Research Article

Gynaecological pelvic masses: A clinicopathological study

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Abstract

Introduction: Mass arising from female genital tract includes anatomical lesions of the Uterine Corpus and Cervix, Ovaries, Fallopian Tubes, Vagina and Vulva. Amongst them the Adnexal region is composed of Ovary, Fallopian Tube, Broad Ligament and its associated blood and nerve supply. The kaleidoscopic diagnosis of pelvic lump is also contributed by the various non-gynaecological sources like those arising from Bladder, Ureter, Rectum, Colon and their blood vessels and nerves in the pelvis which make the diagnosis of pelvic lump operose. **Aims and Objective:** To study the clinic-pathological spectrum of gynaecological pelvic masses and correlating them with final histopathological diagnosis. **Materials and Method:** The present study was conducted at department of Obstetrics and Gynaecology of ACPM medical college, Dhule during the period of June 2013 to October 2014. Total 100 cases of fulfilling the inclusion criteria were enrolled in the present study. A detailed history of presenting complaints and associated symptoms were noted along with menstrual history. A thorough general and systemic examination was performed. Examination assessed the presence or absence of mass (upon P/A, P/Sp or P/V). During bimanual examination the position, size, shape, mobility and tenderness of uterus and uterine appendages was noted. Rectal examination was performed in patients suspected with malignancy. A clinical diagnosis was put forth based on the symptomatology, Per abdomen, Per speculum and Per vaginum findings for the presenting condition. After surgical treatment all specimens were submitted for detailed Histopathological examination. The final diagnosis was concluded based on Histopathological Diagnosis. The comparison of various pelvic lumps was done with Histopathological Diagnosis which was taken as Gold Standard. Finally, the clinical diagnosis was analyzed as regards to their true positivity, false positivity and false negativity by correlating them with final histopathological diagnosis. **Results:** It was observed that out of the 100 cases, clinical examination suggested 76% masses were of uterine origin. While 24% were adnexal masses. Among them 48% were fibroid, 19% adenomyosis, 16% tubo-ovarian mass, 5% polyp, 3% Pyometra and 1% carcinoma cervix. Histopathological diagnosis was taken as final diagnosis. HPE reports found that the most common mass was fibroid (53%). Other masses were Adenomyosis (11%), Chocolate cyst 3%, Polyp (13%) out of which endometrial polyps were 9%, cervical were 4%. Pyometra was 3%, Hydrosalpinx 3%, Benign ovarian tumors were 15%, Cancer Cervix was 2%, Malignant ovarian mass was 1% and Endosalpingiosis was 1%. Clinical diagnostic sensitivity was high for cases of fibroid (73.5%), pyometra (100%) but was low in cases of adenomyosis (54.55%), ovarian lesions (43.75%) and polyp (38.46%). **Conclusion:** Uterine leiomyoma was the most common gynaecological pelvic mass encountered in the present study. Overall clinical diagnostic accuracy was found to be 62%. The sensitivity of clinical diagnosis was more for uterine lesion as compared to adenexal and ovarian lesion.

Keywords: Gynaecological pelvic masses, sensitivity, clinical diagnosis.

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INTRODUCTION

Mass arising from female genital tract includes anatomical lesions of the Uterine Corpus and Cervix, Ovaries, Fallopian Tubes, Vagina and Vulva[1]. Amongst them the Adnexal region is composed of Ovary, Fallopian Tube, Broad Ligament and its associated blood and nerve supply[2]. The kaleidoscopic diagnosis of pelvic lump is also contributed by the various non-gynaecological sources like those arising from Bladder, Ureter, Rectum, Colon and their blood vessels and nerves in the pelvis[2]

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which make the diagnosis of pelvic lump operose. Various Uterine masses include Leiomyoma, Adenomyosis, Polyp, congenital anomalies (resulting in Haematometra in an unattached rudimentary horn, uterus didelphus), Pyometra, Sarcoma and a rare encounter with Endosalpingiosis. The other genital masses include mass arising from vagina or vulva. The extra genital masses can be of tumors of urinary bladder, pelvic kidney, appendicular mass, diverticular abscess, bowel tumour, retroperitoneal tumour, retro-peritoneal fibrosis, matted bowel and omentum, abdominal wall lesions (rectus sheath haematoma), carcinoma of colon, rectum, appendix and the pelvic Castleman's disease which is a rare occurrence involving the pelvic lymph nodes.[1,3] The potential origins of a pelvic masses cause great confusion. History taking assumes paramount importance with the evaluation of a pelvic mass. Because of the numerous potential sites of origin; the history cannot be limited to gynaecological history only.[4] The importance of a through physical examination cannot be overstated. Clues from location of the mass and the history may help diagnose even rare conditions. With advances in medical technology, gynaecological evaluation of female pelvis has been transformed considerably. Diverse histopathologies are common in pelvic mass, reflecting the different organs of origin of the mass and thus histopathological evaluation becomes gold standard for definitive diagnosis of pelvic masses.[3] In the present study we analyzed the clinic-pathological spectrum of gynaecological pelvic masses and correlating them with final histopathological diagnosis.

