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Research Paper

Clinico-Pathological Correlation of Adnexal Masses in Tertiary Care Centre

Medical Science

KEYWORDS : Adnexal mass, USG ,histopathology

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ABSTRACT

AIMS AND OBJECTIVES

1. To study the prevalence of adnexal masses in women attending the gynecological OPD in our hospital.

2. To correlate the clinical diagnosis with the radiological and histopathoogical diagnosis.

MATERIALS AND METHOD

The present prospective study was conducted during 1st June 2012 to 31st September 2013 in department of obstetrics and gynecology NSCB Medical college Jabalpur attending the gynec OPD. After taking consent of patients with adnexal mass , history, clinical examination and ultrasound proforma was filled and patient underwent surgery. Intra-operative findings were noted ,histopathological sample sent, then the findings correlating clinical, radiological and pathological noted.

RESULTS

The prevalence of women requiring surgery for adnexal masses were 2.27% and patients that underwent surgery were 12.18%. prevalence of women among outpatients is 0.433% and among inpatients is 2.3%.

CONCLUSION

We conclude that ultrasound is invaluable technique in determining nature of adnexal masses but the gold standard remains the surgery and histopathological findings.

INTRODUCTION

Uterine adnexa consist of ovaries , fallopian tube and the uterine ligament. The prevalence of adnexal masses is 0.17% to 5.9% in asymptomatic and 7.1% to 12% in symptomatic patients.[1]. The definition of an abnormal structure on radiological imaging is also quite variable. For the purposes of this report, we consider any structure observed during radiologic imaging that prompts additional evaluation (such as measurement of serologic markers or further imaging as a mass.

These are the 3 main clinical routes by which an adnexal mass may be detected.

1. Women with symptoms may have an adnexal mass detected as part of their evaluation for those symptoms , either by physical examination or radiological imaging.
2. The mass may be detected as part of a routine health maintainence examination.
3. It is possible that an asymptomatic mass could be detected during imaging done for another indication.

CONDITIONS THAT CAN PRESENT AS AN ADNEXAL MASS INCLUDE GYNECOLOGICAL

- Primary ovarian mass
- Masses arising from the fallopian tube – hydrosalpinx and pyosalpinx, primary fallopian tube malignancies.
- Masses arising from remanents of embryological development
- Endometriosis
- Follicular cysts and corpus luteal cysts
- Masses arising from uterus- like benign leiomyomas.

NON GYNECOLOGICAL (which are excluded)

- Masses arising from the gastrointestinal tract - diverticula of thecolon, large colonic tumors, tumors of the appendix.
- Masses arising from the urinary tract - pelvic kidneys, diverticula.

Most frequently, adnexal masses refer to the ovarian masses or cysts; however, paratubal cysts, hydrosalpinx, and other non-ovarian masses are also included.[2]

Proper oncological treatment of patients with adnexal masses depends on appropriate preoperative discrimination between benign and malignant ovarian tumors[3]. Malignant ovarian tumors are associated with highest mortality rate of all gynecological cancers[4]. Sixty per cent of women are diagnosed at an advanced stage, which has a 5-year survival as low as 10%. On the other hand early diagnosis provides the 5-year survival of up to 90%[5]. However, it may be difficult to preoperatively determine the nature of adnexal tumors.

No single diagnostic tool (ultrasonography:; - US, magnetic resonance imaging - MRI, computerized tomography - CT and radioimmunoscintigraphy - RS) is good enough in this determination. There are suggestions that appropriate malignancy risk estimation could be achieved by ultrasound assessment of adnexal mass echo morphology by an experienced sonographer.[3]

Ultrasonography is nowadays accepted as the primary imaging modality in the evaluation of an ovarian mass and the main triage method prior to treatment.[6]

Emphasizing morphologic characteristics of the adnexal masses, in so called pattern recognition, features like presence of mixed consistency or multilocular components, septa or excrescence could differentiate benign from malignant neoplasms.[7-9] This pattern recognition of adnexal masses reaches a sensitivity of 86% and specificity of 80% when is performed by non-expert ultrasound examiner, and when performed by experienced one it has sensitivity of 90% and specificity of ***93%.*** Nevertheless, the optimal US diagnostic criteria to use when characterizing a suspected ovarian neoplasm still remain controversial[6].

In this study we try to correlate various clinical, sonographical, intraoperative and pathological findings hence highlighting the importance of these diagnostic procedures in pre operative evaluation of patients with adnex al masses so that the patient gats the appropriate treatment.

