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HISTOPATHOLOGICAL SPECTRUM OF HYSTERECTOMY SPECIMENS IN TERTIARY CARE HOSPITAL: A PROSPECTIVE STUDY

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INTRODUCTION

Hysterectomy is the standard method and most regularly performed surgical technique in peri and post menopausal women in U.S.A. In India hysterectomy rate is 6% as compared to western countries where it is 10 - 20%.[1] In November 1843, Charles Clay performed the first abdominal hysterectomy in Manchester, England. In 1929, Richardson, MD, performed the first total abdominal hysterectomy. Since early 20th century, hysterectomy is the ultimate treatment of diseases of the pelvic organs such as adenomyosis, fibroid, pelvic inflammatory disease, endometriosis and cancer of the reproductive organs.[2] It is considered as a life saving measure in women with certain type of malignancies and in acute uterine bleeding. It also improves the quality of life for women with definite uterine pathologies such as endometriosis, fibroids, and uterine prolapse. With proper approach of hysterectomy procedure and accurate selection of patients the occurrence rate of morbidity and mortality is low.[3] Pathological evaluation and examination of hysterectomy specimens have diagnostic and great therapeutic importance. Incidence of uterine and adnexal pathologies varies from nation to nation and from region to region within the nation.[4] Uterus, being a vital female reproductive organ is subjected to many benign and malignant diseases. Even though many medical and conservative surgical treatment options are existing, hysterectomy still is the most commonly performed major gynaecological procedure worldwide.[5] A total hysterectomy implies the removal of the uterus and cervix. When bilateral adnexae are removed it is called as hysterectomy with Bilateral Salpingoopherectomy(BSO).Vaginal hysterectomy is performed predominantly for uterine prolapse whereas abdominal hysterectomy with or without salpingoophorectomy for fibroids and menstrual problems.[6] Before laproscopically assisted vaginal hysterectomy (LAVH),75% of hysterectomies performed were total abdominal hysterectomies(TAH) and the rest were total vaginal hysterectomies (VH). Rate of TAH decreased to 39% while that of VH remained the same (29 %) after the introduction of LAVH. In 1990, 73% of all hysterectomies were TAH which dropped to 63% in 1997 whereas the rate of LAVH, which was 0.3% in 1990, increased to 9.9%.[7] Radical hysterectomy is more extensive procedure done for cancers of uterus, cervix where surrounding tissue, upper vagina and the pelvic lymph nodes are dissected.[8] Histopathological examination of uterus and adnexa plays a crucial role in making a correct and exact diagnosis, which has a insightful impact on the management of the patient and also carries therapeutic and legal implications.[9]

AIMS AND OBJECTIVES

1. To study histopathological spectrum of hysterectomy specimens and to find out relative frequency of various lesions.
2. To study the pattern of distribution of such lesions in relation to age, parity and mode of presentation.

MATERIAL AND METHODS

- The study was conducted in the department of pathology Maharishi Markandeshwar Institute of Medical Sciences and Research (MMIMSR), Mullana (Ambala). A 2 years prospective study from 2014 to 2016 was carried out. A total of 376 cases were included in the study. Clinical indications for hysterectomy were obtained from the histopathological requisition forms/ clinical records of the patients and were recorded in the proforma. The information including the Age, mode of presentation, type of hysterectomy were also incorporated in the Proforma. The hysterectomy specimens received from department of obstetric and gynaecology MMIMSR were assessed for gross features. The specimens were fixed in 10 % buffered formalin subsequently the tissues were dehydrated with ascending grades of alcohol, cleared in xylene and embedded in paraffin. Thereafter, 3-5 microns thick paraffin sections were cut on a rotary microtome, dewaxed and stained with Haematoxylin

and Eosin. Wherever necessary, special stains such as PAS and Alcian blue were used.

OBSERVATIONS

During the study period, a total of 376 hysterectomy specimens were received and observations made are as follows:

Table.1: Types of hysterectomies

Type of hysterectomy	No. of cases (n = 376)	Percentage(%)
Subtotal hysterectomy	03	0.80
TAH without SO	154	40.96
TAH with unilateral SO	29	7.71
TAH with BSO	175	46.54
Radical hysterectomy	15	3.99

The distribution of types of hysterectomies is shown in Table.1.

