Surgical variables analysis of 116 cases of ovarian cystic diseases in Al-Elwiya maternity teaching hospital at 2013

Samer F. Hasan*, Harith S. Hasaani **, Jamal R. Abd AL-Hameed*

ABSTRACT

Background: The treatment of an ovarian cyst relies on its nature, the discrimination of benign and malignant cysts is, therefore of crucial importance, and in spite of the continuous improvement of diagnostic means, it remains sometimes impossible to differentiate functional from organic (malignant or not) ovarian cysts. The therapeutic decision will search for the main midway between cancer's negligence and the fear of performing an unnecessary surgical operation for an ovarian cyst.
Objective: To review of 116 cases of ovarian cystic diseases aiming in identify proper management and reducing unnecessary surgical intervention.
Methods: A retrospective study was conducted at Al-Elwiya maternity teaching hospital/ Baghdad/ Iraq. One hundred sixteen women underwent surgery for ovarian cystic diseases between January 2010 and December 2011. Age, menopausal status, referral history, clinical features, diagnostic methods, treatments and histopathological results were recorded and the collected data was arranged in tables for analysis.
Results: From One hundred sixteen women, One hundred five (90.5%) were premenopausal and eleven (9.5%) were postmenopausal. Thirty two women (27.6%) underwent laparoscopic evaluation for Ovarian cystic diseases, while eighty four (72.4%) were candidates for laparotomy. Benign pathological conditions were found in thirty six (31%) pre-menopausal women and three (2.6%) post-menopause. The functional cysts presented in sixty of the cases (51.7%), Fifty five (47.4%) were premenopausal and five (4.3%) postmenopausal.
Conclusion: There is difficulty in accurate discrimination between types of ovarian cysts In Iraq and we recommend to use risk of malignancy index (RMI) as a simple diagnostic tool that provide to discriminate between malignant and benign ovarian cysts.
Keywords: Ovarian cystic diseases, risk of malignancy index (RMI).

The treatment of an ovarian cyst relies on its nature, the discrimination of benign and malignant cysts is, therefore of crucial importance, and in spite of the continuous improvement of diagnostic means, it remains sometimes impossible to differentiate functional from organic (malignant or not) ovarian cysts. The therapeutic decision will search for the main midway between cancer's negligence and the fear of performing an unnecessary surgical operation for an ovarian cyst[1].

As the 'gate keepers' of the health care system in many parts of the world, primary care (family) physicians or general practitioners (GPs) are the first to see women with many gynaecological problems. They must decide which patients will need investigation and at what point during investigation and treatment they will refer to specialists[2]. There are different types of Treatment options for ovarian cystic diseases[3].

The management of an ovarian cyst depends on a combination of several factors including age and menopausal status, symptoms, ultrasonographic features, unilateral/bilateral findings, size of the mass, and the level of serologic markers[1].

Unfortunately, symptoms of ovarian cancer are vague and screening is poor, most patients are first seen with advanced disease. Even if blood levels of CA-125 provide a sensitive test, but it lacks the specificity needed for screening as a number of other conditions can result in elevated levels, including endometriosis. The aim of this study was to identify proper management and reducing unnecessary surgical intervention.

Methods A retrospective study carried out at Al-Elwiya Maternity Teaching Hospital, data was collected f.rom medical records of 116 women who were admitted and underwent surgery for ovarian cystic diseases during the period between January 2010 and December 2011. All surgical procedures were performed, and samples of removed cyst were sent for histopathological examination.

Data collection began from the eleventh of January, 2011 until the fourth of June, 2012. The data collected was age of the patients, menopausal status, referral history, if the patient was referred from Primary health care , accident and emergency or others, clinical features, diagnostic methods including imaging tools or laboratory tests, treatments and type of surgical interventions and histopathological results were recorded and analyzed.

Postmenopausal status was defined as: 1. more than one year of amenorrhea. 2, age older than 51 years. 3, Women who had a hysterectomy.

Women who did not meet these criteria were classified as premenopausal. The patients are divided into premenopausal and postmenopausal women and types of ovarian cyst according to histopathological result that involve benign and functional cyst in addition to malignant cysts.

P-Value was performed, and the statistical significance considered when chi- square less than 0.05.

Results. From One hundred and sixteen patients, (105) women (90.5%) were premenopausal and (11) women (9.5%) were post-menopausal as shown in table 1.
Those younger than 30 years constituted fifty three (45.7%) of study sample and those 50 years and older represented (6.9%) as shown in figure. 1.

