EVALUATION OF FEMALE PELVIC MASS- CORRELATION OF CLINICAL AND HISTOPATHOLOGICAL FINDINGS IN FEMALE PATIENTS ATTENDING AT BIRAT MEDICAL COLLEGE AND TEACHING HOSPITAL, MORANG, NEPAL

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ARTICLE INFO

Received : 06 November, 2019
Accepted : 26 December, 2019
Published : 31 December, 2019

ORA 144

DOI: http://dx.doi.org/10.3126/bjhs.v4i3.27038

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Citation

Mishra SK, Pradhan R, Pokharel HP. Evaluation of Female Pelvic Mass- Correlation of Clinical and Histopathological findings in Female Patients Attending at Birat Medical College and Teaching Hospital, Morang, Nepal BJHS 2019;4 (3)10:845-849.

ABSTRACT

Introduction

The female pelvis is a quite complex anatomical region consisting of uro-genital system as its main part and other structures like blood vessels, gastrointestinal tracts, lymphatics, nerves and a part of musculoskeletal system. Thus, the differential diagnosis of pelvic masses may be of gynecological or non gynecological origin. Gynecological pelvic masses are uterine, ovarian or adnexal masses which may be benign or malignant.

Objective

The objective of this study was to evaluate the type of various gynecological pelvic masses and to correlate the preoperative diagnosis with histopathological diagnosis.

Methodology

This was a hospital based cross sectional study conducted on 107 patients from September 2018 to September 2019 at Birat Medical College and Teaching Hospital (BMCTH) with presenting complian of lump in the abdomen. These patients underwent clinical examination, routine and specific investigations along with ultrasonographic evaluation and tumour markers to reach a preoperative clinical diagnosis. Patients were admitted and preanesthetic consultation was done. Patients were taken for therapeutic or diagnostic laparoscopy or exploratory laparotomy and diagnosis were confirmed with histopathological diagnosis.

Results

Total 107 patients were enrolled in the study with age ranging from 21 to ≥70 years and among them majority (42.1%) were in the age group of 41-50 years. The most common presenting complain of patients were lower abdominopelvic pain (58.87%). The most common clinical diagnosis was leiomyoma in 39.25% patients followed by adenomyosis in 24.29% patients. The most common histopathological diagnosis was fibroid uterus seen in 42.05% patients. There were 2 (1.86%) patients of ovarian malignancies and 1 (0.93%) patient of uterine malignancy.

Conclusion

Though preoperative history, clinical findings and ultrasonography is helpful in diagnosing majority of the cases, histopathological diagnosis of abdominopelvic masses is the gold standard for confirming the final diagnosis.

KEYWORDS

Clinical evaluation, gynecological pelvic masses, histopathological diagnosis, ultrasonography

INTRODUCTION

Pelvic masses are common clinical presentation in gynecologic practice. Nearly, 20% of women develop pelvic mass at some time in their life time. They can be of either gynecologic or non-gynecologic origin.[1] Gynecological pelvic mass is mainly concerned with the pathology arising from the uterus, ovaries and adnexae.

Masses arising from the uterus consists of fibroid uteri, adenomyosis, endometrial polyp and carcinoma. Adnexal region is composed of ovary, fallopian tube, broad ligament, their blood vessels and nerves.[2] Adnexal mass may be arising from any of these structures.

Differential diagnosis of adnexal mass is complex. It includes simple ovarian cysts, functional ovarian cysts, benign and malignant ovarian tumors, paraovarian cysts, tubo-ovarian abscess, hydrosalpinx, leiomyomata, endometriomas, ectopic pregnancy, tubal malignancy, broad ligament fibroid, huge fimbrial cysts, pregnancy in bicornuate uterus.[3,4]

Fibroid uterus is the most common gynaecological tumour seen in nearly 20-50% of women around the world, with the highest frequency in females of reproductive age group.[5]

