

A Histopathological Audit of Hysterectomy At Teaching Hospital

Dr. Asiya Shaikh¹, Dr Mangal Kaname²

¹Senior resident, Department of pathology, ESI-PGIMS Hospital, Andheri, Mumbai-400093, INDIA

²Senior resident, Department of pathology, ESI-PGIMS Hospital, Andheri, Mumbai-400093, INDIA

Abstract:

Introduction: Women worldwide suffer from gynecological and obstetric disorders that require hysterectomy as a treatment option.¹ Hysterectomy means surgical removal of the uterus is the second most frequently performed major surgical procedure in females worldwide next to caesarean section.² The present observational study was conducted to study and analyse the various indications of hysterectomy, spectrum of histopathological changes encountered in hysterectomy specimen and to study correlation between preoperative diagnosis and histopathologic findings.

Materials and Methods: The present study was undertaken in the Department of Pathology, of the parent institute during the period of November 2017 to October 2019. All specimens of hysterectomy sent to pathology department were included in study. All obstetrics hysterectomies specimens received were excluded from the study.

Results: There were total 300 patients. Majority of the patients were from the age group of 41-50 years of which majority were postmenopausal. There was significant association between clinical and histopathological findings. Indication for hysterectomy for majority of patients was fibroids followed by prolapse and histopathology showed leiomyoma for majority of the cases.

Conclusion: Histopathological analysis of hysterectomy is necessary for diagnostic purpose and to know lesions common in uterus and adnexa in particular population. Since, hysterectomy is major surgery, procedure is associated with risk of complication, the indication for hysterectomy should be carefully analysed.

Key Words: Hysterectomy, medical audit, histopathology.

Date of Submission: 02-09-2022

Date of Acceptance: 15-09-2022

I. Introduction:

The diseases of uterus vary from inflammatory lesions to neoplastic including benign and malignant tumors. Many treatment options are available nowadays including medical and conservative surgical procedures but hysterectomy remains the most preferred method to manage gynecological disorders.³ However, like any other surgery, hysterectomy is also associated with intraoperative and postoperative complications. It has led to a lot of debate owing to physical, emotional, economic, sexual, and medical significance to women.⁴ Histopathological examination (HPE) of specimens is necessary for both diagnostic and therapeutic purposes, mainly in patients with genital cancer where adjuvant therapy depends on the grade of the lesion and extent of invasion. Conversely, in any patients with suspicion of malignancy, HPE helps in ruling it out. However, for the disease such as adenomyosis the definitive diagnosis is only established by HPE.⁵ Thus, Hysterectomy is commonly performed gynecological surgical procedure and provides whole uterus and cervix with associated pathology so that adequate sampling is done and helps arrive accurate diagnosis without sampling error.

Aim: To study and analyse various indications of hysterectomy.

To study correlation between pre-operative diagnosis and histopathologic findings.

II. Material and Methods:

The present study was undertaken in the Department of Pathology, of the parent institute during the period of November 2017 to October 2019. All specimens of hysterectomy sent to pathology department were included in study. All hysterectomies specimens were analysed and included in the study sample. The clinical history of all cases during this period was collected from records and slides stained with hematoxylin and eosin was examined. Pathological findings in the uterus, cervix, ovaries and tubes were noted. At the end main post-operative histopathology diagnosis was recorded. Pre-operative indication was compared with histopathology report after surgery.

Following inclusion and exclusion criteria were adopted in this study.

INCLUSION CRITERIA:- All hysterectomies specimens received in tertiary care hospital in the Department of Pathology.

EXCLUSION CRITERIA:- All obstetrics hysterectomies specimens received in tertiary care hospital in the Department of Pathology.

Total 300 specimens were received in the study duration. All the specimens were subjected to a careful and detailed gross examination. All the specimens collected were fixed in buffered neutral formalin for a period of 12-24 hrs. 10% formalin fixed and paraffin embedded tissue sections from these specimens were used for microscopic study. 4 to 6 μ thick sections were being prepared and stained routinely with H&E. H&E stains were studied and classified into various benign and malignant lesions.

III. Results:

STATISTICAL ANALYSIS:

- Results are presented as Mean \pm SD and range for quantitative data and number and percentages for qualitative data.
- Group- wise comparisons were made by Chi-square test.
- P value of 0.05 or less was considered for statistical significance.

There weretotal 300 cases in this study and majority of the patients were from the age group of 41-50 years (47.67%).The mean age among the distribution of cases was 47.28 \pm 13.12years. Out of 300 cases most of the patients were postmenopausal (68%) while 32% were premenopausal.

