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A Case Series on Bilateral Adnexal Masses

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I. Introduction

The term adnexa is derived from the pleural form of the Latin word "adnexus*" which means "Appendage".1 The* adnexa of the uterus include the ovaries, fallopian tubes and the structures of the broad ligament. Any mass arising from the ovary, fallopian tubes, or surrounding connective tissues, is defined as an adnexal mass but other pelvic masses may also clinically present as an adnexal mass(Paratubal cysts, hydrosalpinx, and other non ovarian masses are also included).2 They represent a diagnostic dilemma to the clinician because of wide variety of etiologies. The differential diagnosis of adnexal mass includes benign and malignant gynaecologic and non gynaecological etiologies (Table 1) Adnexal masses have to be further evaluated throughly as adnexal malignancy often goes undiagnosed and women usually presents with advance disease. Ovarian cancer is the leading cause of death from gynecologic malignancy. It is the fifth leading cause of cancer death in women in the United States, accounting for 15,280 deaths in 2007.3,4 The risk of ovarian cancer increases steadily with age, with the greatest risk occurring after menopause. There is a 1.42 percent lifetime risk of dying from ovarian cancer.3

There is no effective screening method for ovarian cancer that has been shown to significantly improve clinical outcomes.

Therefore, the goal of evaluation is early differentiation between benign and malignant condition and timely management.

Table 1

Differential Diagnosis of Adnexal Masses

Gynecologic	Nongynecologic
Benign ovarian	**Benign**
• Corpus luteum cyst	• Appendiceal abscess
• Follicular cyst	• Appendicitis
• Luteoma of pregnancy	• Bladder diverticulum
• Mature teratoma	• Diverticular abscess
• Ovarian torsion	• Nerve sheath tumor
• Polycystic ovaries	• Pelvic kidney
• Serous and mucinous cystadenoma	• Peritoneal cyst
• Theca-lutein cyst	• Ureteral diverticulum
Malignant ovarian	**Malignant**
• Borderline tumors	• Gastrointestinal carcinoma
• Epithelial carcinoma	• Krukenberg tumor (signet cell adenocarcinoma arising from the gastrointestinal tract with metastasis to the ovary)
• Ovarian germ cell tumor	• Metastasis from breast, colon, etc.
• Ovarian sarcoma	• Retroperitoneal sarcomas
• Sex-cord or stromal tumor	
Benign nonovarian	
• Ectopic pregnancy	
• Endometrioma	
• Hydrosalpinx	
• Leiomyoma	
• Tubo-ovarian abscess	
Malignant nonovarian	
• Endometrial carcinoma	
• Fallopian tube carcinoma	

II. Aims And Objectives

The aim was to study the incidence of Bilateral adnexal masses in women presenting in gynaecological OPD at SMS Medical college, Jaipur. To see the correlation of adnexal masses with age, imaging findings and histopathological report.

III. Material And Methods

It was a hospital based observational study, done in the Department of Obstetrics & Gynaecology, S.M.S. Medical College, Jaipur from dec 2015 to nov 2016. 50 women of any age group where adnexal mass detected at time of routine pelvic examination or at the time of ultrasonography [transabdominal and transvaginal sonography] done for other diagnosis were included in this study after informed and written consent. *The following cases were excluded from the study*

1. Women on ovulation induction drugs. 2. Masses arising from urinary tract and gastrointestinal tract. 3. Suspected Malignant cases, as those patients were referred to the regional cancer speciality institute for better management.

4.Women with pregnancy.

5. Chronic illness like hypertension, diabetes, renal and kidney disease, any cardiac disease, h/o of malignancy, h/o pelvic surgery were excluded from the study. A detailed history including a detailed menstrual, obstetric and medical history of each patient was taken. General, physical, systemic, pelvic examination was done. Clinical and Transabdominal and Transvaginal ultrasonographic evaluation of adnexal masses was performed. All the cases were subjected to transabdominal ultrasonography with full bladder technique with 3.5MHz probe and then transvaginal sonography with empty bladder technique with 6.5MHz probe examination. Investigations including ovarian markers i.e. S.CA125, S.CEA, S. Beta HCG, S. LDH, S. Alfa-fetoprotein were done. All these women underwent laparoscopy, laparotomy f/b removal of masses or abdominal hysterectomy and all the histopathological reports in those patients were recorded.

IV. Observation And Discussion

At this time, there are no accepted effective screening tests to identify women with ovarian cancer, partly because of the low prevalence of ovarian cancer in the general population5 and the inherent biology of the cancer.6,7 So, to determine the diagnostic and management strategy for the woman identified to have an adnexal mass, we triaged risk for malignancy by carefully considering the following context for each individual patient i.e. the age, ultrasound findings, CA125 levels. Then they were divided into three categories- low risk group, intermediate group and high risk group and were management accordingly.