Those referred from Primary Health care were fourteen women (12.1%) as shown in Figure 2. There are different percentages of ovarian cystic diseases between pre and

post-menopausal women and table 2 shows the percentage of benign Cysts was significantly higher than malignancy in thirty six pre-menopausal women (31%), and in three post-menopause(2.6%). The histological findings of ovarian cystic disease shown in figure 3. The distribution of the study sample according to the type of cysts diagnosed by X-Ray, MRI and CT scan shown in figure 5. The distribution of the study sample according to the type of surgery shown in table (3). Table (4) and fig. (6) show the distribution of study sample according to ultrasound findings. Benign cysts in thirty six pre-menopausal women (31%) and p- value (0.34) not significant,

Table 1: Distribution of the study sample according to the age and menopausal status.

|	Functional		Benign Tumor		Malignant		Inflammation		PCOD		Normal		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1. Age groups (years)														
<30	33	28.4	13	11.2	0	0	1	0.9	4	3.45	2	1.7	53	45.7
30-39	18	15.5	15	12.9	0	0	3	2.6	0	0	1	0.9	37	31.9
40-49	5	4.3	8	6.9	2	1.7	2	1.7	1	0.86	0	0	18	15.5
50+	4	3.4	3	2.6	1	0.9	0	0	0	0	0	0	8	6.9
2. Menopausal status														
Premenopausal	55	47.4	36	31.0	1	0.9	5	4.3	5	4.3	3	2.6	105	90.5
Postmenopausal	5	4.3	3	2.6	2	1.7	1	0.9	0	0	0	0	11	9.5
Total	60	51.6	39	33.6	3	2.6	6	5.2	5	4.3	3	2.6	116	100%
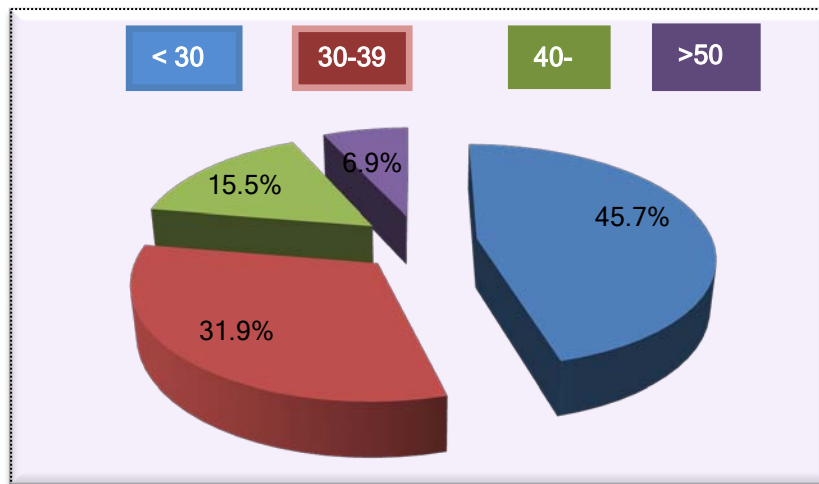
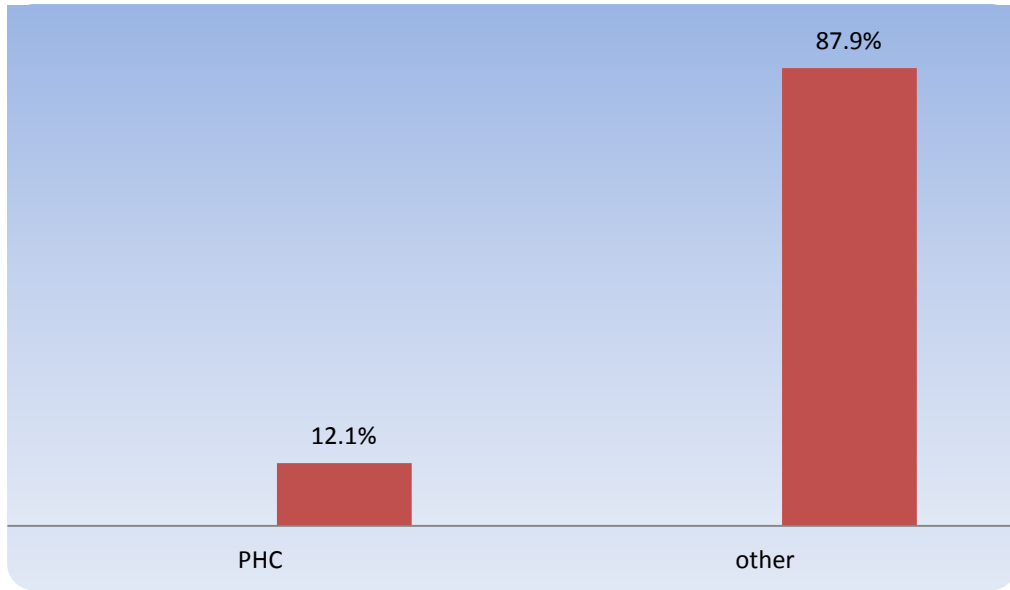**Figure 1**: Age groups (years).
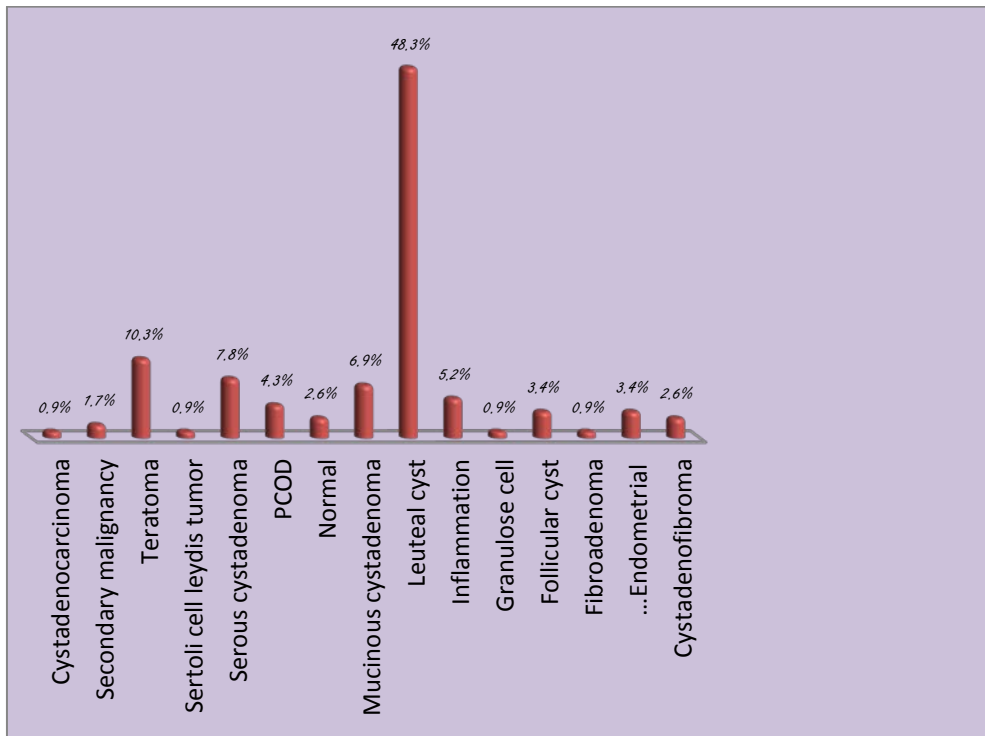
Figure 2: Referral percentage.