Table 1: Distribution according to presenting symptoms among patients

Symptoms	No. of Patients (n=300)	Percentage
Dysmenorrhea	62	20.67
Pain in abdomen	57	19.00
Menorrhagia	34	11.33
Postmenopausal bleeding	33	11.00
White discharge	21	7.00
Irregular menstrual bleeding	31	10.33
Abnormal uterine bleeding	21	7.00
Dyspareunia	18	6.00
Prolapse	40	13.33
Post coital bleeding	09	3.00
Asymptomatic	03	1.00
Mass in abdomen	01	0.33

Among the comorbidities of the patients, maximum numbers of patients had anemia (40.33%) as comorbidity followed by hypertension (27.67%), diabetes mellitus (14.33%), thyroid disorders (11.33%), cardiac diseases (7%) and asthma (5.67%). The maximum numbers of patients operated by Total abdominal hysterectomy (52.67%) followed by Total abdominal hysterectomy with BSO (31.67%), Vaginal hysterectomy (13%), Wertheim's (2%), and only 2 (0.67%) patients by Total abdominal hysterectomy with Oophorectomy. Indication for majority of patients was for fibroids (18%) followed by prolapse (12.67%). Postmenopausal bleeding was indicated in 22 (7.33%) patients.

Table 2: Distribution according to histopathological findings among patients

Histopathological findings	No. of Patients (n=300)	Percentage
Adenomyosis	43	14.33
Chronic Cervicitis	13	4.33
Leiomyoma	58	19.33

A Histopathological Audit Of Hysterectomy At Teaching Hospital

Atrophic Endometrium	08	2.67
Carcinoma Cervix	04	1.33
Senile Cystic atrophy	35	11.67
Chocolate Cyst of Ovary	05	1.67
Choriocarcinoma	01	0.33
Proliferative endometrium	27	9.00
Secretory endometrium	06	2.00
Endometritis	06	2.00
Papillary endocervicitis	09	3.00
Squamous metaplasia of endocervix	13	4.33
Chronic Salpingitis	01	0.33
UV prolapse	05	1.67
Dermoid Cyst	01	0.33
Endometrial adenocarcinoma	12	4.00
Endometrial Stormal Sarcoma (low grade)	03	1.00
Endometrial Stormal Sarcoma (high grade)	02	0.67
Endocervical polyp	01	0.33
Unremarkable	69	23.00

The above table shows histopathological findings among patients. Among 300 specimens, majority of them showed leiomyoma (19.33%) followed by adenomyosis (14.33%), 69 (23%) specimens were unremarkable.

Sensitivity	67.97%
Specificity	56.52 %
Positive Likelihood Ratio	1.56
Negative Likelihood Ratio	0.57
Disease prevalence	77.00% (*)
Positive Predictive Value	83.96% (*)
Negative Predictive Value	34.51 % (*)
Accuracy	65.33% (*)

The above table shows association of agreement between clinical and histopathological findings. It was observed that sensitivity of clinical finding was 67.97%, specificity 56.52% and accuracy of 65.33%.

In comparison between Clinical & Histopathological Diagnosis, the specimen wise accuracy in histopathological diagnosis varied as per different clinical features and indications for hysterectomy. Out of 7 clinical cases of ovarian cyst, there was one unremarkable histopathology report giving the concordant rate of 85.71%. In 14 cases of cervicitis, there were 3 unremarkable cases with a concordant rate of 82.35%. In 30 cases

of endometrial hyperplasia, there were 17 unremarkable Histopathology diagnosis giving a concordant rate of 43.33%. In all 63 fibroids cases, Histopathology showed signs of Leiomyoma with 100% concordance. There were 196 concordant cases and almost 104 discordant cases with an overall accuracy of 65.33%.

IV. DICUSSION:

The present was observational study undertaken to study correlation between pre-operative diagnosis and histopathologic findings in a tertiary care centre.

Table 3: Table showing comparison of age among various studies:

Author	No of specimen	Mean age
Acharya S et al ⁸	145	45.5
SanamMoradan et al ⁶	163	49.8±7.8
Prusty RK et al ⁷	5567	46.34±7.82
Present study	300	47.28 ±13.12

Table no 4: Table showing comparison of symptoms among various studies:

Symptoms	ArzooAminet al ¹⁰	SabitaShrestha et al ⁹	SanamMoradan et al ⁶	Present study
Dysmenorrhea	52%	10.8%	55.2%	20.67%
Pain in abdomen	---	40.5%	---	19%
Menorrhagia	---	46.8%	13.5%	11.33%
Postmenopausal bleeding	3.3%	5%	---	11%
Prolapase	30%	---	---	13%

Pandey D¹³ quoted 39.8% and Acharya S⁸ found 40.3% fibroid as indication for hysterectomy similar to our observation. In a population-based study done by Lui F et al¹⁴ 70% of patients had hysterectomy for fibroid. In contrast to our result, DUB was the most common clinical diagnosis in some of the studies done by Gupta K et al and Bhatti K et al^{15,16}

The other clinical diagnosis were ovarian mass (18.9%), DUB (11.7%) and cervical dysplasia (7.2 %). Jha R et al¹⁷ showed ovarian mass in 14.9% and DUB in 7.7% of cases.