TABLE: 2 AGE DISTRIBUTION

AGE GROUP (YEARS)	NO. OF CASES (n = 376)	PERCENTAGE (%)
20-30	10	2.66
31-40	135	35.90
41-50	157	41.76
51-60	51	13.57
61-70	17	4.52
>70	06	1.59

The age distribution of hysterectomy cases is shown in Table. 2

TABLE: 3 PARITY DISTRIBUTION

PARITY	NO. OF CASES (n = 376)	PERCENTAGE (%)
O	01	0.27
1	09	2.39
2	96	25.53
3	166	44.15
4	81	21.55
>5	23	6.11

The distribution of parity is shown in Table. 3.

TABLE: 4 MODE OF PRESENTATION

MODE OF PRESENTATION	FREQUENCY (n = 480)	PERCENTAGE (%)
Pelvic pain	109	22.71
Menorrhagia	115	23.96
Mass abdomen	17	3.54
Uterovaginal prolapsed	59	12.29
Cervical discharge	67	13.96
Bleeding Per Vaginum	113	23.54

The mode of presentations of hysterectomy are shown in Table. 4.

TABLE: 5 HISTOPATHOLOGICAL DIAGNOSIS OF ENDOMETRIAL LESIONS

HISTOPATHOLOGICAL DIAGNOSIS	FREQUENCY (n = 404)	PERCENTAGE (%)
PHASE OF ENDOMETRIUM		
Proliferative endometrium	155	38.36
Secretory endometrium	99	24.50
Atrophic endometrium	73	18.06
Disordered endometrium	25	6.19
ENDOMETRIAL HYPERPLASIA		
Simple hyperplasia without atypia	14	3.46
Simple hyperplasia with atypia	02	0.50
Complex hyperplasia	02	0.50
ENDOMETRIAL POLYP		
Benign polyp	19	4.70

Malignant polyp	01	0.25
ENDOMETRITIS		
Acute endometritis	01	0.25
Chronic endometritis	06	1.48
METAPLASIA		
Squamous metaplasia	01	0.25
MALIGNANT TUMORS		
Endometrial carcinoma	02	0.50
Endometrial stromal sarcoma	02	0.50
DECIDUAL REACTION	02	0.50

The histopathological diagnosis of endometrial lesions is shown in Table.5.

TABLE: 6 HISTOPATHOLOGICAL DIAGNOSIS OF MYOMETRIAL LESIONS

HISTOPATHOLOGICAL DIAGNOSIS	FREQUENCY (n = 531)	PERCENTAGE (%)
LEIOMYOMA	**109**	**20.53**
Intramural leiomyoma	80	15.06
Submucosal leiomyoma	07	1.31
Subserosal leiomyoma	22	4.14
SECONDARY CHANGES IN LEIOMYOMA	**28**	**5.28**
Leiomyoma with hyaline change	27	5.08
Leiomyoma with myxoid change	01	0.18
ADENOMYOSIS	**76**	**14.32**
MONCKEBERGS CALCIFICATION	**06**	**1.12**
ADENOMYOMA	**04**	**0.75**
NORMAL HISTOLOGY	**308**	**58.00**

The histopathological diagnosis of myometrial lesions is shown in Table.6

TABLE: 7 AGE DISTRIBUTION OF LEIOMYOMA

AGE	NO.	PERCENTAGE
20-30	03	2.19
31-40	55	40.15
41-50	68	49.64
51-60	08	5.84
61-70	02	1.45
>70	01	0.73
TOTAL	**137**	**100**

Age distribution of leiomyoma is shown in Table.7

TABLE: 8 AGE DISTRIBUTION OF ADENOMYOSIS

AGE	NO. OF CASES	PERCENTAGE (%)
20-30	00	00
31-40	30	41.10
41-50	34	46.58
51-60	08	10.95
61-70	01	1.37
>70	00	00
TOTAL	**73**	**100**

Age distribution of adenomyosis is shown in Table. 8.