Figure 3: the histological findings of ovarian cystic disease.

Table 2: Type of Diseases.

|	105 Premenopausal women (90.5%)			11 Postmenopausal women (9.5%)		p value	Total
	N	%	p value	N	%		No.
Functional cyst	55	47.4	0.34	5	4.3	0.68	60
Follicular cyst	4	3.4	0.33	0	0	0.67	4
Leuteal cyst	51	44	0.43	5	4.3	0.85	56
Benign	36	31.0	0.34	3	2.60	0.68	39
Endometrial cyst	3	2.6	0.19	1	0.9	0.38	4
Serous cystadenoma	8	6.9	0.41	1	0.9	0.81	9
Mucinous cystadenoma	8	6.9	0.22	0	0	0.44	8
Teratoma	12	10.3	0.14	0	0	0.28	12
Cystadenofibroma	3	2.6	0.37	0	0	0.74	3
Granulose cell	0	0	0.05	1	0.9	0.10	1
Fibroadenoma	1	0.9	0.45	0	0	0.91	1
Sertoli cell leydis tumor	1	0.9	0.45	0	0	0.91	1
Malignant	1	0.9	0.01	2	1.72	0.02	3
Cystadenocarcinoma	0	0	0.05	1	0.9	0.10	1
Secondary malignancy	1	0.9	0.10	1	0.9	0.20	2
PCOS	5	4.3	0.30	0	0	0.60	5
Inflammation	5	4.3	0.28	1	0.9	0.56	6
Normal	3	2.6	0.36	0	0	0.73	3
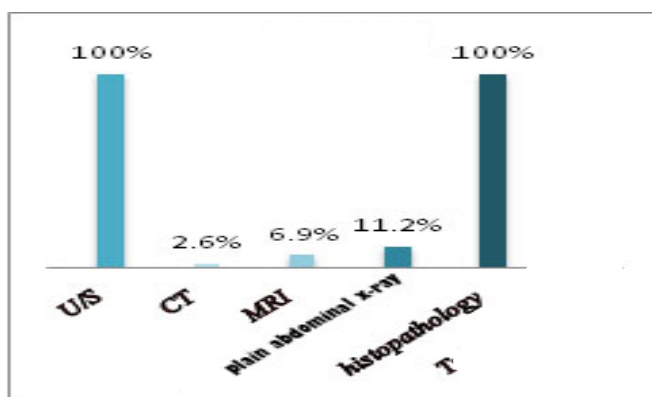
Figure 4: Diagnostic tools.
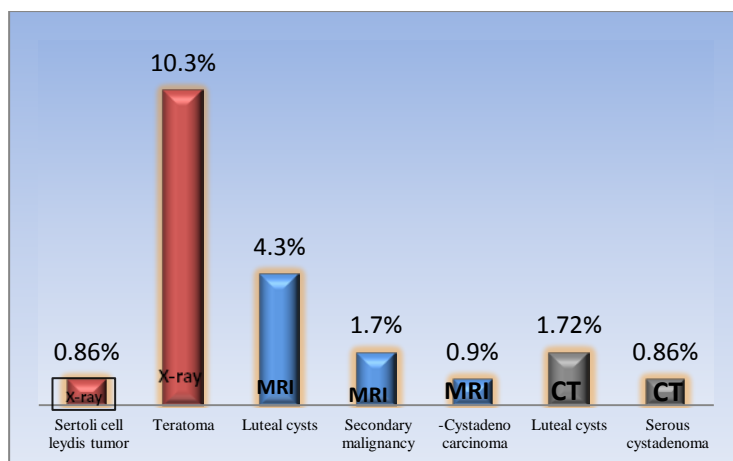
Figure 5: Types according to imaging tools

Table 3: Type of ovarian cystic diseases.

	Laparoscopy		Laparotomy	
	N	**%**	**N**	**%**
Cystadenofibroma	2	1.7	1	0.9
Endometrial cyst	0	0	4	3.4
Fibroadenoma	0	0	1	0.9
Follicular cyst	3	2.6	1	0.9
Granulose cell	1	0.9	0	0
Inflammation	0	0	6	5.2
Luteal cysts	20	17.2	36	31
Mucinous cystadenoma	1	0.9	7	6
Normal	2	1.7	1	0.9
PCOD	2	1.7	3	2.6
Serous cystadenoma	1	0.9	8	6.9
Sertoli cell leydis tumor	0	0	1	0.9
Teratoma	0	0	12	10.3
Secondary malignancy	0	0	2	1.7
Cystadenocarcinoma	0	0	1	0.9
Total	32	27.6	84	72.4

Table 4 : Type of ovarian cystic diseases.

