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SPECTRUM OF HISTOPATHOLOGICAL LESIONS OF FEMALE GENITAL TRACT - STUDY IN A TERTIARY CARE CENTRE

Gynecology

Dr. Naik Viraj R Senior Resident, Department of Obstetrics and Gynaecology, Goa Medical College, Bambolim, Goa. India 403202.

Dr. Manjusha Jindal* Associate Professor, Department of Obstetrics and Gynaecology, Goa Medical College, Bambolim, Goa. India 403202. *Corresponding Author

Dr.Siddhi D. Naik Junior Resident, Department of Obstetrics and Gynaecology, Goa Medical College, Bambolim, Goa. India 403202.

ABSTRACT

Introduction: The female genital tract is constituted by the ovaries, fallopian tubes, uterus (body/corpus and cervix), vagina, and vulva.[1] Female genital tract lesions can be benign or malignant. Our study was carried out to find out the frequency of various histopathological lesions including neoplasms of female genital tract. **Materials and Methods:** Our study is retrospective conducted over 2 years period. Data was collected from case records of patients presenting to Goa Medical College and histopathology reports obtained from Dept of pathology. Data was represented in form of charts and tables. The analysis of statistical data of variables was done using SPSS software version 22. Significance was calculated using chi square test. Value of $p < 0.05$ was considered significant. **Results:** Out of total 270 subjects studied, 229 were having benign lesions and 41 had malignant lesions.The mean age was 49.5 years. Leiomyoma was diagnosed in (40.58%) cases. In abnormalities of endometrium proliferative endometrium was seen in 37.6%. Chronic cervicitis was seen 78.74% cases. Among the ovarian lesions, 67.74% cases were simple follicular cysts. Cervical cancer was found in 73.17% cases followed by ovarian malignancies in 19.51 % cases, endometrial carcinoma in 4.87% cases and vulvar cancer in 2.44% cases. Among the malignant tumors (58.54%) cases were postmenopausal women. **Conclusion:** Microscopic assessment and clinico-pathological correlation of lesions is necessary as grossly identifiable benign lesion may harbour a focus of malignancy. It aids to appropriate management in the postoperative period. A concerted effort should be done towards prevention of cancers, by creating awareness through health education in addition to implementation of screening methods.

KEYWORDS

Female Genital tract, ovarian Tumor, ovarian mass, Benign, Malignant

INTRODUCTION:

The female genital tract is constituted by the ovaries, fallopian tubes, uterus (body/corpus and cervix), vagina, and vulva.[1] The different types of lesions of female reproductive tract depend on various factors like age, parity and hormonal status.[2] As uterus is responsive to hormones, it is subjected to various physiological changes and for its development and Function. Various benign and malignant lesions may develop depending on hormonal milleu. As a result of these lesions, women present with varied complaints like menstrual irregularities, discharge per vaginum, urinary complaints, postmenopausal bleeding and mass coming out per vaginum.[3] Fibroids are most common benign lesions of uterus seen in reproductive women.[4] In cases of dysfunctional uterine bleeding, the histopathological study reveals spectrum of findings from normal endometrial pattern like secretory and proliferative endometrium to abnormal endometrial findings like disordered proliferative endometrium, endometrial hyperplasia (simple, complex with or without atypia) . Uterine body cancer has incidence of 20/1,000,001.[4] In ovaries, typical lesionsencountered are functional cysts, and benign neoplasms constituting around 71- 88% cases and ovarian carcinoma (second common cancer) constituting 10%–15% of all gynaecological cancers in the developing countries including India.[4,5] Vulvar and vaginal squamous cell carcinomas which account for 1%–2% of all gynaecologic malignancies[6] mostly occur among women in their 60s or 70s' and have a world-standardised annual incidence of about 1–3/100,000 women.[6] In 2012, there were an estimated 5,27,600 new cases of cervical cancer and 2,65,700 deaths world wide.[7] Histopathological analysis of the hysterectomy specimens is mandatory for diagnostic purposes and to assess the pattern of lesions common in the uterus and adenexa in a particular population.[3]

Our study was carried out to find out the spectrum of various histo-pathological lesions including neoplasms (both benign and malignant) of female reproductive system.