V. Age

It is the most important independent risk factor for epithelial ovarian cancer. Adnexal masses occur most commonly in reproductive age group but the risk of malignancy increases with age. Epithelial ovarian cancer is infrequent in women younger than 40 years of age9,10,11,12. Incidence and mortality increase sharply after menopause;the average age at diagnosis is 60 years, and a peak rate of 57 per 100,000 women is seen in their early 70s11,12. In postmenopausal women, 30 percent of adnexal masses are malignant.13

Agewise Incidence Of Bilateral Adnexal Masses

s.no	AGE(IN YEARS)	AGE GROUP	NO. OF CASES	PERCENTAGE
1	16-30 YEARS	REPRODUCTIVE GROUP	28/50	56%
2	31-50 YEARS	PREMENOPAUSAL GROUP	16/50	32%
3	>50 YEARS	MENOPAUSAL GROUP	6/50	12%
	TOTAL	50		100%

Therefore, in our study adnexal masses were most commonly reported in reproductive age group i.e.56% .A study by KhanS has shown an prevalence of ovarian masses to be 7.8% in premenopausal patients compared to 2.5% prevalence in the postmenopausal women which was in support of our study.8

Ultrasound:

Despite advances in technology, gray-scale transvaginal ultrasonography remains the standard for the evaluation of adnexal masses.15,16,17. Ultrasonography should assess size, mass characteristics (cystic, solid, or both), complexity (internal septae, excrescences [a disfiguring addition], and papillae), and the presence or absence of abdominal or pelvic fluid (ascites or blood).

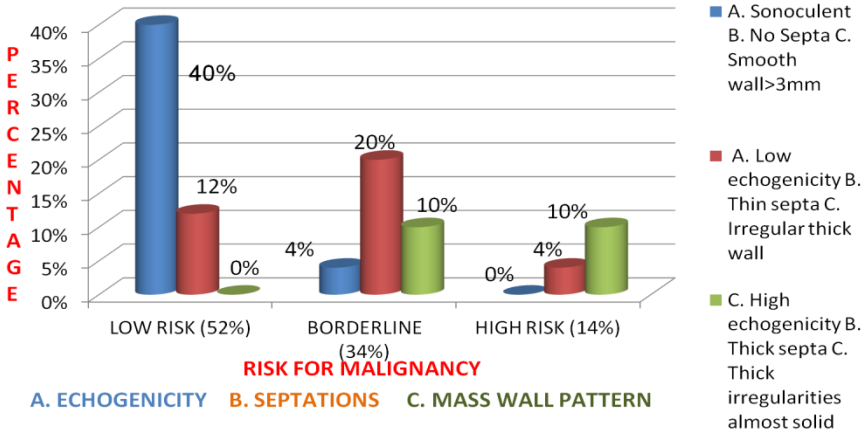
Abdominal Usg Finding

S.NO	SIZE	BENIGN (simple cystic unilocular)	MALIGNANT (complex solid multilocular)	PERCENTAGE
1	<3CM	26(100%)	0	26/50(52%)
2	3-5CM	13/15(86.67%)	2/15(13.33%)	15/50(30%)
3	>5CM	4/9(44.44%)	5/9(55.56%)	9/50(18%)
	TOTAL	43/50(86%)	7/50(14%)	50/50

Therefore, in our study abdominal usg showed that 86% of adnexal masses were benign and 14% of the masses were malignant.A study showing sonographic scoring of the ovarian lesion appears to have high sensitivity (89-100%) and specificity (73-83%), moderate positive

Sonographic Variables

predictive value(37-46%) and excellent negative predictive value (96-100%).14predictive value(37-46%) and excellent negative predictive value (96-100%).14 **Our study showed sensitivity of 71% and specificity of 73.33% with positive predictive value of 71% and negative predictive value of 73% in detecting malignant lesions**