TABLE: 9 HISTOPATHOLOGICAL DIAGNOSIS OF CERVICAL LESIONS

HISTOPATHOLOGICAL DIAGNOSIS	NO. OF CASES (n = 388)	PERCENTAGE (%)
Acute cervicitis	02	0.52
Chronic cervicitis	317	81.95
Squamous metaplasia	54	13.92
Tubal metaplasia	01	0.26
Microglandular Hyperplasia	01	0.26

Papillary endocervicitis	02	0.51
Endocervical Polyp	03	0.77
Cervical leiomyoma	01	0.26
CIN I	01	0.26
CIN III	03	0.77
Keratinizing squamous cell Carcinoma	01	0.26
Non Keratinizing squamous cell Carcinoma	01	0.26
Angiomyxoma of cervix	01	0.26

The histopathological diagnosis of cervical lesions is shown in Table.9

TABLE: 10 HISTOPATHOLOGICAL DIAGNOSIS OF FALLOPIAN TUBE LESIONS

HISTOPATHOLOGICAL DIAGNOSIS	RIGHT F.T	%	LEFT F.T	%
Normal	191	96.47	193	97.48
Chronic salpingitis	01	0.50	01	0.50
Endometriosis	02	1.01	00	00
Metastasis/Invasion	04	2.02	04	2.02

The Histopathological diagnosis of fallopian tube lesions are shown in Table. 10.

TABLE: 11 HISTOPATHOLOGICAL DIAGNOSIS OF OVARIAN LESIONS

HISTOPATHOLOGICAL DIAGNOSIS	RIGHT OVARY	%	LEFT OVARY	%
Normal histology	149	73.39	148	73.63
Follicular cyst	21	10.34	15	7.46
Corpus luteal cysts	14	6.89	14	6.89
Simple serous cyst	03	1.47	08	3.98
Endometriosis	02	0.98	02	0.98
Serous cystadenoma	01	0.49	00	00
Benign serous cyst adenofibroma	01	0.49	00	00
Mature cystic teratoma	02	0.98	01	0.49
Benign mucinous cystadenoma	01	0.49	05	2.48
Papillary serous adenocarcinoma	05	2.46	06	2.98
Mucinous cyst adenocarcinoma	02	0.98	01	0.49
Endometrioid carcinoma	01	0.49	00	00
Brenner's tumor	01	0.49	00	00
Granulosa cell tumor	00	0.49	01	0.49
TOTAL	**203**	**100**	**201**	**100**

The histopathological diagnosis of ovarian lesions is shown in Table.11.

DISCUSSION

Hysterectomy is the most common, major gynaecological surgery performed throughout the world. It is a successful operation in terms of symptoms relief and patient satisfaction and provides cure to many diseases involving uterus as well as the adnexae.[10] This study was conducted to analyse the histopathological spectrum, relative frequency and patterns of lesions in hysterectomy specimens in our institution and to compare the findings with other studies.

The current study was prospective in nature and presents the data on histopathological analysis of 376 hysterectomy specimens received in the department of Pathology, Maharishi Markandeshwar Institute of Medical Sciences and Research (MMIMSR), Mullana (Ambala) over a 2 year period from 2014 to 2016.

In the present study out of 376 cases, 46.54% cases had undergone TAH with BSO. Mackenzie et al. (2004)[11] have reported TAH with BSO in 50% of cases, Patil et al. (2015)[12] have reported TAH with BSO in 38.0% cases, Rather GR et al. (2013)[13] have reported TAH with BSO in 67.19% cases. The variation in the percentage of type of hysterectomy may be due to individual choice of patient and operating surgeon. It is seen in the other studies that abdominal approach was the preferred methodology of surgery.

In the present study the maximum number of patients who had undergone hysterectomy were in the age group of 41-50 years and was same as that reported by Gupta et al. (2010).[4]

In the present study the maximum cases i.e 44.15% were seen in parity 3. Similar findings were seen in the study of Sheikh H et al. (1990).[14] The pattern of parity indicated a highest prevalence in para 3. The present study revealed the most common indication for hysterectomy was menorrhagia (23.96%) followed by bleeding per vaginum (23.54%) and pelvic pain (22.71%). Other less common presentations were cervical discharge, uterovaginal prolapse and mass abdomen. Many patients presented with more than one

symptoms.Menorrhagia was reported as the most common presentation in the studies by Jamal and Baqai (2001)[15], Sobande et al. (2005)[6] and Perveen and Tayyab (2008).[16]

