Original Article

Frequency of Different Symptoms and Clinico-Pathological Features of Surgically Managed Adnexal Masses

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ABSTRACT

Objective: The objective of this study was to study the frequency of different symptoms, patient characteristics, clinical presentations and outcome in women who underwent laparotomy for adnexal masses suspected as ovarian tumors. **Methodology: Study Design:** Observational descriptive study. **Patients and Methods:** From Jan 2012 to Dec 2012, 57 patients with palpable adnexal masses were admitted in Gynae unit II of DHQ Hospital Faisalabad. All those patients who underwent laparotomy for adnexal masses suspected as ovarian tumors, were included. 24/57 fulfilled the selection criteria. The demographic data of patients included (i-e; age, marital status, parity, blood group), personal & family history, presenting clinical symptoms, pre-operative ultrasound characteristics of adnexal masses, their per-operative gross appearance and finally histo-pathologic diagnosis. **Exclusion Criteria**: Patients with simple cysts on scan, who were managed conservatively and then discharged.

All pregnant women (e.g; chronic ectopic, ruptured ectopic and those with intra uterine normal pregnancy but with an adnexal mass or cyst), and where data was not available or who were lost to follow up, were excluded from the study. **Results:** 42 % (24/57) of women with palpable adnexal masses underwent laparotomy. On histopathologic examination 80% were benign and 20% were malignant. The majority of patients were in reproductive age group. 58% (14/24) were multipara, 29% (7/24) were nullipara,12 % (3/24) were single. Almost all (100%) patients were symptomatic at the time of presentation. 20 % were postmenopausal, and the large adnexal mass turned out to be malignant ovarian tumor in 100% of postmenopausal women. **Conclusion:** Adnexal masses commonly affected the relatively younger women. Abdominal pain was the most common symptom. Ovarian malignancy was exceptional in younger groups but more frequently seen in postmenopausal women.

INTRODUCTION

Adnexal masses present a diagnostic dilemma. The term 'adnexa' is a Latin word derived from pleural word (i-e; appendages) i-e; uterine appendages. The adnexa of uterus includes ovaries, fallopian tubes and the broad ligament. So, any tumor of these structures is referred to as an adnexal mass preoperatively. The differential diagnoses is diverse. In clinical practice, after

imaging and surgical intervention, the majority of these prove to be ovarian tumors (epithelial/non-epithelial) and are benign. The physiological/functional ovarian cysts i-e; follicular cysts and corpus luteal cyst are the most common (90%) and may attain huge sizes requiring surgical removal. Conversely, if an adnexal mass turns out to be an ovarian malignancy, the prognosis is very bleak. In U.K the annually 7000 new case of ovarian cancer are diagnosed.[1,17] In Pakistan too it's no less than a menace .[2] The institute of Medicine of the National Academies USA, recommends that low resource countries that cannot afford the infrastructure required for organized screening

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programs should focus on increasing awareness of signs and symptoms of cancer in general population.

Recent NICE (National Institute of Health and Care Excellence) guidelines 2011 recommendations are to suspect and screen out underlying ovarian cancer in women of 50 years or above, who persistently (particularly more than 12 times a month) complain of abdominal pain, abdominal distension, abdominal mass, bloating/flatulence and indigestion, pelvic pain/heaviness, increased urinary frequency or incontinence, backache, constipation or diarrhea, painful defecation or urination, abnormal vaginal bleeding, unexplained weight loss, fatigue, loss of appetite and loss of vigor .[3,4,5] These symptoms are also common in many non-malignant conditions ; indeed, 95% of women attending primary care have a symptom potentially representing ovarian cancer[1,4]. This is a classic conundrum for those working in primary care: the low risk, but not zero risk, symptom[1].Furthermore as there is no valid screening test and clinicians should be aware of newer changing strategies of ovarian cancer screening e.g; 3 monthly screening for rising or static trends of Ca125 tumor marker integrated with pelvic ultrasound. (Risk of ovarian cancer algorithm (ROCA))[27]

Currently only 30% of ovarian cancers are diagnosed in early stages in primary setting.[1,17]For primary care physicians it implicates that ,contrary to famous dictum "fair, forty/fifty, female, fatty, flatulence" (5F) may not imply cholycystitis, gall stones or irritable bowel syndrome . NICE, furthermore, emphasizes carrying out appropriate tests for ovarian cancer in any woman aged 50 years or over who has had symptoms within the past 12 months that suggest irritable bowel syndrome, because IBS rarely presents for the first time in women of this age.[8,29] An underlying ovarian malignancy may go undetected.

