-35, 36-43 and more than 43. Ovarian cysts were further classified into three groups according to their sizes that is less than 5cm, 5-10cm and of more than 10cm. Each group of cysts was analyzed in different age groups to find out the rate of malignancy and complications. Cases where oophorectomy was done along with hysterectomy were not included in the study. The data were entered on SPSS version 11.0 and distribution of the cysts was described in relation to size, complications and morphology of the cysts.

RESULTS

The mean±SD age of the women undergone oophorectomy was 28.3±8.46 where on cumulative basis, 85% of the females were of less than 35 years. Out of the total 316 specimen, 94% were unilateral and 40.8% were between 5 and 10 cm. For all sample, it was noted that 22.8% were corpus leuteum followed by 17% each of follicular cysts and serous cyst adenoma **(Table I)**. Among the bilateral, 85% of the cysts were <5cm , 10% 5-10cm and 5% as of >5cm. Regarding morphology, 50% were follicular cyst, 25% were corpus leutum, 10%each of endometriosis and serous cystadenoma while mucinous cystadenoma accounts for 5% of bilateral tumors. One out of 20 bilateral was malignant. It was found that 28.7% presented with complications, of which hemorrhage was the commonest reported complication. The size of the cysts was significantly associated with histopathology (p<.04) and evidence of complications (p<.049) but not with malignant nature of cyst. Cysts of lesser size complicate more as compared to larger ones. Proportion of complications is a little greater in less than 20 yr with 33%, followed by 32% and 22% respectively in 28-35 and 20-27 yr group. Majority of the cysts detected in reproductive age group were of 5-10cm in 40.8% followed by smaller cysts (less than 5cm) which were found in 35.8% cases. Large cysts (>10cm) were found in only 22.8% cases. Maximum number of cysts (40%) was found in age group 20-27, followed by 33% in age group 28-35 years. In females of less than 20 years, 41.90%presented with size more than 10 cm as compared to 40% of females between 27-35 yr with 5-10cm and size of the cysts showed marginal significance with that of age of the patients **(Table II)**.

TABLE I:
CHARACTERISTICS OF OVARIAN CYSTS

Characteristics	Options	Frequency (%)
Site n=316	unilateral	296 (93.7)
	Bilateral	20 (6.3)
Type n=316	Benign	304 (96.2)
	Borderline	4 (1.3)
	Malignant	8 (2.5)
Morphology/ Histopathology	Corpus leuteum	72 (22.8)
	Serous cystadenoma	55 (17.4)
	Endometriosis	45 (14.2)
	Follicular cyst	56 (17.7)
	Mucinous cystadenoma	24 (7.6)
	Dermoid	33 (10.4)
	Adeno fibroma	5 (1.6)
	Ovarian cyst	25 (7.9)
	Para ovarian cyst	1 (.3)
Size n=314	Less than 5cm	113 (35.8)
	5-10	129 (40.8)
	More than10	72 (22.8)
Complications	Hemorrhage	70 (76.9)
	Torsion	1 (1)
	Hemorrhage with oophoritis	3 (3.3)
	oophoritis	5 (5.5)
	Hemorrhage and torsion	10 (11)
	Tuberculosis	1 (3.3)
	Rupture	1 (3.3)

TABLE II:
RELATIONSHIP OF SIZE OF CYSTS WITH AGE (n=296)

Age Years	Size of Cysts				
	>5 cm	5-10 cm	> 10 cm	Total	P value
<20	9	9	13	**31**	.051
20-27	42	53	24	**119**	
28-35	36	40	22	**98**	
36-43	10	14	5	**29**	
>43	5	8	6	**19**	
Total	**102**	**124**	**70**	**296**	

It was found that 5 out of 248(2%) cysts in less than 35 yr were malignant as compared to 2 out of 48(4%) in older age groups.

DISCUSSION

We found unilateral benign cysts as the most frequent ovarian tumors in the reproductive age group. The same reported by Nowak M et al where they analyzed type and localization of ovarian tumors in reproductive age group of women and discovered benign cysts in 79.5% cases[12]. In this study of ten years, follicular cysts were the commonest findings on histopathology. In a retrospective study performed in early 1980s, Grimes DA also found that functional cyst was the ultimate diagnosis in 66% of all ovarian tumors requiring laparotomy[13]. Fatima Z found benign masses in 78% and malignant in 22% cases. However she found that 66% ovarian masses were of epithelial origin and only 16% were functional cysts[14]. This difference might be explained by considering the fact that all these cases were managed in a teaching hospital whereas we analyzed specimen received from all over Karachi with patients undergoing surgery in various clinical setups. In our series, serous cyst-adenoma was the commonest non-functional cyst followed by endometrioma, dermoid cyst and mucinous cystadenoma. Our findings are in agreement with Raiga J who found that majority of ovarian cysts were functional. Among nonfunctional cysts most common were serous and mucinous cystadenomas, endometriomas, and dermoids[15]. Our findings are also in agreement with Zohra K. She found that 85% ovarian cyst were benign, 13 % cyst were malignant while 2% were borderline malignant[16]. Bilaterality is generally considered an ominous sign. It was revealed in our sample that 19 out of 20 bilateral tumors were benign. An analysis of literature has shown that for operated cysts, approximately 75% are organic, 25 % are functional and 1% to 4% of supposed benign cysts were later found to be malignant. According to data from France, 20% to 30% of operated cysts were serous and mucinous cysts and 10-20% dermoid cysts[17-19]. Expectant management may spare women unwarranted intervention. The diameter of the cyst is the only independent significant parameter predicting the outcome of the problem. De Silva KS and others found that in post pubertal girls, lesions less than 5cm were significantly more likely to be non-neoplastic.[20] Many others also found that borderline cases were to be considered as malignant and to be managed accordingly.[21-23] This study showed somewhat different results and the size of the cysts was significantly associated with histopathology and complications but not with malignant nature of the cyst. Moreover, cysts of lesser size found to have more complications as compared to larger ones and fairly depend on age at presentation. This highlights the need that our care providers must be acquainted with this distribution and take conscientious decision while opting for oophorectomy particularly in young females.

CONCLUSION

In young women most cysts were found to be benign and conservative approach is to be chosen. Despite of larger size of cysts in young females, the rate of malignancy is half as compared to rate of malignancy in middle age group. It is recommended that if spontaneous resolution does not occur after 3-6 months, needle aspiration and cytology may be performed. In case of recurrence or obvious malignancy, surgery should be offered. Furthermore it is emphasized that majority of the cysts are benign, therefore, as much ovarian parenchyma as possible should be preserved in these cases.

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