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Original Research Article

Histopathological Spectrum of Female Genital Tract Lesions in A Teritary Care Hospital: Puducherry

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Abstract

Context: Hystrectomy is the frequently performed gynaecological surgery for various uterine and adnexal pathologies. Varied approaches depending on the clinical features and presentation have been practiced worldwide. A detailed histopathological examination of all the specimens is mandatory to establish a comprehensive diagnosis for the patients.

Aims: The aim is to study the pattern of histopathological lesions in hysterectomy specimens in our institution and compare it with similar studies. And also to discuss briefly about the interesting incidental findings made in our institution during this study period.

Settings and Design: A retrospective descriptive study was carried on 280 hysterectomised cases over a period of one year from January 2017 to December 2017. The data regarding the patient's age, parity, type of hysterectomy and histopathological diagnosis were reviewed from the records and database was created and descriptive statistical measures were analysed using SPSS 22.0.

Results: A total of 280 cases of hysterectomies were studied. The distribution of hysterectomies was over a wide age group ranging from 29 years to 80 years, most common age group being 41-50 years. Hysterectomies done through abdominal approach (85%) were more ubiquitously practiced in our setup. Histopathologically benign neoplasms (65%) outnumbered malignant ones with leiomyoma being the most common benign lesion to be encountered.

Conclusions: Chronic cervicitis (chronic papillary endocervicitis and chronic superficial cervicitis) remains as the most frequent inflammatory pathology followed by leiomyoma. Histopathological analysis of all hysterectomy specimens is imperious in order not to miss incidental malignancies and to provide optimal management for the patient.

Keywords: Hysterectomy; Leiomyoma; Malignancy.

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Introduction

The female genital tract comprising of uterus (endometrium and myometrium), cervix, ovaries and fallopian tubes are hormonally responsive and are prone to develop various neoplastic and non neoplastic conditions [1].

The presenting complaints of most of the gynaecological problems are abnormal uterine bleeding and mass descending per vaginum. Hysterectomy is the prevailing gynecological surgery being considered as a definitive treatment in pre and post-menopausal women in entire world [2].

Abdominal, vaginal and laproscopic hysterectomies are the various commonly employed approaches in the present era depending on the clinical features [3].

Histopathological analysis of the hysterectomy specimens is mandatory for an appropriate diagnosis and to assess the pattern of lesions common in the uterus and adnexa in a particular population.

Detailed histopathological examination of the hystrectomy can sometimes yield interesting findings. Specimens which are unremarkable macroscopically can show pathological lesions, and also benign lesions can turn out to be malignant on microscopic examination.

This retrosepective study is entitiled to study the spectrum of histopathological lesions in the hysterectomy specimens at a teritary care hospital in Puducherry.

Aims and Objectives

To study the pattern of histopathological lesions in hysterectomy specimens in our institution and compare it with similar studies.

To discuss in detail about the interesting incidental findings made in our institution during this study period.

Materials and Methods

The present study is a retrospective descriptive study conducted from January 2017 to December 2017. All hysterectomy specimens received in the department of Pathology, Sri Venkateshwaraa Medical College Hospital & Research Centre, Puducherry during the indicated study period were reviewed with reference to light microscopic findings.

A total of 280 specimens of hysterectomies were analyzed grossly and microscopically. The main out comes measured were age, type of hysterectomy and histopathological diagnosis. The lesions were categorized as

a. Lesions of the cervix
b. Lesions of the uterine corpus which included the lesions of the endometrium and the myometrium
c. Lesions of the ovary
d. Lesions of Fallopian tube

A database was created and descriptive statistical measures were analysed using SPSS 22.0.

Results

A total of 280 hysterectomy specimens received in the department of pathology during one year period were studied. Hysterectomy were frequently performed in fourth decade (41-50 years) followed by patients in 31-40 years of age group (Fig. 1). Total abdominal hysterectomy (TAH) accounted for 85% (238 cases) and was the most frequently performed procedure, which was performed with or without salphingo opherectomy (unilateral/bilateral). (Fig. 2)

Vaginal hysterectomy was the least performed procedure (15%) and was the surgery of choice in uterine prolapse. On histopathology, a number of cases harboured more than one type of lesion, and each type of lesion was counted.