Hence this study is an attempt to improve prognosis in patient by early and accurate detection of disease in patient with adnex-

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al masses.

AIMS AND OBJECTIVE

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To correlate the clinical diagnosis with radiological and histopathological diagnosis.

MATERIAL AND METHODOLOGY

The present prospective study was conducted during 1st June 2012 to 31st September 2013 in department of obstetrics and gynecology NSCB Medical college Jabalpur attending the gynec OPD.

After getting clearance from ethical committee, thestudy was carried out in department of obstetrics and gynecology and with the consent of patient identified to have adnexal mass and willing to be included in the study. Proper history , clinical examination and USG was done for all patients. The proforma was filled in special reference to age, parity, menopausal status, duration of onset of signs and symptoms, origin, nature,size and laterality and other relevant findings were noted. In the USG , morphological scoring using Sasson scoring[10] done. Total scoring ranged from 4-15 with a score of more than or equal to 9 suggestive of malignancy.

Intraoperative findings of all operated patients were noted, specimen of all patients were sent for histolopatology and all patients were followed up till their treatment. Finally, correlating clinical, radiological and pathological findings.

INCLUSION CRITERIA

Patients willingness

All cases clinically or ultrasonographically diagnosed as adnexal masses.

EXCLUSION CRITERIA

Non gynecological adnexal masses on USG or clinical examination. Patient not willing for further treatment in our hospital.

OBSERVATIONS AND RESULTS

Prevalence

Among 4618 patients attending Gynecological OPD 112 cases required admission for sus pi cious adnex al disease. 105 cases were operated and adnexal mass was confirmed in 105 cases by surgery. Henceprevalence of women requiring surgery for adnexal masses is 2.27%

Among 862 patients admitted gynecological patients prevalence of patients having surgery for adnexal mass is 12.18%. Prevalence of women requiring surgery for malignant adnexal masses among outpatients is 0.433%) and among inpatients is 2.3%.

7 patients out of 112 OPD patients did not undergo surgery as three were managed conservatively (two patients put on antitubercular treatment and one patient managed conservatively for OHSS), one patient Certified due to burkitts lymphoma and three patient transferred for radiotherapy for advanced ovarian malignancy

DISCUSSION

Our study shows that the prevalence of women requiring surgery for adnexal masses is 227 %. Among 862 patients admitted gynecological patients prevalence of patients having surgery for adnexal mass is 12.18%. Prevalence of women requiring surgery for malignant adnexal masses among out ^patients is 0.433% and among inpatients is 2.3%. This is less than the incidence quoted in ACOG Guidelines on Management of Adnexal Masses[10] as per which women have a 5 to 10 percent risk of requiring surgery and those who undergo surgery have a 13 to 21 percent chance of being diagnosed with ovarian cancer. This may be due to fact being a tertiary care centre many adnexal masses are operated in secondary centres especially benign masses as prevalence of malignant masses is significantly high in our study in especially inpatients.

Our study shows that benign adnexal masses constitute 80.96% and malignant masses constitute 19.04 % of all adnexal masses. The most common is benign ovarian masses (42.85%) followed by tubal masses(15.24%), benign uterine masses (6.67%), inflammatory tubo-ovarian masses (6.67%) and tubercular

masses (3.81%). The incidence of malignancy that is 19.04 % is similar to incidence found in other study done at Department of Obstetrics and Gynaecology, Kasturba Medical College, Manipal University, India in

2008 were incidence of malignancy in suspected adnexal mass in evaluation of 60 patients was^l8.3% whereas this incidence is less compared to study of Poznan University of Medical Sciences; Poland.

Current study shows that adnexal masses occur with maximum frequency in reproductive age group i.e. 20-49 years with total of 78.93% of cases occulting jn this age group. A significant linear trend of increasing age and higher chances of malignancy is also observed in our study. Our study shows considerably higher proportion of malignancy among women more than 40 years of age same is the observation with Tribhuvan University Teaching^JIgs£ital, Maharajgunj, Kathmandu, Nepal.[3] [table 2]

Present study shows that maximum number of masses occurs among women of lower parity (70%) but there is significant correlation among parity of higher order and malignancy. There also appears to be significant correlation" among women of menopausal group and malignancy showing significant higher proportion of malignant masses in menopausal women women (9.6%). Similar results were at Institute of Gynecology and Obstetrics, clinical Center of Serbia, Belgrade[11].