AIMS AND OBJECTIVE

To study the clinic-pathological spectrum of gynaecological pelvic masses and correlating them with final histopathological diagnosis.

MATERIALS AND METHOD

The present study was conducted at department of Obstetrics and Gynaecology of ACPM medical college, Dhule during the period of June 2013 to October 2014. The following inclusion and exclusion criteria were used for recruitment of patients in study

Inclusion Criteria

- Patients attending gynaecological OPD with clinically suspected pelvic mass.
- Age group 20-60 years.
- Presenting asymptomatically or symptomatically for detected gynaecological pelvic mass.
- Masses arising from uterus, ovary, fallopian tube, broad ligament or cervix.

Exclusion Criteria

- Patient with age less than 20 or more than 60 years.
- Masses arising from other pelvic organs such as ureter, bladder, rectum.
- Intrauterine pregnancy.
- Functional Ovarian Cyst.

Thus total 100 patients were enrolled in the study who were fulfilling the inclusion criteria. A detailed history of presenting complaints and associated symptoms were noted along with menstrual history. A thorough general and systemic examination was performed. Examination assessed the presence or absence of mass (upon P/A, P/Sp or P/V). During bimanual examination the position, size, shape, mobility and tenderness of uterus and uterine appendages was noted. Rectal examination was performed in patients suspected with malignancy. A clinical diagnosis was put forth based on the symptomatology, Per abdomen, Per speculum and Per vaginum findings for the presenting condition. Various biochemical investigations were undertaken as per the proforma along with Ultrasonography (Transabdominal/ Transvaginal). After counseling and explaining the procedure to patient regarding the surgical intervention, a written informed consent was taken. Depending on the case, all patients were counseled and appropriate procedure was explained. A written informed consent for surgical management was taken and every patient was evaluated preoperatively for fitness to undergo surgery. All specimens were submitted for detailed Histopathological examination. The final diagnosis was concluded based on Histopathological Diagnosis. The comparison of various pelvic lumps was done with Histopathological Diagnosis which was taken as Gold Standard. Finally, the clinical diagnosis was analyzed as regards to their true positivity, false positivity and false negativity by correlating them with final histopathological diagnosis.

RESULTS

Table 1: Age and parity wise distribution

Variable		Freq
Age Group (years)	Upto 25	1
	26 to 35	8
	36 to 45	82
	46 to 55	8
	>55	1
Parity	Nullipara	2
	P1L1	16
	P2L2	55
	P3L3	24
	More than 3	3
Symptoms*	Pain	47
	Lump in abdomen	43
	Urinary complaints	19
	Gastro intestinal disturbance	8
	Loss of weight	1
	Menstrual disturbances	84
Menstrual pattern*	Dysmenorrhea	52
	Postmenopausal	3
	Menorrhagia	53
	Polymenorrhea	44
	Hypomenorrehea	1
	Oligomenorrhea	2

In the present study majority of the women were belonging to age group of 36 to 45 years. It was seen that 98% cases were parous while just 2% were nulliparous. Majority of the women (84%) in the study complain about disturbance in menstrual cycle followed by pain in abdomen (47%) and lump in abdomen (43%). Urinary complains were observed in 19% women. Menorrhagia was observed in 53% cases while polymenorrhea in 44% and dysmenorrhea in 52%. Out of the 100 cases, 3% were postmenopausal.