 The failure of a clinician to identify the casual and temporal relationship of these non-specific symptoms with ovarian /adnexal pathology can end up in dilemma of silent ovarian cancer. No ovarian cancer is 'silent' in true sense but it is a killer in true sense; for the overall 5 year survival is less than 35%.However early detection in FIGO stage I/II has a 5 year survival rate of 80-90%. In countries where an organized infrastructure of cancer screening is absent, clinicians and women should never remain oblivious to warning symptoms of ovarian cancer.

The objective of this study was to see the frequency of different symptoms and cilinico-pathological features among surgically managed adnexal masses suspected as ovarian tumors and their outcome. In majority of cases, a spectrum/string of multiple, non specific and variable symptoms for a significant time period had been noted long before a suspicion of an abdominal malignancy was raised by the clinician or a need for consultation was felt by the patient.

MATERALS AND METHODS

This audit of clinical symptoms and surgico-pathological features was performed in gynae unit II of DHQ Hospital Faisalabad and included patients who underwent laparotomy for adnexal masses suspected as ovarian tumors from Jan 2012 to Dec 2012.Patients with suspected pregnancy complications e.g; ectopic gestations, pelvic abscess following septic miscarriage and/or a coexisting gravid uterus were excluded from the study. Initial diagnosis of adnexal masses was made by history, abdominal examination, bimanual pelvic examination and abdomino-pelvic ultrasound, which further helped to demarcate between ovarian vs. non ovarian masses and complex vs. simple ovarian cysts. Tumor markers Ca 125, LDH, sBhCG,and alpha fetoproteins were done only in selected cases where physical and ultrasound findings raised the suspicious of a possible ovarian malignancy. Accordingly surgery was tailored. Various surgical options adopted included fertility sparing conservative surgery (unilateral salpingo-oophorectomy/adnexectomy, ovarian cystectomy) in younger women, and radical surgery (i-e; either of total abdominal hysterectomy & bilateral salpingooophorectomy, staging laparotomy and debulking surgery) in older group. The sociodemographic profile of patients, symptoms, family history ,ultrasound characteristics and per operative gross appearances of suspected malignant vs. benign ovarian tumors, types of surgical intervention, surgical morbidity and histopathologic reports were prospectively entered

in a proforma. The pathology department of Punjab Medical College was consulted for histpatholgic reports. Furthermore patients were contacted on phone where data was missing or incomplete.

The data was analysed through statistical package for social science (SPSS) version 15.

RESULTS

Histopathologically 80% were proved as benign and 20% as malignant ovarian tumors.

The age of patients ranged between 18 years to 60 years. However a majority of patients were in reproductive age group.58% (14/24) were multipara, 29% (7/24) were nullipara,12 % (3/24) were single. Almost all (100%) patients were symptomatic at the time of presentation.

The most common presenting complaint was lower abdominal pain in 91%(22/24) .Other co-presentations were mass abdomen in 20%(5/24) ,abdominal distention in 16% (4/24), infertility 8%(2/24), weight loss and anorexia in 4%(1/24), secondary amenorrhoea 16% (4/24), menstrual irregularity in 12% (3/24), postmenopausal bleeding in 4% (1/24).(Table 1-3)

33% of patients gave history of symptoms persisting since 6 months prior to presentation. Whereas a significant time lag was seen in 20% who presented with 2-5 years' history of abdominal pain or distension .Acute presentations in emergency was seen in 8% (2/24).(Table 4)

Clinical evaluation was further aided by studying cyst/mass characteristics on ultrasound. 66% were unilateral, and 29% were echolucent or simple unilocular cysts. 58% were complex masses /multilocular with septations . Whereas size of adnexal masses ranged 10cm to 20 cm in 54% of patients. In 29% it was between 20 cm to >30cm.Ascites was absent in 87% of cases.(Table 5)

Surgical interventions were cystectomy /cyst enucleation in 45.8% (11/24), unilateral oophorectomy +/- salpingectomy in 4.1% (1/24). Hemorrhagic ovarian cyst was the most common per-operative finding, followed by torsion of ovarian cyst (10 %) .Total abdominal hysterectomy and bilateral salpingo-oophorectomy(TAH+BSO) was done in 16% (4/24) with apparently benign looking pathology

and 20% (5/24) had staging laparotomy for suspected ovarian cancer. Cytoreduction was suboptimal in two patient with advanced stage ovarian cancer. No in hospital mortality was seen. However one patient died within 6 months of staging laparotomy due to advanced ovarian cancer.