Non neoplastic lesions were more common accounting for 86.7% of the cases. In neoplastic

cases, benign neoplasm is counting to 182 cases (65%). Among benign neoplasm, mesenchymal tumors were more perpetual (164 cases) in the uterine corpus, followed by epithelial tumors of the ovary (19 cases). Only 7 out of 280 cases (2.5%) were malignant neoplasm.

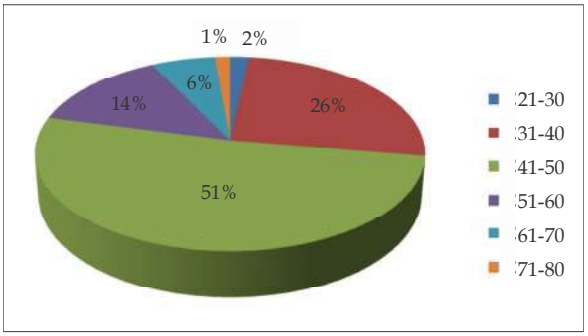

Fig. 1: Age wise distribution of cases

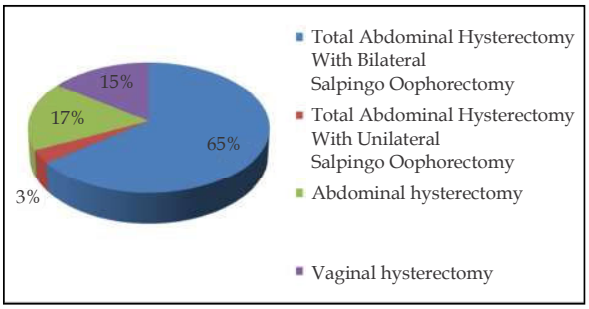

Fig. 2: Type of hysterectomy performed

Chronic papillary endocervicitis was the most common cervical pathology confronted in our institution accounting to 44.6% followed by chronic superficial cervicitis (39.2%). Cases of pelvic organ prolapse showed mainly cervical ulceration, hyperkeratosis of squamous epithelium and squamous metaplasia of the endocervix and are designated as procidential changes. Ninety percent (29/32) cases of uterine prolapse showed procedential changes. Follicular cervicitis was observed in 4 cases, two of them being associated with other lesions in myometrium (Table 1).

Benign endocervical polyp and microglandular hyperplasia was seen in three patients each. Cervical dysplasia in the form of cervical intraepithelial lesion I (CIN I-2 patients) and III (CIN III- 4 patients) were ascertained in 6 patients, all of them were asked to be on regular follow up.

Table 1: Histopathological Lesions observed in Hysterectomy Specimens

Anatomical Site	Type of Lesion	Number of Cases
Cervix	Chronic superficial cervicitis	110
	Chronic papillary endocervicitis	125
	Follicular cervicitis	4
	Procidential changes	32
	Microglandular hyperplasia	3
	Endocervical polyp	3
	Cervical fibroid	1
	Cervical dysplasia	6
Endometrium	Normal endometrium	148
	Pill endometrium	13
	Atrophic endometrium	70
	Endometrial poylp	12
	Fibroid polyp	2
	Chronic endometritis	3
	Disordered proliferative endometrium	7
	Simple hyplerplasia without atypia	27
	Endometrial carcinoma	3
	Adenosarcoma	1
Myometrium	Leiomyoma	128
	Adenomyosis	107
	Leiomyoma + adenomyosis	36
	Carcinosarcoma	1
	Leiomyosarcoma	1
Fallopian tube	Hydrosalphinx	54
	Chronic salphingitis	16
	Tubal endometriosis	1
	Hematosalphinx	27
	Paratubal cyst	58
Ovary	Serous Cystadenoma	16
	Mucinous cystadenoma	3
	Endometriosis	4
	Teratoma	3
	Fibroma	1
	Brenner	1
	Carcinosarcoma	1

In endometrium, most frequent findings were cyclical endometrium (proliferative phase - 100 cases (35.7%), secretory phase 46 cases (16.4%)). Atrophic endometrium was seen in 70 cases (25%) and benign endometrial polyp was contemplated in 12 cases (4.2%). The frequency of premalignant and malignant disorders of endometrium was around 9.6% and 1.4% respectively. (Table 2). We have come across four malignant pathologies in the endometrium which included three endometrial carcinoma and one rare incidental finding of endometrial adenosarcoma.