Table 2: Distribution of patients according to clinical findings

Abdominal Mass			Frequency (n=100)
Per abdominal features	Palpable	Not palpable	57
		Yes	43
	Size (weeks)	12 to 16	27
		16 to 20	6
		20 to 24	8
		24 to 28	2
	Consistency	Soft	9
		Soft to Firm	2
		Firm	29
		Firm to hard	3
	Contour	Irregular	4
		Smooth	39
	Mobility	Present	43
		Absent	0
	Tenderness	Present	26
	Free fluid	Present	1
per speculum examination		Normal	61
		White discharge	26
		Purulent discharge	2
		Blood stained purulent discharge	2
		Mucopurulent Discharge	1
		Mucoid Discharge	1
		Bleeding	4
		Polyp	5

per vaginal examination		Growth on cervix	1
	Size of uterus	Normal	21
		6 to 12	36
		More than 12	43
	Mass connecting with uterus	Present	76
		Absent	24
	Mobility of mass	Present	100
	Right fornix	Clear, Non Tender	65
		Clear, Tender	21
		Mass, Non Tender	7
		Mass, Tender	7
	Left fornix	Clear, Non Tender	69
		Clear, Tender	18
		Mass, Non Tender	6
		Mass, tender	7
	Consistency of mass	Firm	5
		Soft	19
	Cervical movement	Present without tenderness	89
		Present with tenderness	7

It was observed that the mass was palpable per abdominally in 43% cases. Out of them maximum cases (27%) presented with lump in the of size range of 12 to 16 weeks, 8% in the range of 20 to 24 weeks, 6% in the range of 16 to 20 weeks. The largest size encountered was in the range of 24 to 28 weeks in 2% cases. Most of the masses were firm in consistency (29%) while 9% were soft, 2% were soft to firm and 3% firm to hard. Maximum masses had smooth contour (39%) while just 4% had irregular surface on palpation. All the palpable masses were mobile. P/A tenderness was present in 26% and presence of free fluid was elicited in 1%. It was observed that per speculum examination findings were normal in 61% cases while white discharge was seen in 26%, purulent discharge and blood stained purulent discharge in 2% each. 36% cases had uterus size in the range of 6 to 12 weeks upon P/V examination while 21% were normal in size and 43% were more than 12 weeks size. P/V examination appreciated mobility of mass in all cases and found that 76% mass were connected with uterus. Right fornicial examination found mass in14% and mass in left fornix in 13%.

Table 3: Distribution according of patients Clinical diagnosis

	Clinical diagnosis	Frequency	Percent
Uterus	Fibroid	48	48.0
	Pyometra	3	3.0
	Carcinoma cervix	1	1.0
	Polyp	5	5.0
	Adenomyosis	19	19.0
Adnexal structure	Tubo-Ovarian mass	16	16
Ovary	Ovarian mass	8	8.0
	Total	**100**	**100.0**

It was evident from the table that out of the 100 cases, clinical examination suggested 76% masses were of uterine origin. while 24% were adnexal masses. Among them 48% were fibroid, 19% adenomyosis, 16% tubo-ovarian mass, 5% polyp, 3% Pyometra and 1% carcinoma cervix.

Table 4: Distribution according to histopathological doagnosis as gold standard

	H/P findings	Frequency	Percent
Uterus	Fibroid	53	53.0
	Polyp	13	13.0
	Cancer cervix	2	2.0
	Pyometra	3	3.0
	Adenomyosis	11	11.0
Adnexal structure	Endosalpingiosis	1	1.0
	Hydrosalpinx	3	3.0
Ovary	Benign ovarian	15	15.0
	Malignant ovarian	1	1.0
	Chocolate cyst	3	3.0

Histopathological diagnosis was taken as final diagnosis. HPE reports found that the most common mass was fibroid (53%). Other masses were Adenomyosis (11%), Chocolate cyst 3%, Polyp (13%) out of which endometrial polyps were 9%, cervical were 4%. Pyometra was 3%, Hydrosalpinx 3%, Benign ovarian tumors were 15%, Cancer Cervix was 2%, Malignant ovarian mass was 1% and Endosalpingiosis was 1%.

Table 5: Comparison of diagnosis by USG and HPE diagnosis

Clinical diagnosis		HPE		Sensitivity	Specificity
		Positive	Negative		
Fibroid	Positive	39	9	73.58%	80.85%
	Negative	14	38		
Polyp	Positive	5	0	38.46%	100%
	Negative	8	87		
Cancer cervix	Positive	1	0	50%	100%
	Negative	1	98		
Pyometra	Positive	3	0	100%	100%
	Negative	0	97		
Adenomyosis	Positive	6	13	54.55%	85.39%
	Negative	5	76		
Endosalpingiosis	Positive	0	0	0%	100%
	Negative	1	99		
Hydrosalpinx	Positive	0	0	0%	100%
	Negative	3	97		
Ovarian mass	Positive	7	1	43.75%	98.81%
	Negative	9	83		
Chocolate cyst	Positive	0	0	0%	100%
	Negative	3	97		

