



Original Article

Clinicopathological analysis of adnexal masses in women

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Abstract

Introduction: Adnexal masses are a common entity in gynaecological practice. These masses may be benign or malignant, tubal or ovarian or both. Clinician must be aware of their differential diagnosis to triage the patients and ensure optimum therapeutic approach.

Objective: The objective of this study were to analyse the diverse clinical spectrum of adnexal masses and to correlate the preoperative diagnosis based on clinical examination and ultrasonography with histopathological examination.

Method: This was a cross sectional observational study on 189 patients with a diagnosis of adnexal mass who underwent laparoscopy or laparotomy. All the patients were evaluated by a complete history, general, abdominal and pelvic examination, followed by ultrasonography. These preoperative findings were then correlated with histopathological diagnosis.

Results: 41.26 % of the patients were in the age group 21-30 years .46.03 % of all cases were benign ovarian tumor. There were 5 ovarian malignancies. Preoperative ultrasonography correlate well with histopathological diagnosis.

Conclusion: A systematic approach consisting of a proper history, clinical examination, imaging studies and accurate interpretation of diagnostic procedure is necessary for the triage and optimum management of adnexal masses in women.

Keywords: adnexal masses, histopathological diagnosis, ovarian masses, ultrasonography.

Introduction

Adnexal masses are commonly encountered in gynaecological practice among women of all age groups. About 20 % of women develop an adnexal lesion at some time in their lives. They may be benign or malignant. Adnexal masses are either ovarian or tubal. The initial detection and

evaluation of an adnexal mass requires high index of suspicion, a thorough history and physical examination. Timely appropriate laboratory and imaging studies like USG, CT scan, or MRI and tumour markers are required. Ultrasound examination is the standard diagnostic test for evaluation of adnexal mass. Transvaginal

ultrasonography along with colour Doppler gives better results for assessing ovarian morphology and vascularity, origin of the mass whether tubal or ovarian. But final diagnosis of adnexal masses is only reached by histopathological examination.

Methods

The study was a cross sectional observational study conducted in IMS & SUM hospital a tertiary level teaching hospital in Bhubaneswar. It covered a period of one year from July 2017 to June 2018. Patients with a diagnosis of adnexal mass who subsequently underwent either laparoscopy or laparotomy were included in this study. Patients in whom no surgical intervention was done were excluded from the study.

In this study period, 189 patients underwent surgical intervention for adnexal masses and data of these patients were analysed. Detailed history of all the patients include their age, parity, menstrual history, past history and family history. Clinical examination of the patients included general, systemic, abdominal and bimanual pelvic examination to look for size, consistency, surface, mobility and tenderness of the masses.

Ultrasound examination with colour Doppler was performed by experienced radiologist in our hospital. The preoperative physical examination and USG findings were correlated with intraoperative findings and confirmed with histopathological diagnosis.

Results

Table 1: shows age wise distribution of subjects in our study –majority being in the age group of 21-30 years (41.26%) followed by age group of 31-40 years (33.33%). Out of 189 cases 129(68.25%) cases were ovarian in origin (92.1% benign and 3.87 % malignant), 50 cases (26.45 %) were of tubal origin. There were no tubal malignancy detected in our study. One case of torsion of tube and ovary and one case of tubal necrosis constitute 2 cases (1.05%) of tubo-ovarian masses in the study whereas 8 cases (4.2%) were diagnosed as mesonephric cyst on histopathology (Table .2).

In the present study, benign ovarian tumor was the commonest ultrasonographic finding in 99 out of 189 subjects(52.38%) followed by ectopic in 37 patients i.e 19.57% (table :3).

On histopathological examination, the most common finding was serous cyst adenoma of ovary (22.75%) followed by ectopic (21.16%). 8 cases of ovarian malignancy were reported on imaging, however only 5 cases (2.6 %) were confirmed to be malignant on histopathology (Table. 4).

There was 5 cases of papillary serous cyst adenocarcinoma, 1 rare case of spindle cell lipoma of ovary, 1 case of epidermal inclusion cyst of ovary was detected.

Three cases diagnosed as complex tubo ovarian mass on imaging were found to be chronic ectopic on histopathology.

Table1: Age wise distribution of adnexal masses

| Age group (years) | No. of patients | Percentage (%) |
|-------------------|-----------------|----------------|
| < 10 | 1 | 0.52 |
| 11-20 | 12 | 6.34 |
| 21-30 | 78 | 41.26 |
| 31-40 | 63 | 33.33 |
| 41-50 | 22 | 11.64 |
| 51-60 | 10 | 5.29 |
| 61-70 | 3 | 1.58 |

Table 2: distribution of adnexal masses according to site

| Site of lesion | No. of cases | Percentage (%) |
|----------------------|--------------|----------------|
| Tubal | 50 | 26.45 |
| Ovarian | 129 | 68.25 |
| Para-ovarian | 8 | 4.23 |
| Both tubes & ovaries | 2 | 1.05 |

Table 3: distribution of adnexal masses based on preoperative imaging

| diagnosis | No. of patients | Percentage (%) |
|-------------------------|-----------------|----------------|
| Ectopic | 39 | 20.63 |
| Benign ovarian tumor | 87 | 46.03 |
| Dermoid | 14 | 7.4 |
| Malignant ovarian tumor | 8 | 4.23 |
| Para-ovarian cyst | 4 | 2.11 |
| Hydrosalpinx | 2 | 1.05 |
| Endometrioma | 19 | 10.05 |
| Tubo –ovarian mass | 16 | 8.46 |