Various other authers also say that a woman in menopause presents a risk that the adnexal mass is of malignant nature.[12]

The most common presenting symptom among symptomatic adnexal masses is abdominal pain (78%), followed by abdominal lump (41%)), menstrual problems (22%), abdominal distention (22%), decrease appetite (6.6%). Olson et al[13] study shows same findings.

Present study shows that **71.42%** masses with thick septa, **57.14%** masses with papillary excrescence or solid appearing masses (sassone score 3 or 4), **45.45%** masses with high or mixed echogenecity and those with echogenic core (sassone score 3,4 or 5) and **39.13%** with thick wall (sassone score 2 or 3) are actually malignant.

As per present study and others studies none of the unilocular tumors are malignant and any papillary excrescences on the inside of the cyst wall indicates an increase chance of malignancy. [14,15]

Meire et al, 1978; Herrmann et al, 1987, Andolf and Jorgensen, Luxman et al., 1991 showed same results.

In our study septal thickness turned out to more specific than papillary excrescence.

It is already known that operative findings are gold standard for

determining the origin, size and laterality of adnexal masses. But it is an invasive technique. As per the current study there is overall 63% correlation between clinical and operate between sonographic and operative findings respectively for origin. This establishes the fact that sonography is an important diagnostic tool in evaluation of patients with adnexal masses but surgery is stjjj t^e gQj(j standard as origin is determined correctly in 100% cases by surgery

There is also 68% correlation clinically as compared to 80% correlation sonographically with respect to surgery f0r size whereas laterality is correctly determined in only 68 and 79 % respectivelyJor clinical and sonographic examination compared to surgery

This correlationship i.e. 80% between USG and surgery for size is lower compared to other study at Benazir Bhutto Hospital (BBH) Rawalpindi conducted in June 2006 to May 2007.

On comparing the nature of mass determined intraoperatively with final histopathology report it is shown that there is overall 96.7%

con-elationship pathological reports in determining nature of adnexal masses.

Our study shows that there is 65.34% correlation clinically as compared to 78.2% correlation by sonographically and 96.7% by surgery with respect to HPR for determining the nature of adnexal masses.

Hence this present study further substantiate that USG is invaluable technique in determining nature of adenxal masses but the gold standard remains the "surgery and histopathological findings".

CONCLUSION

Patients in menopause, especially older, with suspicious sonographic findings like mixed echogenicity, presence of papillae, thick septum and wall etc. should be immediately referred to a tertiary institution where appropriate extensive operative procedure could be performed.

We can conclude from our discussion that ultrasonography is definitely an important noninvasive investigation and is, helpful in diagnosing most cases of functional ovarian cysts, benign ovarian neoplasm and ovarian malignancy; but the histopathological examination of specimen obtained from laparotomy or fine needle aspiration cytology of adnexal mass is the gold standard for confirming the diagnosis. Patients in menopause especially older, with suspicious sonographic findings like mixed echogenicity, presence of papillae, thick septum and wall etc. should be immediately referred to a tertiary institution where appropriate extensive operative procedure could be performed.

TABLE 1

DISTRIBUTION OF ADNEXAL MASSES -

Type of adnexal mass	Number	Percentage (%)
Benign ovarian	45	42.85
Malignant ovarian	20	19.04
Benign uterine	9	8.57
Tubal mass	16	15.24
Tubercular tuboovarian	4	3.81
Inflammatory tuboovarian	7	6.67
Not send/not determined	4	3.81
Total	105	100 %

TABLE 2

ANALYSING CASES IN REPRODUCTIVE AGE GROUP (79% CASES)

Type of adnexal mass		20-29 yrs	30-39 yrs	40-49 yrs
Benign adnexal	Benign ovarian	7(8.4%)	20(24.1%)	8(9.6%)
	Benign uterine	2(2.4%)	2(2.4%)	4(4.8%)
	Tubal mass	9(10.8%)	4(4.8%)	2(2.4%)
	Tubercular tuboovarian	1(1.2%)	0(0%)	2(2.4%)
	Inflammatory tuboovarian	2(2.4%)	1(1.2%)	1(1.2%)
	Not send/ not determined	4(4.8)	3(3.6%) ;	0(0%)
Total		25(30.1%)	30(36.1%)	17(20.48%)
Malignant ovarian		3(3.6%)	4(4.8%)	4(4.8%)
Total		28(33.7%)	34(40.9%)	20(24.1%)