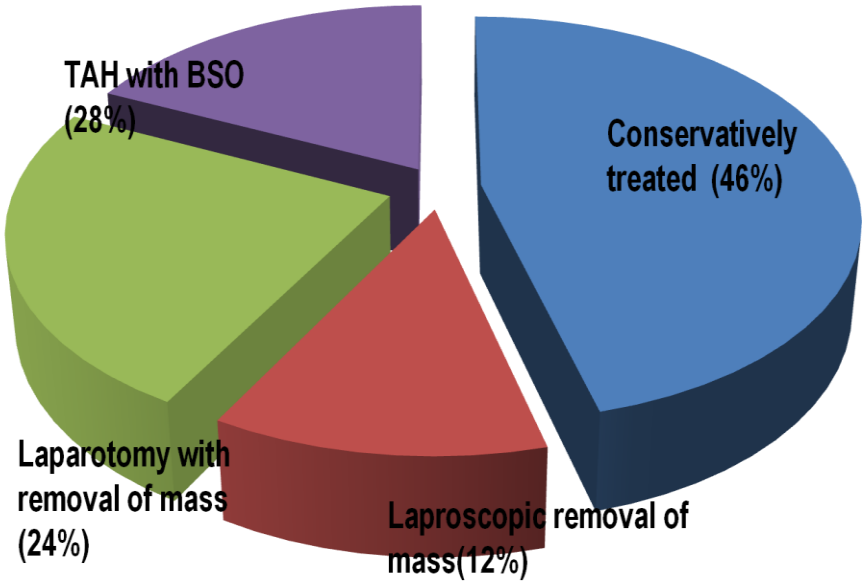


Ovarian Markers: The most extensively investigated serum marker for ovarian cancer is the CA 125. Tissues derived from coelomic epithelium produce the antigen CA 125, and serum levels of this antigen are elevated in 80% of women with epithelial ovarian cancer.18 The CA 125 antigen values can be elevated in a number of Unrelated gynecologic and nongynecologic conditions. As such, it has a low specificity especially in premenopausal women. In Premenopausal women with a pelvic mass, the positive predictive value at cut-off thresholds more than 65 units/mL was 49%, with specificity and positive predictive values significantly higher at higher CA 125 cut-offs and in the postmenopausal population.19 The Sensitivity of the CA 125 is also limited in that it is elevated in only 50% of stage I epithelial ovarian cancer. But data suggest the specificity increases when combined with transvaginal ultrasonography or when levels are followed over time20,21.

S.NO	OVARIAN MARKERS	LOWER THAN NORMAL	HIGHER THAN NORMAL
1	CA125	14 (28%)	36 (72%)
2	CEA	44 (88%)	6 (12%)
3	LDH	30 (60%)	20(40%)
4	ALFA-FETOPROTEIN	38 (76%)	12 (24%)
5.	BETA-HCG	28 (56%)	22 (44%)

Therefore, in our study CA125 was have higher values in 36% of cases. So, it showed low sensitivity of 8.5%, moderate specificity of 85% , very low positive predictive value of 8.5% and good negative predictive value of 85%.

Treatment:



Therefore on the basis of our study, we divided our study group into 3 parts- **Low risk adnexal masses-** IN which age, abdominal sonography and CA125 levels demonstrated an adnexal mass with a low probability of malignancy. This group underwent conservative treatment. **Intermediate high adnexal masses-** In the group, the age of the patient , abdominal sonography and CA125 levels showed intermediate risk of malignancy. This group was treated with laproscopic or laparotomy removal of mass. **High risk adnexal masses-** In this group the ae of patient, the abdominal sonography and CA125 showed high risk of malignancy. In this group all patients were treated with Total abdominal hysterectomy with bilateral salpingoophrecetomy

Histopathological findings:

S.no	TYPE	<3CM	3-5CM	5CM	TOTAL	%
	OVARIAN	**13**	**13**	**14**	**42/50**	**84%**
A.	**BENIGN**	**13**	**11**	**12**	**38/50**	**76%**
1	FUNCTIONAL FOLLICULAR CYST	6	4	4	14/50	28%
2.	BENIGN MATURE TERATOMA	4	4	2	10/50	20%
3.	CORPUS LUTEAL CYST	2	1	1	4/50	8%
4.	ENDOMETRIAL CYST	1	1	0	2/50	4%
5.	SEROUS CYST ADENOMA	0	0	1	1/50	2%
6.	MUCIOUS CYST ADENOMA	0	0	2	2/50	4%
7.	FIBROMA	0	0	1	1/50	2%
8.	TWISTED OVARY CYST	0	1	1	2/50	4%
	MALIGNANT	**0**	**2**	**2**	**4/50**	**8%**
1.	DYSGERMINOMA	0	0	1	1/50	2%
2.	PAPILLARY SEROUS ADENOCARCINOMA	0	1	1	2/50	6%
3.	IMMATURE TERATOMA	0	1	0	1/50	2%

S. no	TYPES	<3CM	3-5CM	5CM	TOTAL	%
	FALLOPIAN TUBE	**3**	**3**	**1**	**7/50**	**14%**
	BENIGN	**3**	**3**		**6/50**	**12%**
1.	HYDROSALPINX	2	2	0	4/50	8%
2.	ECTOPIC PREGNANCY WITH CYST	1	1	0	2/50	4%
	MALIGNANT	**0**	**0**	**1**	**1/50**	**2%**
1.	PAPILLARY SEROUS ADENOCARCINOMA OF TUBES	0	0	1	1/50	2%
	PEDUNCULATED LEIMYOMAS	**0**	**1**		**1/50**	**2%**

VI. Discussion

90% (45/50) of the cases turned out to be benign and 10% (5/50) came out to be malignant. 84% (42/50)of the cases turned out to be of ovarian causes and 14% (7/50) of the cases turned out to be of fallopian tube causes and 2% (1/50) of the cases turned out to be due to other causes. Ovarian causes contributed to 80% of malignant cases(4/5) and fallopian tubes contributed to 20% (1/5). Out of ovarian masses, most common type turned out to be functional follicular cyst 28% of total cases (14/50)

And 2nd most common type of ovarian mass turned to be immature cystic teratoma i.e. 20% of total cases (10/50).

VII. Conclusion

Evaluation of adnexal masses is a challenge for the gynaecologists. The majority of adnexal masses are benign, with only a subset representing malignant processes. It is important not miss a malignant mass and at the same time not to over treat an entirely Benign pathology. Hence a multifaceted diagnostic approach should be used for a definite diagnosis and management of adnexal mass. In case a clear cut diagnosis cannot be made inspite of using all Diagnostic modalities, it is advisable to use a surgical approach so as to get the tissue for histopathological evaluation.

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