Table 4: Histopathological diagnosis of the adnexal masses

| Histopathological diagnosis | No. of patients | Percentage(%) |
|--------------------------------|-----------------|---------------|
| Serous cyst adenoma of ovary | 43 | 22.75 |
| Ectopic | 40 | 21.16 |
| Mucinous cyst adenoma of ovary | 18 | 9.5 |
| Torsion tubes and ovaries | 3 | 1.58 |
| Mesonephric cyst | 8 | 4.2 |
| Pyo-salpinx | 1 | 0.5 |
| Haematosalpinx | 1 | 0.5 |
| Endometrioma | 29 | 15.3 |
| Tubercular | 2 | 1.05 |
| Teratoma | 20 | 10.5 |
| Papillary serous carcinoma | 5 | 2.6 |
| Haemorrhagic cyst | 13 | 6.87 |
| Epidermal inclusion cyst | 1 | 0.5 |
| Hydrosalpinx | 4 | 2.1 |
| Spindle cell lipoma of ovary | 1 | 0.5 |

Table 5: correlation between preoperative diagnosis and histopathological diagnosis

| Cinical condition | Diagnosis by imaging | Histopathological diagnosis (gold standard) |
|-------------------------|----------------------|---|
| Ectopic | 39 | 40 |
| Benign ovarian tumour | 87 | 76 |
| Malignant ovarian tumor | 8 | 5 |
| dermoid | 14 | 20 |
| Para-ovarian cyst | 4 | 8 |
| Endometrioma | 19 | 29 |
| Hydrosalpinx | 2 | 4 |
| Tubo ovarian mass | 16 | |

Discussion

Risk of missing out a malignancy drives the importance of evaluation of adnexal masses in women. Our study was intended upon the clinico pathological spectrum of adnexal masses in women –both ovarian and tubal.

As given in Table (1) 41.26% of the patients were in the age group of 21-30 years representing the maximum. The average age was 33.28 year. Youngest patient was 10 years old with epidermal inclusion cyst of ovary presented with torsion ovary and pain abdomen while the oldest was 70 years old with serous cyst adenoma of ovary. Among 5 cases of malignant ovarian tumour, all were papillary serous cystadenocarcinoma. Lowest age at malignancy seen in our study was 39 year with high grade serous papillary carcinoma of both ovary.

Most of the patients were presented with lower abdominal pain/pelvic pain, menstrual abnormalities like dysmenorrhoea, irregular bleeding per vagina. Vague GI symptoms like

bloating, indigestion, changes in appetite were the common complaints in patients with clinical diagnosis of ovarian masses. Though physical examination is not a reliable diagnostic tool but one can't totally ignore the clinical suspicion of malignancy in terms of a hard, irregular mass with restricted mobility. Abdominal obesity, co-operation of patient and experience of the examiner are variables that affect the accuracy of physical examination. A sensitivity of only 51 % for physical examination in diagnosing adnexal masses was shown by Padilla et al⁽³⁾.

Out of 87 (46.03 %) cases of clinically diagnosed benign ovarian mass, 76(40.21 %) cases were confirmed on histopathological examination. The majority were being serous cyst adenoma (56.57 %) followed by mucinous cyst adenoma (9.5 %). The affected groups were 72.09% below 40 years and 27.9 % above 40 years. Similar results were also observed in case of mucinous cyst adenoma. Mukherjee et al reported 20.5 % as benign serous and 31.5 % as mucinous benign tumour⁽⁴⁾. Maheswari et al had reported 32.46 % as benign serous tumors and 14.53 % as mucinous benign tumors⁽⁵⁾.

Pravakar and Maingi in their study of 636 ovarian tumors had observed 142 cases of teratoma constituting 22.32% of the study. Out of these 20.44% were mature teratoma, 0.94 % were strumaovarii and immature teratoma each and 0.15% were cases of carcinoid⁽⁶⁾. The study of 285 cases had observed 70 (25.56%) cases of teratoma out of which 63 (22.10%) were benign cystic,1 (0.35) solid benign and 6 cases (2.11%) of malignant teratoma.

Benign cystic teratoma (dermoid cyst) was observed in 20 out of 129 cases in the present study constituting 15.5% of the study.

50 cases out of 189 cases were involved fallopian tube which include 40(80 %) cases of ectopic pregnancies, 4 (8%) cases of hydrosalpinx,1 (2 %) case of haematosalpinx, 1 (2%) pyosalpinx , two cases of tubal endometriosis, 2 (4%) cases of tubercular salpingitis.

Out of 40 cases of ectopic pregnancies ultrasound was done in all cases. All cases showed adnexal mass except one case which was diagnosed as complex tubo ovarian mass and confirmed as chronic tubal ectopic on histopathology. Jones 1970 quoted the split of ectopic pregnancies as 99% in fallopian tubes, 0.5 % in ovaries and 0.1 % in abdominal cavity⁽⁷⁾. All cases in our study were tubal pregnancies.

Out of total 8 cases of USG diagnosed ovarian malignancy, 5 were confirmed as malignant by histopathology. So 3 cases were wrongly diagnosed. The low specificity of ultrasound is due to the overlap in the sonographic characteristics of benign masses like endometriomas, degenerated myomas, borderline tumors and ovarian malignancies. Risk of ovarian malignancies have been proposed by several authors. Jacob et al proposed risk of malignancy index (RMI) using the ultrasound features, menopausal status and CA125. Patients with RMI score more than 200 had 42 times greater risk of malignancy⁽⁸⁾. Another modification of RMI is the ROMA-risk of ovarian malignancy algorithm proposed by Moore RG et al involves CA 125, HE 4 (Human Epididymis protein 4) and menopausal status shown to improve the detection rate of ovarian malignancies⁽⁹⁾.

Conclusion

A methodical approach is needed in the evaluation and management of adnexal masses in women. A thorough history with evaluation of symptoms, detailed clinical examination and accurate interpretation of diagnostic and imaging modalities is mainstay in managing adnexal masses and favourable outcome.

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