The histo pathological pattern was as follows: mucus cystadenoma (29%), serous cystadenoma (10%), dermoid cyst (8%), endometrioma (4%), leiomyoma (8%),tuberculosis (4%), Mucinous cyst-adeno carcinoma 8% (2/24), papillary serous carcinoma 4% (1/24), papillary mucus cyst adeno ca 4%(1/24), and granulosa cell tumor 4% (1/24).

Table 1: Presenting complaints of patients with adnexal masses

	n(24)	% Frequency
Mass Abdomen	5	20
Abdominal distension	4	16
Pain Abdomen	17	70
Acute pain	3	12
Sub acute		
chronic	6	37
Pain in Rt iliac fossa	2	8
Lower abdomen pain	22	91
Pain Left lumbar region	1	4
infertility	2	8
Epigastric pain	1	4
Anorexia	1	4

Table 2: Patients with adnexal masses with associated abnormal Uterine bleeding (AUB)

	n (total)	Percentage frequency
Heavy menstrual bleeding	1	4
Postmenopausal bleeding	1	4
Dysmenorrhoea	1	4
Amenorrhoea	4	16
p/v bleeding>8 weeks	1	4
Polymenorrhagia	1	4

Table 3: Percentage distribution of parity in patients with adnexal masses

parity	n( )	
Never conceived/nullipara P0A0	5	20
Para0+A1	2	8
Para1-5	1	4
Para>5	8	33

Table 4: Time lag between onset of presenting symptoms to seek consultation in Gyn OPD

Time interval (onset to presentation)	n(24)	(%)
>2year	5	20
>1 year <2year	4	16
>6 months	3	12
>1month<6 months	8	33
>1 week to <1 month	3	12
Within 1 week to one day	2	8

Table 5: Pre-operative ultrasound characteristics of adnexal masses

Ultra sound parameter	N(total 24)	% percentage frequency
Size		
>6cm to <10cm	4	16.66
>10cm to <20cm	13	54.1
>20cm to 30cm or more	7	29.1
Site		
Unilateral	16	66.6
Bilateral	8	33
Echolucency		
Simple cystic/unilocular	7	29
Simple with solid area	1	4
Solid	1	4
Complex/Multi-locular / with septations	14	58
Ascites		
Present	3	12
Absent	21	87
Coexist uterine pathology		
Sub serosal fibroid	1	4
Uterus size enlarged	1	4
Thickened endo-metrium	1	4
Para aortic lymph nodes	1	4

Table 6: Percentage frequency of different surgical modalities

Operation	n	%
Cystectomy+/-salpingectomy	11	45
UnilateralOophorectomy/adnexectomy	1	4
TAH+BSO	4	16
TAH+BSO+Omental Biopsy	3	12
TAH+BSO+ Omentectomy	1	4
Staging laparotomy with suboptimal cytoreduction	1	4
Myomectomy + enucleation of ovarian cyst	2	8
Subtotal hysterectomy+cystectomy	1	4

Table 7: Histopathological Diagnoses of surgically managed adnexal masses suspected as ovarian tumors

Histopathology	n	% frequency
Benign		
1)Mucus cystadenoma	7	29
2)Serous cystadenoma	5	20
3)Endometrioma	2	8
4)Dermoid cyst	2	8
5)Leiomyoma	2	8
6)Tuberculosis	1	4
Malignant		
1)Papillary serous Ca	1	4
2)Papillary mucus cyst adeno Ca	1	4
3)Mucinous cyst adeno Ca	1	4
4)Granulosa cell tumor	1	4

DISCUSSION

This series focused on ovarian tumors which shared a major bulk for adnexal masses encountered in common day clinical practice.

In current series both benign and malignant ovarian tumors were seen for which a wide range of surgical interventions were tailored depending upon the age of patient, fertility wishes, and per operative gross appearance/extent of disease.