Ovaries are highly capable of producing both benign and malignant tumors throughout a woman's life time. Numerous factors influence the development and growth of adnexal tumors such as hereditary, hormones, food habits and environment. The most common adnexal finding in a premenopausal woman is functional or corpus luteal cyst both of which resolve spontaneously whereas ovarian malignancy is more common in postmenopausal females.[3]

Nearly 24% of premenopausal women with pelvic masses are diagnosed with uterine fibroids as observed on ultrasonographic evaluation.[6] Uterine leiomyomatosis was found in nearly 94.4% of cases with pelvic masses as shown in a study by Killackey et al.[7] As found during exploratory laparotomies, 70% of pelvic masses are of ovarian pathology. Studies have shown that 65.48% of ovarian tumors are benign and 34.51% of ovarian tumors are malignant.[8]

A risk of Malignancy index (RMI) consisting of CA125, menopausal state and ultrasound findings. RMI above 200 is the best discrimination for benign and malignant pelvic masses.[9] CA 125 levels equal or below 35 U/ml are considered normal and increased levels are sensitive to malignant conditions like ovarian carcinoma, advanced endometrial carcinoma, breast carcinoma, lung and colon tumours. Similarly, increased levels of CA125 may be associated with non-tumoral conditions like endometriosis, adenomyosis, fibroid uterus, tubo-ovarian abscess.[4] Among the ovarian neoplasms, 90.46% are benign and 9.54% are malignant.[1]

Ovarian cancer which is the most lethal one accounts for 4% of all cancers and the fifth most common cause of death because of their late presentation and poor response to treatment.–2[9,10] Triage of pelvic masses is needed so that malignant or suspected malignant pathologies can thus be timely referred to a gynecologic oncologist for surgical staging and thus ensure decreased morbidity, mortality and improved overall survival of such patients.

METHODOLOGY

This was a hospital based cross sectional study from September 2018 to September 2019, approved by the institutional review committee of Birat Medical College and Teaching Hospital (BMCTH). All the patients presenting with gynecological pelvic masses who underwent laparotomy were included in this study. We excluded the patients age <20 years, Pegnancy with adnexal masses, ectopic pregnancy, mass arising from an abdominal organ on laparotomy (non-gynecologic causes) and those not willing to take part in the study were excluded from the study.

The sample size was calculated based on the information by a study conducted at a hospital at Kochi, India where the sensitivity was 95.5% and specificity was 61.4%. Sample size was calculated as 107 poopulation.11Sample size (n) = z^{2pq}/d^2 After informed consent, detailed history of all the patients including their age, parity, menstrual history, menstrual abnormalities, complaints of abdominal pain, mass or abdominal distension, dyspepsia, infertility were asked. Significant past and family history history was taken. Examination of the patients included general, systemic, abdominal and pelvic examinations to look for size, consistency, surface, mobility and tenderness of the masses.

On clinical examination, masses with smooth regular surface, soft to cystic, mobile was taken as benign whereas hard, solid consistency masses with restricted mobility and ascites was presumed to be malignant. Routine and specific investigations along with ultrasonographic evaluation and tumour markers were performed to reach a provisional diagnosis. Patients were admitted and preanaesthetic consultation was done. Patients were taken for therapeutic or diagnostic laparoscopy or exploratory laparotomy and were confirmed with histopathological diagnosis.

Relevant data was entered in Microsoft excel and analysed using SPSS 21. Frequencies and percentages were calculated for categorical data.

RESULT

Total of 107 patients were enrolled in the study applying the inclusion and exclusion criteria. In the present study patients were in the range of 21 to ≥70 years. Table 1 shows the age wise distribution of the patients. Majority of the patients (42.1%) were in the age group of 41-50 years and only 2 (1.9%) patients were more than 70 years. Majority of the patients (85%) were in premenopausal state and 93.5% were multiparous [Table 2 and 3].

Table 1: Age wise distribution of pelvic masses.

Age group (years)	Number of patients	Percentage (%)
21-30	16	15
31-40	28	26.2
41-50	45	42.1
51-60	13	12.1
61-70	3	2.8
>70	2	1.9
Total	107	100.0

Table 2: Distribution of patients by menstrual status.