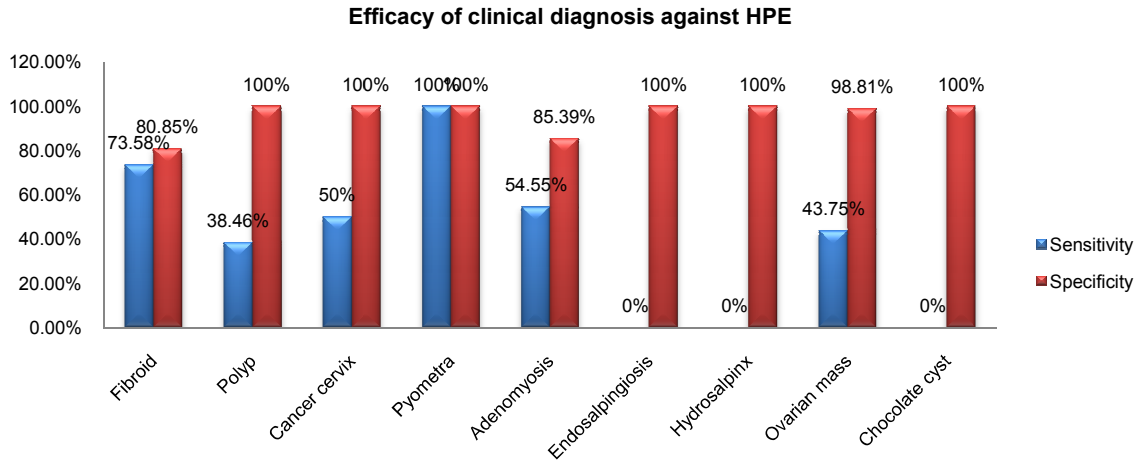

Table 1: Efficacy of clinical diagnosis against HPE

Clinical sensitivity was good for uterine lesions but was decreased for adnexal lesions. Clinical Sensitivity of diagnosing fibroid when compared to histo-pathological diagnosis was 73.58%, adenomyosis was 54.55% and 100% of Pyometra. Sensitivity was 43.75% for ovarian lesions, for polyp it was 38.46% and for cervical cancer was 50%, Sensitivity of diagnosing benign or malignant ovarian mass on clinically. Sensitivity of diagnosing Hydrosalpinx, chocolate cyst or Endosalpingiosis on clinical examination was zero%.

DISCUSSION

It was observed that patients with pelvic mass were between the age group of 20 to 60 years and majority of the patients (90%) were between the age group of 25 to 45 years. Extremes of age showed decreased presence of pelvic mass with only one case aged 23 years diagnosed as chocolate cyst and a case of Pyometra in a patient aged 58 years. Similar results were found by the study