Table no 5: Table showing comparison of indication of hysterectomy among various studies:

Indication for hysterectomy	ArzooAmin et al ¹⁰	SabitaShrestha et al ⁹	Arunadevi et al ¹¹	Present study
Fibroids	32.5%	45.9%	30.5%	18.00
Prolapse	24.4%	---	29.5%	12.67
Postmenopausal bleeding	---	---	1.5%	7.33
Abdominal pain	---	---	---	6.67
Irregular menstrual bleeding	---	18.9%	---	6.33
Abnormal uterine bleeding	5.7%	11.7%	20.5%	5.67

Among 300 specimens, majority of them showed leiomyoma (19.33%) followed by adenomyosis (14.33%). 69 (23%) specimens were unremarkable.

Table no 6: Table showing comparison of histopathological findings among various studies:

Histopathological findings	HarshalPatilet al ¹²	SabitaShrestha et al ⁹	Arunadevi et al ¹¹	Present study
Adenomyosis	13.3%	5.4%	9.5%	14.33
Chronic Cervicitis	---	5.4%	5.5%	4.33
Leiomyoma	24%	42.3%	32%	19.33
Endometrial Stromal Sarcoma	---	0.9%	1%	1.33%
Endocervical polyp	---	---	2.5%	0.33

Normal	---	5.4%	---	23.00
--------	-----	------	-----	-------

It is observed that sensitivity of clinical finding was 67.97%, specificity 56.52% and accuracy of 65.33%.

The present study provides a limelight on various histopathological changes in hysterectomy specimens. Various types of lesions are encountered when hysterectomy specimens are subjected to histopathological examination. Thus, it is mandatory to study each hysterectomy specimen to ensure better postoperative management.

GROSS AND HISTOPATHOLOGY IMAGES:



FIG1: LEIOMYOMA UTERUS- Intramural, sharply circumscribed, firm, grayish white, whorled surface, obliterated uterine cavity. **FIG2: LEIOMYOMA-** Fascicular pattern of smooth muscle bundles separated by well vascularised connective tissue (H&E, 10X)

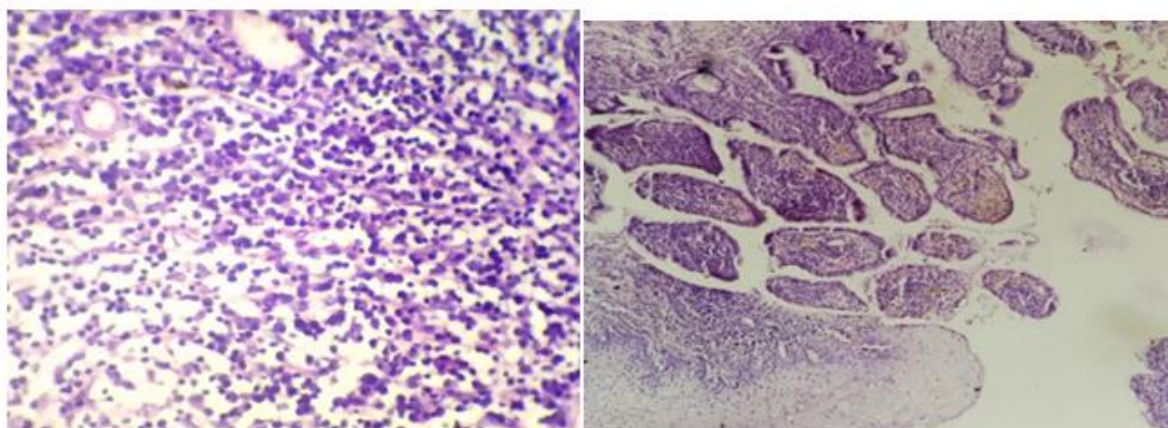


FIG3: ENDOMETRITIS: Spindly stroma with edema with dense lymphoplasmacytic (predominantly plasma cells) inflammatory infiltrate (H&E, 10X)

FIG 4: PAPILLARY ENDOCERVICITIS: Chronic cervicitis with papillary architecture, papillae short, edematous, with lymphocytes (H&E, 10X).