MATERIALS AND METHODS:

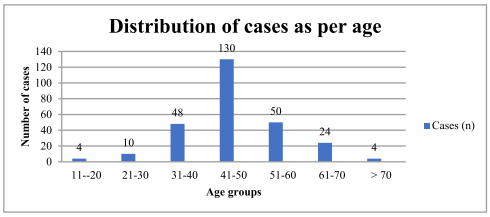
Our study is descriptive retrospective study. Study period was 2 years from March 2017 to February 2019. Cases having inflammatory lesions and breast lesions were excluded from the study. The study was conducted after approval from Institutional Ethical Committee. 270 cases were included as per criteria. Patient's clinical data with respect to age, clinical manifestation, imaging findings, and histopathology was noted. The findings were cumulatively analysed for appropriate diagnosis. The data was expressed in form of tables and figures. The studied lesions were classified according to the WHO classification. The analysis of statistical data of variables was done using SPSS software version 22. Significance was calculated using chi square test. Values of $p > 0.05$ was considered significant.

RESULTS:

Total of 270 cases were studied during the study period which included both benign and malignant lesions of female genital tract. 229 (84.81%) cases were benign and 41 (15.19%) cases were malignant.

The age ranged from 14 to 85 years. The mean age for benign lesions was 45.45 years and for malignant lesions was 52.57 years. Almost half of the cases (48.15%) belonged to age group between 41- 50 years, followed by nearly one third that is 18.52% and 17.78% belonged to age group between 51- 60 years and 31- 40 years respectively, followed by 8.89% in 61- 70 years, 3.70% cases in age group 21- 30 years and 1.48% cases in age group between 11- 20 years and > 70 years each as seen in Figure1.

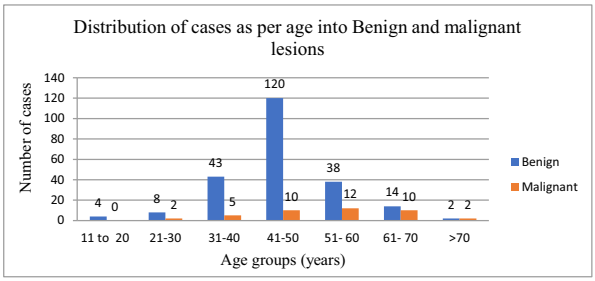
Figure 1: Distribution of cases as per age.



As seen in Figure 2, There were 120 benign lesions and 10 malignant lesions in the age group between 41- 50 years. 38 cases of benign lesions and 12 cases of malignant lesions were seen in the age group between 51- 60 years. No malignant lesion were seen in the age group between 11- 20 years and 4 cases of benign lesions were there in the same age group. In the age group between 21- 30 years , 8 cases of benign lesions and only 2 cases of malignancy were seen. In the age group between 31- 40 years, 4 cases of benign lesions and 35 cases of malignancy were found. 61- 70 years age group, 14 cases of benign lesions and 10 cases of malignancy were found and > 70 years age group, 2 cases of benign and malignant lesion each were found. It was seen that proportion of malignant cases increased with increasing age and the data shown in Figure2 was found to be statistically significant

with chi square statistic of 246.4784 with p <0.00001.

Figure 2: Distribution of cases as per age into benign and malignant lesions



Distribution of cases as per involvement of organs: There were 207 cases who presented with symptoms related to uterine pathology in form of heavy menstrual bleeding, lower abdominal pain and dysmenorrhea.

In uterus , myometrium and endometrium was studied. Benign lesions were seen in 75.93% cases and malignant lesions were found in 0.74% cases. As seen in Table 1, leiomyoma was diagnosed in 84 (40.58%) cases followed by adenomyosis in 18 (8.7%) cases, leiomyoma and adenomyosis coexisted in 12 (5.6%) cases, adenocarcinoma in 2 (0.97%) cases and histologically unremarkable myometrium was seen in 43.96% cases.

Table 1: Histopathology of Uterine lesion.