conducted by Abbasi *et al*[3] where the highest frequency of these patients was in the reproductive years and 60% were between 30-40 years in their study. It was seen that most of the women in the present study were parous. Nulliparity is considered a risk factor for uterine fibroids.[3] In the present study there were 2% nulliparous women and 98% were parous. Nulliparity was seen in 1.88% case of uterine fibroid and 7.69% of endometrial polyp. Most cases of fibroid were parous where 15.09% were P1L1, 54.7% were P2L2, 28.3% were ≥P3L3 which are similar to the results by Pradhan *et al*[5] (46.7% parous) . In the present study, all cases of adenomyosis were parous. 81% P2L2 and 18% ≥P3L3 which is in concordance with the study of F.Taran *et al*.[6] In the study of Abbasi *et al*[3], there was an increased incidence of malignant ovarian tumour in nullipara women while leiomyoma was equally common in nullipara as well as grand multiparous women. The difference in observation regarding malignant ovarian tumour and parity could be due to the fact that there was only one case of malignant ovarian tumour in our study as compared to 11 cases in Abbasi *et al*. In the present study menstrual disturbances were the most common symptom (84%) followed by pain in abdomen (47%), lump in abdomen (43%). Pressure effects of the mass resulted in 19% patients with urinary and 8% with Gastrointestinal complains. Loss of weight was noted in one case diagnosed as malignant ovarian cancer. Abbasi *et al*[3] also observed similar findings in their study. In the present study, menstrual disturbance was the most common symptom with menorrhagia being the most common pattern (53%) followed by dysmenorrhea (52%), polymenorrhea (44%), oligomenorrhea (2%) and hypomenorrhea (1%). 3% cases were postmenopausal. Among the 100 cases in the study, the highest prevalence was found to be of uterine fibroid (53%), which is in concordance to Munir *et al*[2] (46.7%) and Pandey *et al*[7] study (39.8%). Even though most of the myomas have been reported to be asymptomatic,[20] menstrual disturbances are the commonest complaints of the patient according to the study of Pradhan *et al*[5] (73%) and Okogbo *et al*[9] (47.7%). Out of the 53 cases of fibroid encountered, 60.3% of fibroid had palpable lump where 18 were of 12 to 16weeks, 6 were 16 to 20 and 8 were 20 to 24 weeks size. One case was diagnosed clinically as fibroid with polyp. Maximum fibroids were firm in consistency (28) and smooth (28) on palpation. Cantuaria GH *et al*[10] study stated that assessment by bimanual examination correlates well with uterine size at pathologic examination of fibroid. In the present study, Clinical examination was able to correctly diagnose fibroid in 39 (73.58%) cases while 14 (26.42%) cases were misdiagnosed. The sensitivity of diagnosing fibroid clinically was 73.58%. Eight cases were misdiagnosed as adenomyosis while certain pedunculated leiomyomas were misdiagnosed as Tubo-Ovarian mass. There were 13% cases of polyp in the present study. Among them, Endometrial polyps were more common (69.3%) than cervical polyps (30.7%). All cases had menstrual disturbance making it the most common symptom (polymenorrhea 84.6%, dysmenorrhea 76.9% and menorrhagia (53.8%) followed by pain in abdomen (30.7%) which is in accordance to the study of Reslová T *et al*[11] where 82% premenopausal women were symptomatic. Certain polyps were coexistent with multiple fibroid (on HPE) and thus on P/A examination presented as pelvic lump and pressure symptoms. 38.4% polyps were visible on P/Sp examination. Sensitivity of diagnosing polyp clinically was 38.46%. On histopathology adenomyosis was present in 11% cases in the age group of 36 to 45 years which is in accordance with Shrestha A *et al*[12] study where 23.4% cases. The patients presented with symptoms of menstrual disturbance in all cases and pain in abdomen in 54.5% (6 cases). Menorrhagia was the most common menstrual abnormality (90.9%) followed by dysmenorrhea (72.7%) and one case presented with polymenorrhea (0.9%).none of the case was postmenopausal. Other symptoms were lump in abdomen in 0.9% and urinary complain in 0.9% cases. The findings of the present study were comparable with the study done by F. Tarane w *et al*[13] where pain in abdomen was observed in 48.7%, pressure symptom in 9.2%. Shretha's study[12] had 84.2% cases presenting with abdominal pain. The diagnostic sensitivity of clinical examination of adenomyosis was 54.55%. Pyometra This gynaecological condition was seen in 3% cases in the present study. Among them 2 were in the postmenopausal age (55 and 58 years) while 1 was 44 years. In a study by Rasmussen KL *et al*[14] all of the women suffering from pyometra were postmenopausal. In the present study, 2% cases were diagnosed as Squamous Cell Carcinoma of cervix upon HPE with parity of ≥2 and age 44 years. Both cases presented with menstrual disturbance and pain in abdomen. P/Sp examination showed growth in one case and detected pyometra in other. Clinically one case was under diagnosed as pyometra making clinical diagnostic sensitivity as 50%. Hydrosalpinx/ Pyosalpinx was present in 3% cases in the 36 to 55 years age group. But clinically none of the cases were correctly diagnosed. It was seen that 15% benign epithelial tumours and 1% malignant epithelial tumour were diagnosed on HPE. Clinical sensitivity of diagnosing ovarian lesion in these cases was just 43.7%. In the present study the diagnostic sensitivity of clinical examination using the patient's history, symptomatology and clinical examination turned out to be 62%. Clinical sensitivity was appreciable for fibroid (73.58%), even though the clinical sensitivity was

maximum for pyometra (100%), underlying aetiology was detected only on HPE. Sensitivity for diagnosis of adenomyosis was low for 54.55%, ovarian lesions (43.75%) and polyp (38.46%).

CONCLUSION

Uterine leiomyoma was the most common gynaecological pelvic mass encountered in the present study. Overall clinical diagnostic accuracy was found to be 62%. The sensitivity of clinical diagnosis was more for uterine lesion as compared to adenexal and ovarian lesion.

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