Menstrual status	Number of patients	Percentage (%)
Premenopausal	91	85.0
Postmenopausal	16	15.0
Total	107	100.0

Table 3: Distribution of patients by Parity status.

Parital status	Number of patients	Percentage (%)
Nulliparity	7	6.5
Multiparity	100	93.5
Total	107	100.0

The most common presenting complain of patients in this study was lower abdominal/pelvic pain (58.87%), followed by abnormal uterine bleeding (43.92%) and mass per abdomen (23.36%). Out of all the patients, 5 patients (4.67%) presented with infertility and 1.86% patients with gastrointestional symptoms [Table 4]. Similarly, majority of the cases (76.63%) had pelvic or abdomino-pelvic masses on examination followed by 34.57% patients with adnexal fullness [Table 4, 5].

Table 4: Clinical presentation – symptoms.

Symptoms	Number of patients	Percentage (%)
Lower abdominal/pelvic pain	63	58.87
Mass per abdomen	25	23.36
Abnormal uterine bleeding/postmenopausal bleeding	47	43.92
GI symptoms	2	1.86
Infertility	5	4.67

Table 5: Clinical presentation – signs.

Signs	Number of patients	Percentage (%)
Pelvic or abdomino pelvic mass	82	76.63
Adnexal fullness	37	34.57
Tenderness	13	12.14
Ascites	1	0.93

In this study, majority of the cases were diagnosed with fibroid uterus (39.25%) followed by adenomyosis (24.29%) on ultrasonographic evalution [Table 6]. Most common site of origin of pelvic masses was uterine (65.42%) followed by ovarian (25.23%) and adnexal (9.34%) [Table 7].

Table 6: Distribution of pelvic masses based on pre-operative ultrasonography.

Ultrasonograpy	Number of patients	Percentage (%)
Fibroid uterus	42	39.25
Adenomyosis	26	24.29
Benign ovarian mass	25	23.36
Malignant ovarian mass	2	1.86
TuboOvarian mass	10	9.34
Endometrial polyp	1	0.93
Endometrial carcinoma	1	0.93
Total	107	100.0

Table 7: Distribution of pelvic masses according to the site of the lesion.

Site of the lesion	Number of patients	Percentage (%)
Uterine	70	65.42
Ovarian	27	25.23
Adnexal	10	9.34
Total	107	100.0

The most common histopathological diagnosis was fibroid uterus (42.05%) followed by adenomyosis (25.36%) and serous cystadenoma of ovary (15.88%). Histopathology also showed endometriosis in 7.47% patients and dermoid in 4.67% patients [Table 8].

Table 8: Histopathological diagnosis of the pelvic masses.

Histopathological diagnosis	Number of patients	Percentage (%)
Leiomyoma	45	42.05
Adenomyosis	25	25.36
Endometriosis	8	7.47
Serous cystadenoma	17	15.88
Mucinous cystadenoma	6	5.60
Dermoid cyst	5	4.67
Tubo Ovarian mass	1	0.93
Mucinous cystadenomacarcinoma	1	0.93
Ovarian sarcoma	1	0.93
Adenocarcinoma of endometrium	1	0.93
Total	**107**	**100.0**

Majority (65.42%) of the patients with benign abdomino pelvic mass was of uterine origin followed by 26.16% patients with ovarian and 8.4% patients with adnexal origin whereas 2 (1.86%) patients of ovarian and only 1 (0.93%) patient of uterine mass were malignant in origin [Table 8].

Table 8: Distribution of benign and malignant pelvic masses.

Pelvic masses	Benign number (%)	Malignant number (%)
Uterine	70 (65.42%)	1 (0.93%)
Ovarian	28 (26.16%)	2 (1.86%)
Adnexal	9 (8.41%)	0

Endometrial polyp was diagnosed in 1 (0.93%) patient preoperatively which came to be fibroid uterus on histopathological examination [Table 9].

Table 9: Correlation between preoperative USG diagnosis and histopathological diagnosis.