TABLE.17: COMPARISON OF THE ENDOMETRIAL LESIONS IN VARIOUS STUDIES

STUDY	Atrophic endometrium(%)	Disordered endometrium(%)	Endometrial hyperplasia(%)	Endometrial polyp(%)	Endometritis(%)	Malignant tumor(%)	Decidual reaction(%)
Purandere and Jhalam(1993)[17]	-	-	-	7.92	2	1.5	-
Jamal and Baqai(2001)[15]	-	-	-	-	8.46	-	-
Mehboob and Ahmed (2002)[18]	26.53	-	17.34	15.33	-	-	-
Shergill et al.(2002)[19]	-	-	-	3	-	-	-
Newman and Finan(2003)[20]	-	-	-	-	-	4	-
Gazozai et al. (2004)[21]	-	-	6	-	-	2	-
Muezzinoglu et al.(2005)[22]	-	-	7.35	4.4	1.4	1.47	-
Sarfaraz and Tariq(2005)[23]	-	-	3	3	3	-	-
Abdullah(2006)[3]	-	3.91	2.23	13.4	-	-	-
Bukhari and Sadiq(2007)[24]	-	-	4.9	3.3	-	2.4	-
Talukder(2007)[25]	-	-	1.83	2.44	3.35	-	-
Kleebkaow et al.(2008)[26]	3.8	-	40.5	-	-	-	-
Perveen and Tayyab(2008)[16]	-	-	-	1.8	-	-	-
Jaleel et al.(2009)[10]	-	-	9.63	4.81	3.61	1.8	-
Ranabhat et al.(2010)[27]	13	-	16	4.20	9.50	-	-
Ramachandran et al.(2011)[28]	26.4	-	9	1.7	-	0.8	-
Siwatch et al.(2012)[29]	-	-	0.87	3.7	0.31	-	-
Rather et al.(2013)[13]	5.44	1.14	4.4	2.43	1.54	0.56	-
Patil et al.(2015)[12]	19.3	-	14.7	-	-	-	-
Present study	18.06	6.19	4.46	4.95	1.73	1	0.50

TABLE: 22 COMPARISON OF MYOMETRIAL LESIONS IN VARIOUS STUDIES

STUDY	LEIOMYOMA(%)	ADENOMYOSIS(%)
Purandere and Jhalam(1993)[17]	36.45	58.33
Tiltman(1998)[30]	64.6	-
Jamal and Baqai(2001)[15]	35.7	30
Mehboob and Ahmed (2002)[18]	24.49	8.17
Salmon et al.(2002)[31]	3.59	17.26
Shergill et al.(2002)[19]	34	15
Gazozai et al. (2004)[21]	67	17
Muezzinoglu et al(2005)[22]	29.41	20.58
Sarfraz and Tariq(2005)[32]	58	39
Abdullah(2006)[3]	34	18.4
Bukhari and Sadiq(2007)[24]	43.34	36.24
Talukder et al. (2007)[25]	17.07	3.96
Perveen and Tayyab(2008)[16]	68.5	33.3
Jaleel et al.(2009)[10]	45.18	19.27
Ranabhat et al.(2010)[27]	30.30	28
Ramachandran et al.(2011)[28]	22.9	12.9
Shrestha et al.(2012)[33]	16.3	45
Rather et al.(2013)[13]	38.8	21.91
Patil et al. (2015)[12]	24	13.3
Present study	20.53	14.32

TABLE: 26 COMPARISON OF CERVICAL LESIONS IN VARIOUS STUDIES

Study	Chronic cervicitis (%)	Endocervical polyp(%)	Cervical intraepithelial neoplasia(%)	Malignant tumors(%)
Miller and Mich(1945)[34]	7.7	-	-	-
Treloar et al.(1999)[35]	-	-	-	0.8
Jamal and Baqai(2001)[14]	41.53	-	-	-
Ceci et al.(2002)[36]	-	16.02	-	-
Mehboob and Ahmad(2002)[17]	38.77	-	-	1.02
Salmon et al.(2002)[31]	-	-	0.71	-
Newman and Finan(2003)[19]	-	-	12	-
Muezzinoglu et al. (2005)[21]	-	-	1.4	-
Bukhari and Sadiq(2007)[23]	6.6	-	-	1.41
Talukder et al. (2007)[24]	87.80	-	-	2.44
Perveen and Tayyab(2008)[15]	-	-	-	3.7
Jaleel et al.(2009)[10]	-	-	-	1.2
Ranabhat et al.(2010)[26]	-	3.50	3	0.60
Ramachandran et al.(2011)[27]	-	-	0.8	-
Rather et al.(2013)[29]	89.39	0.85	0.14	0.56
Patil et al. (2015)[12]	77.3	-	2.7	1.4
Present study	82.48	0.77	1.03	0.52