Diagnosis	Number of cases (n)	Percentage (%)
1. Leiomyoma	84	40.58%
2. Adenomyosis	18	8.7%
3. Leiomyoma with Adenomyosis	12	5.6%
4. Unremarkable	91	43.96%
5. Adenocarcinoma	2	0.97%
Total	207	

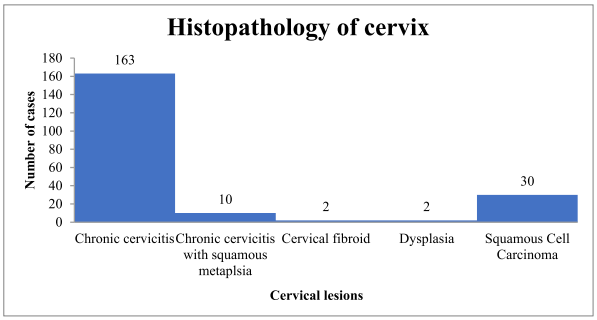
As shown in Table 2, proliferative endometrium was seen in 37.6% cases followed by atrophic endometrium (25.60%), secretory endometrium (19.81%), unremarkable (6.28%), endometrial polyp 5.8% cases, Endometrial hyperplasia without atypia 2.42% cases, with atypia in 1.45% cases and adenocarcinoma in 0.97% cases.

Table 2: Histopathology of Endometrium.

Histopathology	Number of cases (n)	Percentage (%)
1. Proliferative	78	37.68%
2. Secretory	41	19.81%
3. Atrophic	53	25.60%
4. Endometrial hyperplasia without atypia	5	2.42%
5. Endometrial hyperplasia with atypia	3	1.45%
6. Unremarkable	13	6.28%
7. Endometrial polyp	12	5.8%
8. Adenocarcinoma	2	0.97%

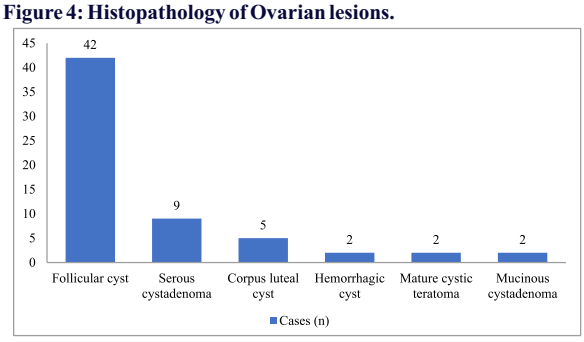
As seen in Figure 3, histopathology of cervix revealed 78.74% cases of chronic cervicitis, 14.49% cases of squamous cell carcinoma, 4.83% cases of chronic cervicitis with squamous metaplasia and 0.97% cases of cervical fibroid and dysplasia each. 85.50% cases were benign lesions of cervix and 14.49% cases were malignant lesions.

Figure 3: Histopathology of cervix.



During the study period there were 62 cases of ovarian lesions. As seen in Figure 4, among the ovarian lesions, 67.74% cases were follicular cysts followed by serous cystadenoma (14.52%), corpus luteal cyst (8.06%), hemorrhagic cyst (3.23%), mature cystic teratoma (3.23%) and mucinous cystadenoma (3.23%). Benign lesions were seen in 88.57% cases and malignant lesions were seen in 11.43% cases.

Figure 4: Histopathology of Ovarian lesions.



There were no benign lesions of vagina and vulva seen in present study

Table 3: Distribution of malignant cases of female genital tract.

Organs involved	Number of cases (n)	Percentage (%)
1. Cervix	30	73.17%
2. Ovary	8	19.51%
3. Uterus	2	4.87%
4. Vulva	1	2.44%
Total	41	

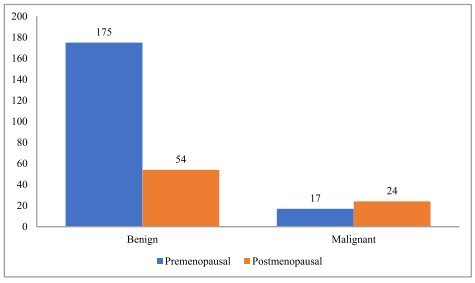
As seen in Table 3, cervical cancer was found in 73.17% cases followed by ovarian malignancies in 19.51 % cases, endometrial carcinoma in 4.87% cases and vulvar cancer in 2.44% cases. Fallopian tube histopathology was normal in all cases.

Table 4: Distribution of histological type of malignancies in different organs.