TABLE 3

DISTRIBUTION OF MASSES AS PER PARITY

	▪	Low parity	High parity
Benign ADNEXAL	Benign ovarian	31(29.5%)	14(13.3%)
	Benign uterine	5(4.7%)	43.8%)
	'Tubal mass'	15(14.28%)	1(0.9%)
	Tubercular tuboovarian	3(2.8%)	1(0.9%)
	Inflammatory tuboovarian	3(2.8%)	4(3.8%)
	Not send/not determined	4(3.8%)	0
	Total	61(87.14%)	24(68.57%)
Malignant ovarian		9(12.86%)	11(31.43%)
Total		70(66.67%)	35(33.33%)

Table 4

DISTRIBUTION OF ADNEXAL MASS AS PER MENOPAUSAL

Type of mass		Non menopausal	Menopausal
Benign adnexal	Benign ovarian	37(35.23%)	8(7.6%)
	Benign uterine	8(7.6%)	1(0.9%)
	Tubal mass	16(15.2%)	0
	Tubercular tuboovarian	4(3.8%)	0
	Inflammatory tuboovarian	6(5.7%)	1(0.9%)
	Not send/not determined	4(3.8%)	0
	Total benign	75(90.36%)	10(45.45%)
Malignant ovarian		.8(9.6%)	12(54.54%)
Total		83(79.05%)	22(20.6%)

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TABLE 5
DISTRIBUTION OF SYMPTOMS

Type of mass		Abdominal pain	Abdominal lump	Abdominal distention	Decreased appetite	Menstrual problems	Others
Benig) i adnes	Benign ovarian	36	16	7	3	3	10
	Benign uterine	5	5	0	0	4	1
	Tubal mass	15*	1	4	0	10	2
	Tubercular tuboovarian	„ 4	1	1	0	1	1
	Inflammatory tuboo-varian	4	3	0	1	1	1
	Not send/ not determined	4	0	1	0	2	0
Total benign		68 (64.76%)	26 (24.76%)	13 (13.33%)	4 (3.8%)	21 (20%)	15 (14.2%)
Malignant ovarian		14 (13.33%)	17 (16.2)	9 (8.56%)	3 (2.8%)	2 (1.9%)	9 (8.5%)
Chi square		0.95	19.82	8.63	2.76	2.05	-
P vaiue		>0.005	<0.0001	<0.05	>0.05	>0.05	-
Total		82 (78.09)	43 (40.95%)	22 (20.95%)	7 (6.67%)	23 (21.9%)	14 (13.33%)

TABLE 6
POSITIVE CORRELATION BETWEEN CLINICAL, SONOGRAPHICAL AND INTRAOPERATIVE FINDINGS WITH RESPECT TO ORIGIN

Type of mass		Clinical	Sonographical	Total cases
Benign adnexal	Benign ovarian	33(73.3%)	41(91.18%)	45
	Benign uterine	3(33.33%)	3(33.33%)	9
	Tubal mass*	9(56.25%)	9(56.25%)	16
	Tubercular tuboo-varian	1(25%)	4(100%)	4
	Inflammatory tuboovarian	3(42.85%)	5(71.4%)	7
	Not send/not deter-mined	1(25%)	4(100%) :	4
Malignant ovarian		16(80%)	20(100%)	20
Total		66 (62.85%)	86 (81.9%)	105

TABLE 7
POSITIVE CORRELATION BETWEEN CLINICAL, SONOGRAPHICAL AND INTROPERATIVE FINDINGS WITH RESPECT TO SIZE

Type of mass		Clinical	Sonographical	Total cases
Benign adnexal	Benign ovarian	26(57.7%)	34(75.56%)	45
	Benign uterine	8(88.88%)	7(77.7%)	9
	Tubal mass*	12(75%)	15(93.75%)	16
	Tubercular tuboovarian	3(75%)	3(75%)	4
	Inflammatory tuboovarian	5(71.4%)	5(71.4%)	7
	Not send/ not determined*	1(100%)	1(100%)	1
Malignant ovarian		14(70%)	17(85%)	20
Total		69(67.64%)	82(80.4) \	102

TABLE 8
MORPHOLOGICAL SCORING BY SASSONE APPLIED ON OVARIAN AND TUBOOVARIAN MASSES.

Sassone scoring	Benign by surgery	Malignant by surgery	Total cases
Benign	48	5 •	53
Malignant	11	15	! 26
	59	20	79

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