Majority of the cases in the present study revealed no pathological lesions in the fallopian tubes. The only significant lesions were two cases of salpingitis, two cases of endometriosis and four cases of metastasis. Bagwan et al. (2004)[37] in their study also found majority of the fallopian tubes to be histologically unremarkable. Major pathological lesions reported by them comprised of salpingitis (10.19 %), hydrosalpinx (7.86%), ectopic pregnancy (11.79%) and paratubal cysts (4.90%). Other lesser common lesions reported in their study included hematosalpinx, pyosalpinx, salpingitis isthimica nodosa, endometriosis, walthard cell nests, torsion and malignant tumors. The wider range and higher percentage of pathological lesions reported in their study could possibly be because they had included tubectomy as well as SO in addition to hysterectomy specimens in their study which increased the chances of finding significant lesions. Szajnbok Sobrinho et al. (1990)[38] also found salpingitis to be the commonest fallopian tube lesion in their study.

Non- neoplastic cysts are very commonly seen in hysterectomy specimens. In the present study follicular cysts were the most common ovarian lesions observed. (10.34% in right sided ovary and 7.46% in left sided ovaries). Similar findings were reported by Jamal and Baqai (2001)[14] and Perveen and Tayyab (2008)[15] who found cysts to be the commonest lesions in the ovaries. Jaleel et al. (2009)[10] reported ovarian cysts in 6.62% cases.

The cysts observed in the present study had variable morphology and included follicular cysts, corpus luteal cysts and simple serous cysts. Follicular cysts were the most common. Szajnbok Sobrinho et al. (1990)[38] also reported follicular cysts to be the commonest.

ENDOMETRIOSIS

The ovary is the most common site of endometriosis as defined by the presence of endometrial glands and stroma outside the uterus.[39]

In the present study endometriosis was observed in 2 cases(0.98%) each in right sided as well as left sided ovary. This is comparable to that reported by Rather et al.(2013)[40] and Jaleel et al.(2009).[10] Perveen and Tayyab(2008)[15] however reported a higher incidence of endometriosis i.e 12.9%.

OVARIAN TUMORS

There are numerous types of ovarian tumors, both benign and malignant. Benign ovarian tumors usually grow slowly and rarely undergo malignant transformation. Benign cystic teratomas are the most common benign ovarian tumors. Ovarian cancer is the second commonest malignancy of the female genital tract.

In the present study ovarian tumors were observed in 7.36% of right sided ovaries and 6.93% of left sided ovaries. This incidence is close to that reported by Talukder et al.(2007)[41] who reported ovarian tumors in

5.06% cases. Samaila Modupeola et al. (2009)[42] reported ovarian tumors in 9.77% cases.

The ovarian tumors observed in the present study included
Cystadenomas (serous and mucinous).
Mature cystic teratoma.
Papillary serous adenocarcinoma.
Mucinous cyst adenocarcinoma.
Endometrioid carcinoma.
Brenner's tumor.
Granulosa cell tumor.

Neoplastic conditions of the ovaries form a complicating and mysterious subject in the history of oncology with a varied histogenesis.[43] Ovarian cancer is the 7th leading cause of cancer death among women worldwide and in India it is 7.8% in different parts of the country.[44] Histomorphological study of tumor is still gold standard method.

SUMMARY AND CONCLUSION

The present study was conducted in the department of Pathology, Maharishi Markandeshwar Institute of Medical Sciences and Research (MMIMSR), Mullana (Ambala) and included all the hysterectomy specimens received in the department over a period of two years from 2014 to 2016. The study was prospective in nature. A total of 376 cases were included in the study. Type of hysterectomy included TAH with bilateral SO (46.54%) followed TAH without SO (40.96%) and of TAH with unilateral SO (7.71%) cases.

Radical hysterectomy (3.99%) followed by subtotal hysterectomy (0.80%) cases. Majority of cases i.e 41.76% fell in the age group of 41-50 years. The youngest patient was 21 and oldest was 80 years old.