Table 2: Table showing the frequency of various lesions at the different sites of the uterus

Conditions	Cervix	Endometrium	Myometrium	Fallopian tube	Ovary
Physiological	Nil	218	43	124	102
Inflammatory lesion	239	3	Nil	70	Nil
Non neoplastic	34	32	107	86	153
Benign	1	2	128	Nil	24
Premalignant	6	27	Nil	Nil	Nil
Malignant	Nil	4	2	Nil	1

The most prevalent myometrial pathology encountered was leiomyoma (45.7%) followed by adenomyosis (38.2%). Leiomyomas were most common in the uterine corpus, but one case occurred in the cervix. In myometrium, leiomyomas were mostly situated in the intramural location and dual lesions of leiomyoma and adenomyosis was noticed in 12.8% of the cases (Table 3). Nearly 18.5% (24/128) of leiomyomas exhibited degenerative changes, hyaline degeneration being the most prevailing one. One case of leiomyosarcoma and one case of carcinosarcoma of myometrium was also ascertained.

Among the ovarian lesions cystic lesions which included serous cystadenoma, mucinous cystadenoma, simple cyst, dermoid cyst were more frequent (7.8%). One case of ovarian mixed mullerian tumor (carcinosarcoma) of ovary was also reported during this period.

Discussion

The most widely practiced gynaecological surgery for both neoplastic and non neoplastic lesions is hysterectomy. It has become definitive treatment option for many pelvic pathology including fibroids, abnormal uterine bleeding (AUB), endometriosis, adenomyosis, uterine prolapse (UV prolapse), pelvic inflammatory disease (PID) and various malignancies. 2,4 Symptom relief and improved quality of life makes hysterectomy a more accepted gynaecological procedure in the present days. The above study is a retrospective study carried out for a period of one year from January 2017 to December 2017.

Total of 280 hysterectomy specimens were received in department during the study period. The main objective of this study is to analyse the

Table 3: Comparison between present study and references

Author	No.of patients	Age	Type of surgery	Most common cervical lesion	Most common endometrial lesion	Most common myometrial lesion	Most common ovarian lesion
Usha et al. [2]	454	41-50	Total abdominal hystrectomy with bilateral salphingo ophorectomy	Chronic cervicitis	Atrophic	Leiomyoma	Cystic ovary
Sreedhar et al. [5]	200	40-49	Subtotal hystrectomy	Chronic cervicitis	Simple hyperplasia	Leiomyoma	Serous cystadenoma
Verma et al. [1]	152	50-60	Total abdominal hystrectomy with bilateral salphingo ophorectomy	Chronic cervicitis	Atrophic	Leiomyoma	Follicular cyst
Patil et al. [6]	150	41-50	Total abdominal hystrectomy with bilateral salphingo ophorectomy	Chronic cervicitis	Proliferative phase	Leiomyoma	
Rather et al. (7)	698	41-50	Total abdominal hystrectomy with bilateral salphingo ophorectomy	Chronic cervicitis	Atrophic	Leiomyoma	Cystic ovary
Anand et al. [3].	125	40-49	Total abdominal hystrectomy	Chronic cervicitis	Proliferative phase	Leiomyoma	Cystic ovary
Domblae et al. [8]	697	41-50	Total abdominal hystrectomy	Chronic cervicitis	Atrophic	Leiomyoma	
Baral et al. [4]	261	41-50	Total abdominal hystrectomy	Chronic cervicitis	Atrophic	Leiomyoma	Endometriosis
Our study	280	41-50	Total abdominal hystrectomy with bilateral salphingo ophorectomy	Chronic papillary endocervicitis	Atrophic	Leiomyoma	Cystic ovary

spectrum of lesions in hysterectomy specimens and to compare our findings with those of other studies and also to discuss about few alluring cases which we have encountered during the study period.

In our retrospective analytical study maximum number of patients i.e 51.4% were in the age group of 41-50 years. Evidences in literature in the form of work done by Rather GR et al., Dombale et al. and Gupta et al. have supported our findings by encountering similar findings [7,8,9].

Total abdominal hysterectomy with bilateral salphingo oophorectomy accounting to 64.6% was the mediocre surgical procedure followed by simple hysterectomy. Various studies done by Baral et al., Dombale et al. and Patil et al. have promoted our views by recording similar findings [4,6,8]. All of the patients who had undergone vaginal hysterectomy (15%) had presented with uterine prolapse.