In the current study, 20% of adnexal masses were proved as ovarian cancers. It correlated with the

global prevalence of ovarian malignant tumors in adnexal masses i-e; 20-30%. [2] It was also comparable to a large Pakistani study.[12]

In this study the mean age for ovarian tumors was 27 years in women of reproductive age group and 58 years in postmenopausal women confirming to several published studies.[25]

This was comparable to the study by Chan et al in women over 40 years, the median age at ovarian and peritoneal cancer diagnosis was 50 years and 64 years respectively. [33]

In consistence with published data [9], in current study, all (n 24,100%) patients who presented with clinically palpable adnexal masses had a "symptom complex". Abdominal pain (91%) and abdominal mass/distention (20%) were the commonest presenting symptoms seen in current study. This was in consistent with the study of Givens et al[9] where abdominal/pelvic pain was seen in 93% of cases and Rufferd et al [3] where pain abdomen was reported in 87%, gastrointestinal symptoms in 41% and constitutional symptoms in 29% of women. Ambreen et al [10] reported abdominal pain in 57.3% and urinary symptoms in 22% of women with ovarian cancer. Similar to western and Pakistani studies [9-15] abdominal and gastro-intestinal symptoms were the pre-dominant symptoms in such women and pelvic symptoms were seen in less than 25% of the study group. In contrast to western study of Kaun and Barbra et al [12], who reported crampy abdominal pain as the commonest symptom in early ovarian cancers, in our study abdominal pain was dull and diffuse. This may be because of significantly larger sized adnexal masses (mean size range 13cm-18cm) encountered in our series. Moreover cyst /mass size was significantly larger in postmenopausal women (n7) compared with pre-menopausal women (18 cm vs.13 cm, p 0.138).This also correlated with the study of Cho et al who reported significant difference in cyst size between patients with potentially malignant adnexal masses and those with benign disease(5 cm vs.6.23, p 0.001).

In current series ultrasound was found to be very useful for preoperative assessment and planning of surgical strategy by demarcating between simple vs. complex adnexal masses. These findings confirm to what is reported by Nadreh B [20] et al and Tehreen et al.[21]

In current series a significant proportion of women showed a time lag of 6 months to 2 years from onset of symptoms to presentation in gynecological OPD. This confirmed with the research studies of Barret et al [1] and Bankhead at al [4] that majority of women with ovarian cancer even those with early stage disease had symptoms for a median of 12 months.[21] Different studies have reported variable median time intervals from onset of symptoms to diagnosis ranging from 3.4 months to 12 months. Where shorter durations were commonly seen in women with aggressive tumors. No patient had a family history of ovarian cancer in current study and it was comparable to the study of Smith et al where 91% had no family history. Whereas one patient who was 27 years old, nulliparous and presented with advanced ovarian malignancy had past history of laparotomy twice for recurrent ovarian cysts.

In this study mucus cystadenoma constituted the most common pathology (29%) followed by serous cystadenoma(20%), dermoid cyst (8%) and endometrioma(8%). Ovarian cystadenomas are benign but in both varieties a malignant transformation to cystadenocarcinoma can occur which kills by peritoneal implantation, distant metastasis and bowel obstruction. The origin of ovarian cancer is thought to be de novo and the progression to invasive cancer can be slow (Type 1 pathway) or rapid (type 2 pahway). However recent novel therapeutic trials on PARP (poly-ADP ribose polymerase inhibitors) suggested role of defective DNA repair pathways as a common molecular malfunction to BRCA1/2 mut related ovarian and breast cancers, high grade serous ovarian cancers, endometrial cancers, pancreatic and prostate cancers. The treatment of sporadic high grade serous ovarian tumors may thus be revolutionized in future by use of PARPi ,as more than 80% of ovarian tumors are epithelial and share the common pathway of defective DNA repair.[29] In current study epithelial ovarian carcinomas (mucinous and serous variety) were observed in 4/5 patients , Granulosa cell tumor in 1/5, and no borderline malignant tumor was seen similar to the study of Pushpa et al[2]. This histopathological spectrum well correlated with

many international and Pakistani studies with slight variation observed in frequency ; eg; in some studies mucinous tumors were slightly more prevalent than serous variety, whereas others reported serous cystadeno carcinoma as commoner variety. Similar to the findings of Pushpa et al in our study there was no case of dysgerminoma. These differences are explained because of heterogeneity of study population, duration and place of study (oncology units vs. general gynecology units of tertiary care hospitals).

This study has some limitations. It is a single centre observational study. Observer bias could not be eliminated completely. Long term results among patients could not be evaluated. The author recommend maintenance of a cancer registry at D.H.Q /Allied hospital, institution of public awareness programmes about ovarian cancer warning symptoms and conduct of multi centre local study to confirm and improve these results.

CONCLUSION

Contrary to text book description, ovarian tumors are not silent killers. They are rather unheard. Abdominal pain is the most common symptom. Early symptom based recognition may improve prognosis and survival rates. If detected earlier, both disease related and surgical morbidity can be reduced

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