Maximum cases ie 44.15% were multiparous while nullipara comprised of only one case i.e 0.27%.

The commonest mode of presentation was menorrhagia i.e 23.96% cases followed by bleeding per vaginum in 23.54% cases and pelvic pain in 22.71% cases. The other modes of presentations were uterovaginal prolapse, cervical discharge and mass abdomen.

Endometrium pathology included 155 (38.36 %) endometrium in proliferative phase followed by 99(24.50%) cases in secretory phase, 73(18.06) cases of atrophic endometrium and 25(6.19%) cases revealed disordered endometrium, 14(3.46%) cases were of simple hyperplasia without atypia and 2(0.50%) cases each of simple hyperplasia with atypia and complex hyperplasia. Endometrial polyps were observed in 20(4.95%) cases. Endometritis was seen in 7(1.73%) cases, out of which 6(1.48%) cases were of chronic endometritis and 1(0.25%) case was of acute endometritis. 2(0.50%) cases of decidual reaction were seen. 2(0.50%) cases each of endometrial carcinoma and endometrial stromal sarcoma were observed.

Myometrium pathology included majority of the cases i.e 308(58.00%) of normal histology. The next major group was formed by leiomyomas with 109(20.53%) cases followed by adenomyosis with 76(14.32%) cases, 28(5.28%) cases were of secondary changes in leiomyomas, 6(1.12%) cases of Monckebergs calcific sclerosis and 4(0.76%) cases of adenomyoma. The maximum cases of leiomyoma was observed in age group of 41-50 years. Adenomyosis was found most frequently in 41-50 years of age.

Cervical pathology included majority of the cases i.e 318 (81.96%) of chronic cervicitis followed by 54 (13.92%) cases of squamous metaplasia, 1(0.26%) case of tubal metaplasia and 2(0.52%) cases of acute cervicitis. Endocervical polyp was seen in 3(0.77%) cases followed by papillary endocervicitis which was seen in 2(0.51%) cases and 1(0.26%) case each of microglandular hyperplasia and cervical leiomyoma. Cervical intraepithelial neoplasia was seen in 4(1.03%) cases followed by 2(0.52%) cases of squamous cell carcinoma. There was 1(0.26%) case of angiomyxoma of cervix.

Fallopian tube pathology included majority of the cases i.e 384(96.98%) of normal histology followed by 8 (2.02%) cases which showed regional metastasis or invasion by tumor. Chronic salphingitis and endometriosis were seen in 2(0.50%) cases.

Right ovary was removed along with hysterectomy in 203 cases. Majority of the cases i.e 149(73.39%) showed normal histology of the ovary. Follicular cysts were observed in 21(10.34%) cases, corpus luteal cysts in 14(6.89%) cases and simple serous cyst in 3(1.47%) cases. Endometriosis and dermoid cysts were observed in 2(0.98%) cases each. 1(0.49%) case each of serous cystadenoma, cyst adenofibroma of serous type, mature cystic teratoma, benign mucinous cystadenoma, endometrioid carcinoma, Brenner tumor were observed. There were 5(2.46%) cases of Papillary serous adenocarcinoma.

Left ovary was removed along with hysterectomy in 201 cases. The ovary was histologically unremarkable in majoriry of the cases i.e 148 (73.63%). Follicular cyst were observed in 15(7.46%) cases, corpus luteal cyst in 14(6.96%) cases and simple serous cysts in 8 (3.98%) cases. Endometriosis was seen in 2(0.98%) cases. Benign mucinous cystadenoma were seen in 5(2.48%) cases and papillary serous adenocarcinoma in 6(2.98%) cases. One (0.49%) case each of mature cystic teratoma, mucinous cyst adenocarcinoma, granulosa cell tumor were also observed.

The present study provides a limelight on various histopathological changes and also a fair insight into the histological patterns of lesions in hysterectomy

specimens in our institute. Leiomyoma is the most common pathology found in our study which is also true for other countries. Benign pathologies are more common than their malignant counterparts. Histopathology can diagnose unusual malignancies, thus is obligatory for confirming diagnosis and ensuring optimal management in particular of malignant disease. It also detects quite a few lesions which are seen as pure incidental findings. Therefore, it should be obligatory that every hysterectomy specimen, even if it grossly appears to be normal should be subjected to detailed histopathological examination so as to guarantee a better postoperative management.