Organ/ Histological type	Number of cases (n)	Percentage (%)
1. Cervix	30	
a) Squamous cell carcinoma	20	66.67%
b) Adenocarcinoma	8	26.67%
c) Adenosquamous	2	6.67%
2. Endometrium		
a) Adenocarcinoma	2	100%
3. Ovary	8	
a) Serous cystadenocarcinoma	5	62.5%
b) Mucinous cystadenocarcinoma	1	12.5%
c) Granulosa cell tumor	1	12.5%
d) Krukenberg's tumor	1	12.5%
4. Vulva	1	
a) Squamous cell carcinoma	1	100%

Table 4 shows that among the cervical malignancies, 66.67% cases were squamous cell carcinoma, 26.67% cases were adenocarcinoma and 6.67% cases were adeno-squamous type of carcinoma. Among the endometrial malignancies, all cases (100%) were adenocarcinoma. Among the ovarian malignancies, 62.5% cases were serous cystadenocarcinoma, 12.5% cases were mucinous cystadeno carcinoma, 12.5% cases were of Krukenberg's tumor and Granulosa cell tumors each. Among the vulval malignancies, one case seen was squamous cell carcinoma.

Figure 5: Distribution of malignant cases among pre and postmenopausal women.



Malignant tumors were found in 58.53% of postmenopausal women. As seen in Figure 5, among the premenopausal patients the benign lesions were more as compared to malignant lesions The malignant tumors were found more commonly in postmenopausal women and this correlation was found to be statistically significant with chi square statistic of 20.6836 and p- value < 0.00001.

DISCUSSION:

In our study, we found that majority (48.15%) of the patients belonged to the age group between 41- 50 years followed by 51- 60 years age group (18.52%) and 31-40 years age group (17.78%). The findings of our study are similar to those done by Bhugra P. et al[8] who found 46.43%, 19.75% and 18.70% cases between age groups of 41- 50, 51- 60 and 31- 40 years age group respectively, Jandial R. et al[9] documented 52.73% patients in age group 41- 50 years and Patel AS et al[10] also reported 50.8% cases in the age group between 41-50 years.

In our study, myometrium was histologically normal in 43.96% cases, most common myometrial pathology found was leiomyoma (40.58%) followed by adenomyosis (8.7%), leiomyoma with adenomyosis (5.6%) and adenocarcinoma (0.97%). The findings of our study are similar to Domblae V. et al[3] who documented leiomyoma in 48.6% cases and adenomyosis in 4.6% cases, Patil AS et al[4] who documented leiomyoma in 42.2% cases, adenomyosis in 8.3% cases, leiomyoma with adenomyosis in 3% cases and adenocarcinoma in 1% cases, Bhugra P. et al[8] who documented histologically normal myometrium in 44.12% cases, leiomyoma in 37.61% cases, adenomyosis in 8.61% cases, leiomyoma with adenomyosis in 6.93% cases and adenocarcinoma in 2.31% cases, and Vani D. et al[11] who reported histologically normal myometrium in 44.28% and leiomyoma in 41.08% cases. Adenomyosis is rarely diagnosed preoperatively and is usually diagnosed after hysterectomy by histopathological examination.[8]

In our study, nearly one third of cases (37.68%) had proliferative endometrium, a quarter (25.60%) of cases had atrophic endometrium and 19.81% cases had secretory endometrium. The findings of our study are consistent with the findings of study done by Patil AS et al[4], who documented proliferative endometrium in 37.6% cases, atrophic endometrium in 26.4% cases and secretory endometrium in 20.8% cases, Rai U. et al[12] who documented secretory endometrium in 38.2% cases, atrophic endometrium in 26.95% cases and secretory endometrium in 19.13% cases. Atrophic endometrium was documented in 25% and 29% cases by Jandial R. et al[9] and Verma D et al[13] respectively.

When cervical histology was seen, nearly three fourth cases (78.74%) had chronic cervicitis similar to findings of Patil AS et al[4] and Dhuliya V. et al[14] who documented chronic cervicitis in 76.8% and 77.33% cases respectively. In our study we found chronic cervicitis with squamous metaplasia in 4.83% cases, dysplasia in 0.97% cases and squamous cell carcinoma in 14.49% cases. Study done by Jandial R. et al[9] and Baral R. et al[15] documented chronic cervicitis with squamous metaplasia in 5% and 3% cases respectively. Study done by Bhugra P. et al[8], Verma D. et al[13] and Baral R. et al[15] documented cervical dysplasia in 0.21%, 1% and 1% cases respectively. Findings of studies done by Bhugra P. et al[8], Jandial R. et al[9], Verma D. et al [13] and Baral R. et al[15] are consistent with findings in our study.