Chronic papillary endocervicitis (44.6%) followed by chronic superficial cervicitis (39.2%) both of which constitute part of inflammatory pathologies of cervix were the most common finding histopathologically. These findings were comparable to the studies done by Usha et al and Sreedhar et al. [2,5].

Cyclical endometrium followed by atrophic endometrium was the most common (25%) endometrial lesion observed in our study similar to the observations made by Rather et al (26.53%).7 However the frequency of atrophic endometrium was less in the studies done by Verma et al and Usha et al. (19.1%) [1,2].

Endometrial hyperplasia turned out to be the most common endometrial pathology (27cases, 9.6%) in our study.

The most prevalent myometrial lesion in our study was leiomyoma (45.7%) followed by adenomyosis amounting to 38.2%. Literature evidence by Chandralekha et al. and Sharadrutha et al. have supported our findings with similar figures [10,11].

We have encountered two rare variants of myometrial pathologies during this period. The first case was a 42 year female presented with abdominal distension and myometrium shows three intramural fibroids measuring between 0.3 to 10.5x10x9.5cm. Cut surface of the largest fibroid appears grey white, fleshy and soft in consistency with focal whorling. Microscopically the leiomyoma was composed of two population of cells (epithelioid cells and clear cell) arranged in sheets, cords and peritheliomatous pattern. The epitheloid cells had eosinophilic cytoplasm and subsequent frequent population were cells with abundant clear cytoplasm (Fig. 3).

Numerous interspersed blood vessels and foci of myxoid degeneration were present. A final diagnosis of epitheloid leiomyoma was given.

Another interesting finding was encountered in a 55 year female who presented with postmenopausal bleeding. Grossly there was a poorly circumscribed mass in the myometrium. Histological sections showed epithelioid cells with similar morphology as the former case but with increased mitosis and occasional bizarre forms. (Fig. 3).

Immunohistochemical confirmation using smooth muscle actin (SMA) was done and a final diagnosis of epitheliod leiomyosarcoma was given.

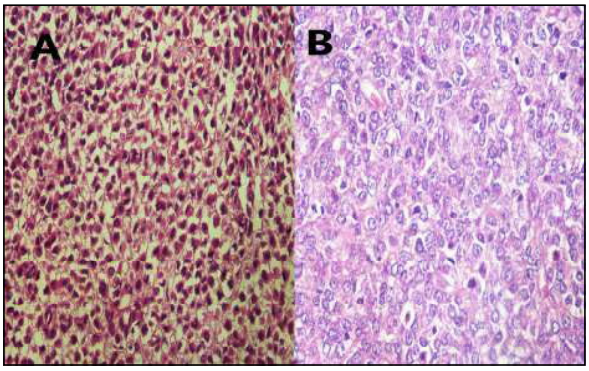

Fig. 3: Photomicrograph of epitheliod leiomyoma (A) and epitheliod leiomyosarcoma(B) showing increased mitosis in the latter. Maginification 400X (H&E)

In the fallopian tube majority of the cases did not affirm any pathological lesions. Our reports were supported by studies done by Bagwan et al and Kukreja et al. [12,13].

Inflammatory pathologies including chronic salphingitis (16 cases) and hydrosalphinx (54 cases) were the incessant findings followed by hematosalphinx. Cysts of variable morphology are frequent ovarian lesions confronted in our study comparable to the studies done by Anand et al and Rather et al. [3,7].

Mixed mullerian tumors are an uncommon biphasic tumor composed of stromal and epithelial components. Malignancy can be encountered in either one component or both the epithelial and stromal component and their nomenclature is entitled depending on the nature of the component. We in our study have come across three interesting mixed mullerian tumors one in endometrium, others in the myometrium and ovary all of which

are confirmed using immunohistochemistry.

Adenosarcoma, a rare mixed mullerian tumor of the endometrium presented as a polypoidal mass extending into cervix. Cut surface of the poylp had fleshy appearance with slit like spaces and areas of cystic degeneration filled with mucoid material (Fig. 4).

Histopathological examination from the poylpoidal growth show stromal epithelial papillae with slit like glandular infoldings. Tumor show stromal hyperplasia and is composed of cells arranged in diffuse sheets with focal areas of periglandular accentuation.