REFERENCES

1. Singh A, Arora AK. Why hysterectomy rate are lower in India. Indian J Community Med., 2008; 33(3): 196.
2. Nausheen F, Iqbal J, Bhatti FA, Khan AT, Sheikh S. Hysterectomy the patients perspective. Annals Gynecol, 2004; 10: 339-41.
3. Abdullah LS. Hysterectomy: A clinicopathological correlation. Bahrain Medical Bulletin, 2006; 28(2): 1-6.
4. Gupta G. Hysterectomy: A clinicopathological correlation of 500 cases. Int J Gynaecol Obstet, 2010; 14(1): 145-57.
5. Wu JM, Wechter ME, Geller EJ. Hysterectomy rates in the United States in 2003. J Obstet Gynaecol, 2007; 110(5): 1091-95.
6. Sobande AA, Eskander M, Archibong EL. Elective hysterectomy: A clinicopathological review from Abha catchment area of Saudi Arabia. West Afr J Med., 2005; 24: 31-5.
7. Farquhar CM; Steiner CA. Hysterectomy rates in the United States 1990-1997. Obstet Gynecol, 2002; 99(2): 229-34.
8. Conley GL. About Hysterectomy-Surgical removal of the uterus or womb. When you need an operative. American College of Surgeons, 1-11.
9. Jaleel R, Khan A, Soomro N. Clinicopathological study of abdominal hysterectomy. Pak J Med Sci., 2009; 25(4): 630-34.
10. Salmon HA, Smith JHF, Balsitis M. Is microscopic assessment of macroscopically normal hysterectomy specimens necessary? J Clin Pathol, 2002; 55(1): 67-68.
11. Mackenzie IZ, Naish C, Rees M, Manek S. 1170 consective hysterectomies: indications and pathology. J Br Menopause Soc., 2004; 10(3): 108-112.
12. Patil H et al. Histopathological Findings in Uterus and Cervix of Hysterectomy Specimens. MVP Journal of Medical Sciences, 2015; 2(1): 26-29.
13. Rather GR, Gupta Y, Bardhwaj S.Patterns of Lesions in Hysterectomy Specimens: A prospective study. JK Sci J Med Edu Res., Apr-Jun, 2013; 15(2): 63-68.
14. Sheikh H, Khan KS. Adenomyosis in Pakistani women: four year experience at the Aga Khan University Medical Centre, Karachi. J Clin Pathol, 1990; 43: 817-819.
15. Jamal S, Baqai S. A clinicohistopathological analysis of 260 Hysterectomies. Pak J Pathol, 2001; 12(2): 11-14.
16. Perveen S, Tayyab S. A clinicopathological review of elective abdominal hysterectomy. J Surg Pak, 2008; 13(1).
17. Purandare S, Jhalam L. Pathological picture in hysterectomy done for abnormal uterine bleeding. J Obstet Gynecol India, 1993; 43(1-5): 418-421.
18. Mehboob R, Ahmad N. Unexpected pathology at vaginal hysterectomy for genital prolapse. Pak J Med Res., 2002; 41(4).
19. Shergill SK, Shergill HK, Gupta M, Kaur S. Clinicopathological study of hysterectomies. J Indian Med Assoc, 2002; 100(4): 238-239.
20. Newman C, Finan MA. Hysterectomy in women with cervical stenosis: surgical indications and pathology. J Reprod Med., 2003; 48(9): 672-676.
21. Gazozai S, Bugti QA, Siddiqa A, Ehsan N. Excessive uterine haemorrhage – a histopathological study. Gomal J Med Sci., 2004; 2(1): 13-15.
22. Muezzinogle B, Doger E, Yildiz DK. The pathologic spectrum of prolapsed uteri: histopathologic evaluation of hysterectomy specimens. J Gynecol Surg, 2005; 21(3): 133-135.
23. Sarfarz T, Tariq H. Histopathological findings in menorrhagia- a study of 100 hysterectomy specimens. Pak J Pathol, 2005; 16(3): 83-85.
24. Bukhari U, Sadiq S. Analysis of the underlying pathological lesions in hysterectomy specimens. Pak J Pathol, 2007; 18(4): 110-112.
25. Talakdur SI, Haque MA, Huq MH, Alam MO, Roushan A, Noor Z, Nahar K. Histopathological analysis of hysterectomy specimens. Mymensingh Med J., 2007; 16(1): 81-84.
26. Kleebkaow P, Maneetab S, Woraluk S, Seejorn K, Thinkamrop J, Komwilaisak R. Preoperative and postoperative agreement of histopathological findings in cases of endometrial hyperplasia. Asian Pacific J Cancer Prev., 2008; 9: 89-91.
27. Ranabhat SK, Shrestha R, Tiwari M, Sinha DP, Subedee LR A retrospectivehistopathological study of hysterectomy with or without Salpingo-Ophorectomy specimens. JCMC, 2010; 1(1): 26-29.
28. Ramachandran T, Sinha P, Subramanium. Correlation between Clinico-pathological and Ultrasonographical Findings in Hysterectomy. JCDR, Aug, 2011; 5(4): 737-40.
29. S. Siwatch, R. Kundu, H. Mohan, and A. Huria. Histopathological audit of hysterectomy specimen in a tertiary care hospital. Sri Lanka Journal of Obstetrics and Gynaecology, 2012; 18: 155-158.
30. Tiltman AJ. Leiomyomas of the uterine cervix: a study of frequency. Int J Gynecol Pathol, 1998; 17(3): 231-234.
31. Salmon HA, Smith JHF, Balsitis M. Is microscopic assessment of macroscopically normal hysterectomy