In our study, nearly two third (67.74%) cases had follicular cyst, 14.52% cases had serous cystadenoma, 8.06% cases corpus luteal cyst and 3.23 % cases had mature cystic teratoma and 3.23% cases had mucionus cystadenoma. The findings of our study are similar to findings in study done by Patil AS et al[4], Verma D. et al[13], Baral R. et al[15], and Khunte VP et al[16]. Patil AS et al[19] reported hemorrhagic cyst in 2.6% cases. Verma D et al[13] documented follicular cyst in 64% cases, corpus luteal cyst in 8% cases, mature cystic teratoma in 3% cases. Baral R. et al[15] reported hemorrhagic cyst and mature cystic teratoma in 3.8% and 3.5% cases respectively. Khunte VP et al[16] documented corpus luteal cyst in 8% cases, mature cystic teratoma in 3% cases, and mucinous cystadenoma in 3% cases.

Among the malignant lesions, 73.17% cases were of cervical cancer, 19.51% cases were of ovarian cancer, 4.87% cases were of endometrial cancer and 2.44% cases were of vulval cancer. The findings of our study are consistent with findings of Kumar R. et al[2], Mahapatra QS et al[17], and Jeph V et al[18]. Kumar R. et al[2] documented cervical cancer in 56.9% cases, ovarian cancer in 15.5% cases and vulval cancer in 1.7% cases. Mahapatra QS et al[17] documented cervical cancer in 83.33% cases, ovarian cancer in 10.41% cases and endometrial cancer in 6.25% cases. Jeph V. et al[18] documented cervical cancer in 67.2% cases, ovarian cancer in 21.8% cases, endometrial cancer in 8% cases and vulval cancer in 2.5% cases.

Among the malignant lesions, majority of cases (58.53%) belonged to post-menopausal age groups. 29.27% belonged to age group between 51-60 years, 24.39% each in 41- 50 and 61- 70 years age group. The findings of our study are similar to the findings of Jeph V. et al[18] who documented 29.5% cases in age group between 51- 60 years, 23.8% and 24.8% cases in age group between 41- 50 years and 61- 70 years age group.

The histopathology of the malignant lesions showed that among the cervical cancer, majority of cases (66.67%) were squamous cell carcinoma and 26.67% cases were Adeno-carcinoma. All cases of endometrial cancer were adenocarcinoma (100%). Among the ovarian malignancies, majority of cases (62.5%), were serous cystadenocarcinoma, 12.5% cases were each of mucinous cystadenocarcinoma and Granulosa cell tumors. Vulvar cancer was squamous cell carcinoma (100%). The findings of our study are consistent with findings of study done by Kumar R. et al[2] who documented 66.67% cases of squamous cell carcinoma of cervix, 84.62% cases of adenocarcinoma of endometrium, 55.56% cases of serous cystadenocarcinoma, 11.11% cases each belonging to mucionous cystadenocarcinoma and Granulosa cell tumors and squamous cell carcinoma in vulva in all cases studied by them.[2]

CONCLUSION:

Microscopic assessment and clinico-pathological correlation is necessary as grossly identifiable benign lesion may harbor focus of malignancy. It aids to appropriate management in the postoperative period. Also some double pathologies can be missed clinically so clinico-pathological correlation in all cases of hysterectomy has been proved to be important to improve the clinical outcome and post-operative management. In this study, leiomyoma was the most common benign tumour and cervical carcinoma was the commonest malignant tumour. Carcinoma cervix was the most common female genital tract cancer with ovarian cancer taking the second rank. With the aid of proper screening and medical therapies, appropriate and timely treatment should be provided to prevent the disease progressing to advanced stage. In India, inspite of introduction of pap screening programmes for early detection of cancer cervix, majority of women are still ignorant of its importance. A concerted effort should be done towards prevention of these cancers, by creating awareness through health education in addition to implementation of screening methods.

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