Interestingly the stromal component was accounting for > 25% of the cell type suggesting stromal overgrowth. The final diagnosis was given after immunohistochemistry for CD10 to show periglandular accentuation of the stromal cells (Fig. 5).

Fig. 4: Gross photography of ovarian adenosarcoma showing a polypoidal fleshy growth arising from endometrial cavity.

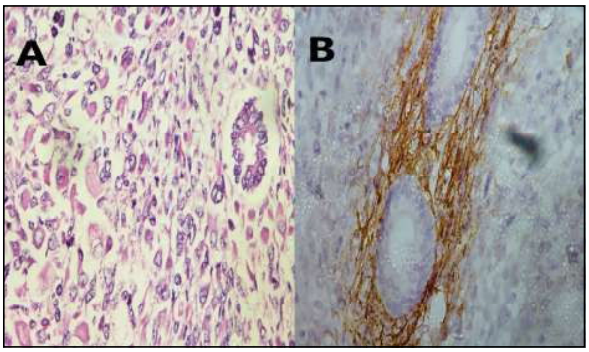

Fig. 5: (A) Photomicrograph of adenosarcoma showing benign epithelial and malignant mesenchymal component (H&E). (B) Photomicrograph showing periglandular accentuation for CD10 (IHC). Maginification 400X

A singular alluring case of malignant mixed mullerian tumor of ovary was reported during this study period in a 45 year old multiparous female, who presented with abdominal mass for past two weeks.

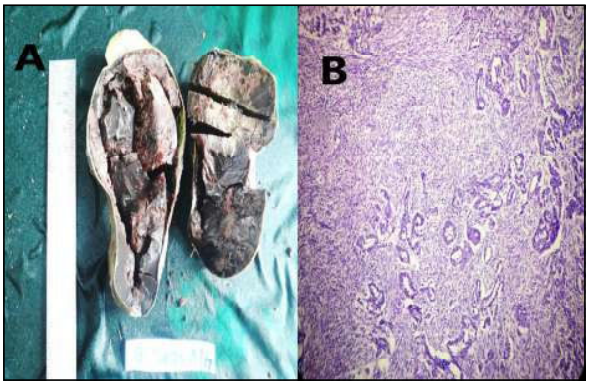

Fig. 6: A Gross photography of ovarian carcinosarcoma showing predominantly hemorrhagic areas with central grey white solid areas. B) Photomicrograph showing malignancy of both the epithelial and mesenchymal component. Maginification 100X (H&E)

Histopathological examination of the ovarian mass showed a biphasic tumor composed of malignant epithelial and mesenchymal component along with large areas of hemorrhage (Fig. 6). Immunohistochemistry (IHC) marker study for cytokeratin (CK) showed diffuse strong cytoplasmic staining of the epithelial element, while vimentin exhibited diffuse strong cytoplasmic staining of the mesenchymal element (Fig. 7).

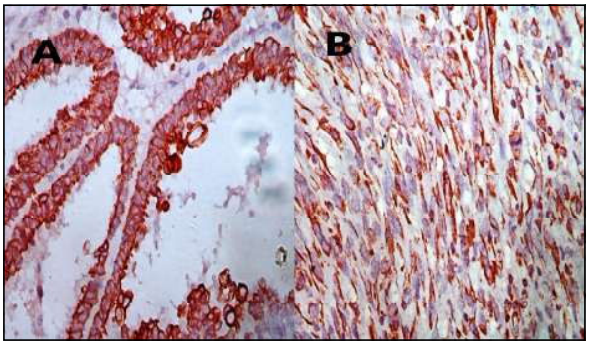

Fig. 7: A Photomicrograph of carcinosarcoma with epithelial component showing strong cytoplasmic positivity for CK. (400X, IHC) B) Photomicrograph of carcinosarcoma with mesenchymal component showing strong cytoplasmic positivity for Vimentin. (400X, IHC)

Conclusion

The above study provides a limelight on varied histopathological pattern of lesions in hysterectomy specimens. Wide spectrum of pathologies was encountered including various engrossing incidental

malignancies in our institution during the above study period. This emphazises the importance of detailed histopathological examination of all hysterectomy specimens to ensure better post operative management and follow up of patients.

Conflict of Interest: None

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