specimens necessary? J Clin Pathol, 2002; 55(1): 67-68.
32. Sarfarz T, Tariq H. Histopathological findings in menorrhagia- a study of 100 hysterectomy specimens. Pak J Pathol, 2005; 16(3): 83-85.
33. Shrestha A, Shrestha R, Sedhai LB, Pandit U. Adenomyosis at hysterectomy: prevalence, patient characteristics, clinical profile and histopathological findings. Kathmandu Univ Med J., 2012; 37(1): 53-56.
34. Miller NF, Mich AA: Hysterectomy. Therapeutic Necessity or Surgical Racket? Am J Obstet Gynecol, 1945; 51: 804-810.
35. Treloar SA, Do KA, O'Connor VM, O'Connor DT, Yeo MA, Martin NG. Predictors of gysterectomy: an Australian study. Am J Obstet Gynecol, 1999; 180: 945-954.
36. Ceci O. Comparison of hysteroscopic and hysterectomy findings for assessing the diagnostic accuracy of office hysteroscopy. Fertil Steril, 2002; 78(3): 628-631.
37. Bagwan IN, Harke AB, Malpani MR, Deshmukh SD. Histopathological Study of Spectrum of Lesions Encountered in the Fallopian Tube. Obstet Gynecol, 2004; 54(4): 379-382.
38. Szajnbok Sobrinho M, Goncalves WJ, Nicolau SM, Girao MJ, Baracat EC, Novo NF, De Lima GR. Pathology associated with uterine leiomyoma: review of 600 cases. Rev Paul Med., 1990; 108(6): 252-256.
39. Olive DL, Schwartz LB. Endometriosis. N Engl J Med., 1993; 328: 1759-1769.
40. Shagufta N, Pervez, Khalid J, Mehr O. Hysterectomy: A Clinicopathological Correlation. KJIMS, 2014; 7(2).
41. Talakdur SI, Haque MA, Huq MH, Alam MO, Roushan A, Noor Z, Nahar K. Histopathological analysis of hysterectomy specimens. Mymensingh Med., J 2007; 16(1): 81-84.
42. Samaila Modupeola OA, Adesiyun AG, Agunbiade OA, Mohammad-Duro A. Clinicopathological assessment of hysterectomies in Zaria. Eur J Gen Med., 2009; 6(3): 150-153.
43. Misra RK, Sharma SP, Gupta U, Gaur R, Mishra SD. Pattern of ovarian neoplasm in eastern UP. J Obstet Gynecol India, 1991; 30: 242-46.
44. Basu P, De P, Mandal S, Ray K, Biswas J. Study of 'patterns of care' of ovarian cancer patients in a specialized cancer institute in Kolkatta, eastern India. Indian J cancer, 2009; 46(1): 28-33.