	<50mm		≥50mm		simple		multilocular		unilocular		haemorrhagic	
	N	%	N	%	N	%	N	%	N	%	N	%
Cystadenofibroma	0	0	3	2.6	0	0	2	1.7	1	0.9	0	0
Endometrial cyst	0	0	4	3.4	0	0	0	0	0	0	0	0
Fibroadenoma	0	0	1	0.9	0	0	0	0	0	0	0	0
Follicular cyst	4	3.4	0	0	4	3.4	0	0	4	3.4	0	0
Granulose cell	0	0	1	0.9	0	0	0	0	0	0	0	0
Inflammation	1	0.9	0	0	0	0	0	0	1	0.9	0	0
Luteal cysts	25	21.6	31	26.7	26	22.4	29	25.0	26	22.4	28	24.1
Mucinous cystadenoma	0	0	8	6.9	1	0.9	7	6.0	1	0.9	0	0
Normal	0	0	0	0	0	0	0	0	0	0	0	0
PCOD	0	0	0	0	1	0.9	0	0	1	0.9	0	0
Serous cystadenoma	0	0	9	7.8	9	7.8	8	6.9	1	0.9	0	0
Sertoli cell leydis tumor	0	0	1	0.9	0	0	0	0	0	0	0	0
Teratoma	0	0	12	10.3	0	0	0	0	0	0	0	0
Secondary malignancy	0	0	0	0	0	0	0	0	0	0	0	0
Cystadenocarcinoma	0	0	1	0.9	0	0	0	0	0	0	0	0
	30	25.9	71	61.2	41	35.3	46	39.7	35	30.2	28	24.1
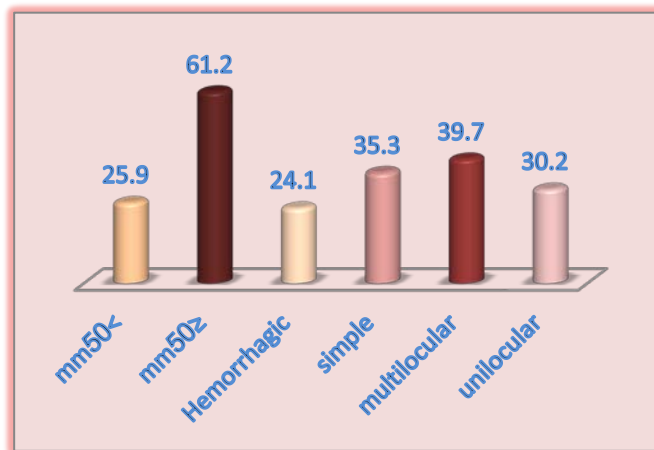
Figure 6: Ultrasonographic features.

Discussion. Ovarian cystic disease remain one of the common diagnostic entity in the population of women who are attending the primary health care and gynecological department. Olson et al. at 2001[10]. A preoperative ultrasound examination is done because it is simple, non invasive and available in all centers. X-Ray may performed in certain condition. Most studies using magnetic resonance imaging (MRI) and CT as diagnostic tools to differentiate between benign and malignant masses [11, 12].

Fifty five (47.4%) cases of functional cysts were Premenopausal women, while five (4.3%) cases were postmenopausal women. Percentages of leuteal cysts in this study was (48.3%)and this agree with Leslie R. Boyd et al. in the United States of America at 2009 [3], who found that enlarged follicles as well as corpora lutea make up the majority of functional cysts and in most cases, they resolve without treatment within the first three months after detection, but a mass with suspicious aspects will require removal.

According to a study conducted in Spain Department of Public Health by Pascual et al. at 1997[13], the diagnosis of functional ovarian cyst is possible in 97.8% of cases before surgery; Conservative management of small, simple, asymptomatic ovarian cysts has been advocated because several studies have demonstrated that the majority are functional changes that will resolve spontaneously [14].

For all samples of removed cysts, histopathologic examination was performed and revealed the incidence of benign cysts was significantly higher than malignancy. The while in three post-menopause (2.6%) and p- value is not significant. Teratoma represented

Teratoma represented (10.3%) in our study, and according to Leslie R. Boyd et al. at 2009 [3], the benign cystic teratoma, or dermoid tumor, is the most common neoplasm in women of reproductive age, but we have to take the sample size in our study into account.

In this study only fourteen patients (12.1%) were referred from Primary Health and this depend on the patients access rate to a primary health care centers. Finding also suggest the diagnosis of ovarian cystic diseases is often delayed because of the non-specific nature of symptoms, patient self neglect, inappropriate management, lack of technical facilities to support diagnostic and curative medicine, lack of specific and accurate diagnostic tests, that is CA125 and ultrasound. Also delayed or inaccurate communication between hospital-based and primary care physicians at hospital discharge may negatively affect continuity of care and follow-up. The family physician has to be implemented properly in the management of ovarian cystic disease, by using RMI as diagnostic criteria for women with ovarian cystic diseases, and candidates for referral.

Best Practice in Primary Care Pathology: Review 14 at 2012 provides an overview of current advice in use of laboratory tests in primary care[16]. It concentrates on the use of tumour markers for screening and diagnosis of cancer and also consider the utility of tumour makers in the monitoring of disease. Hopefully, discrimination between benign and malignant cysts can be improved, to avoid unnecessary surgery for functional cysts, and to elect the right management program for women with ovarian cystic diseases.

In conclusion, There is difficulty in accurate discrimination between types of ovarian cysts In Iraq and we recommend to use risk of malignancy index (RMI) as a simple diagnostic tool that provide a qualitative assessment to discriminate between malignant and benign ovarian cysts.

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