Clinical condition	USG diagnosis	Histopathological diagnosis
Leiomyoma	42	45
Adenomyosis	26	25
Benign ovarian mass	25	28
Malignant ovarian mass	2	2
Tubo ovarian mass	10	1
Endometrial polyp	1	0
Endometrial carcinoma	1	1

DISCUSSION

In the present study, 107 patients undergoing surgical intervention for abdominopelvic masses where the majority of the cases (41.2%) were in the age group of 41 to 50 years. Masses of uterine origin was 66.35% among which 65.42% were benign and 0.93% were malignant. 42.05% cases of benign uterine mass were fibroid uterus. Masses of ovarian origin was 25.23% among which 26.16% cases were benign and 1.86% cases were malignant. Endometriosis was seen in 7.47% cases with masses of adexal origin. Similarly, above findings were comparable to the study by Biswajyoti Guha et al. where majority of the cases (38%) with pelvic masses were diagnosed with fibroid uterus.[12]

These findings were consistent with the study by Pillai et al. where leiomyoma accounted for 37% of all cases followed by benign ovarian masses in 20% of the cases.[11]

Similar to findings to the present study, Dotlic el al. had also shown that majority of the cases with adnexal masses were benign in origin.[13]

Most of the patients with abdominopelvic mass in this study belonged to premenopausal status (85%) which was corresponding to study by Bouzari et al.[9]

In a study by pradhan et al. the most common age group for occurrence of uterine leomyoma was 41 to 50 years which was 56.2% and were more common in multiparous females which was comparable to finding of our study. In contrast to the finding of our study where the most common presenting symptom of gynecologic pelvic mass was lower abdomino / pelvic pain (58.87%) but menstrual bleeding was the most common presenting complain of the patients in study by pradhan et al.[14]

The most common presenting symptom in this study was lower abdominal pain/pelvic pain (58.87%) which was similar to study done by Manivaskan J et al.[15] Similarly, regarding ovarian masses, serous cystadenoma followed by mucinous cystadenoma was the most common ovarian tumor observed in his study which was similar to the findings of the present study.

In the present study, benign ovarian mass diagnosed clinically accounted for 23.36% and malignant 1.86% which was in favour of the findings in a study done by Priya MHF et al.[8]

In a study done by Killackey et al.7 291 patients had undergone laparotomies for pelvic mass where majority of the cases were diagnosed with fibroid uterus (42%) followed by benign ovarian tumors (33.7%) which was similar to findings in our study.

65.42% patients were diagnosed to have uterine pathologies like fibroid uterus, adneomyosis and uterine neoplasm on ultrasonographic evaluation in the present study which was comparable with the findings by Kaushal et al.[16]

Histopathological findings of female pelvic masses in the study by Nandwani et al.17 was uterine 54.2% followed by adnexal 41.5% masses in which leiomyomas (69.4%) was the most common uterine lesion. This finding was also similar to our study.

CONCLUSION

Though preoperative detailed clinical history, clinical findings on examination and ultrasonographic evaluation is helpful in diagnosing majority of the cases but histopathological diagnosis of abdominopelvic masses is always the gold standard for confirming the final diagnosis. Uterine leiomyoma was the most common gnaecological pelvic mass encountered in the present study and lower abdomino/ pelvic pain was the most common presenting complain. Triage of pelvic masses is needed so that malignant or suspected malignant pathologies can thus be timely referred to a gynecologic oncologist for surgical staging, conservative management, surgery and thus ensure decreased morbidity, mortality and improved overall survival of such patients.

RECOMMENDATIONS

We recommend that early diagnosis and management of any gynecological pelvic masses is possible only through an adequate clinical history, thorough examinations, investigations along with histopathogolical diagnosis. Suspected malignancy and hisopathologically diagnosed malignant cases should be timely referred to oncology center.

ACKNOWLEDGEMENT

We would like to acknowledge all respondents, radiology, anesthesiology and pathology department, seniors and my family for their support, time and participation.

CONFLICT OF INTREST

None

FINANCIAL DISCLOSURE

None

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