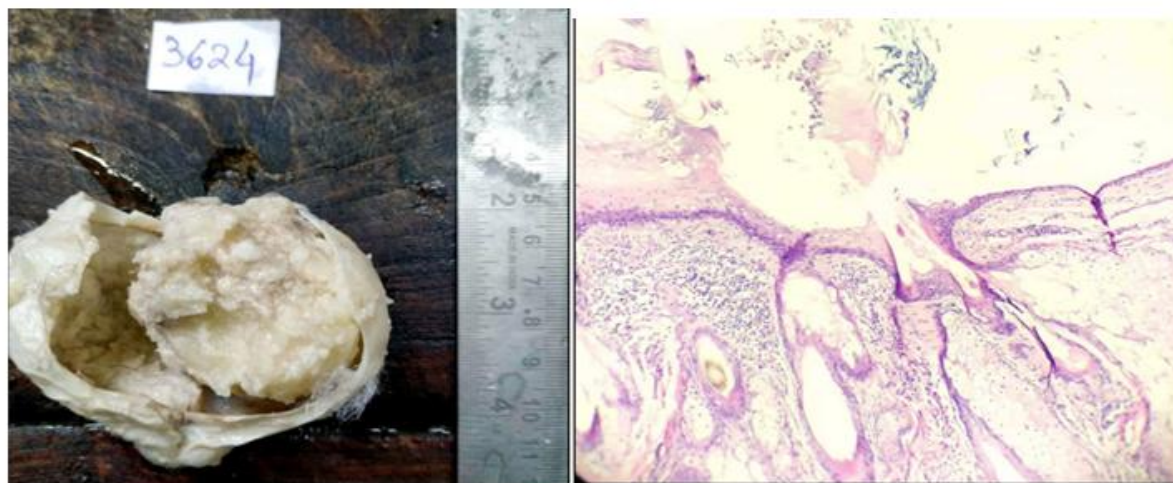


FIG 5: DERMOID CYST OVARY- Cystic content contain greasy material composed of keratin and hair. **FIG 6: DERMOID CYST OVARY-** Cyst lined by skin, with its adnexa hair follicle, sebaceous gland, lumen contains keratinous debris.(H&E,40X).

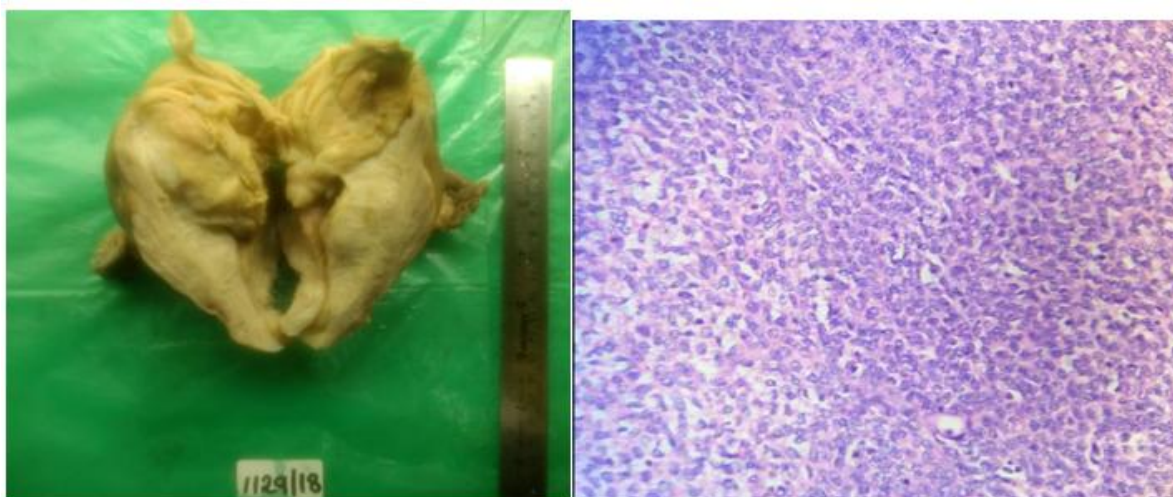


FIG7: ENDOMETRIAL STROMAL SARCOMA (LOW GRADE)- Polypoidal, solid, soft, yellowish mass, invading myometrium at fundic region and protruding into endometrial cavity. **FIG 8:ENDOMETRIAL STROMAL SARCOMA(LOW GRADE)-** Diffuse proliferation of uniform oval cells with scant pale eosinophilic cytoplasm and uniform nuclei showing vesicular chromatin and inconspicuous nucleoli (H&E, 40X).

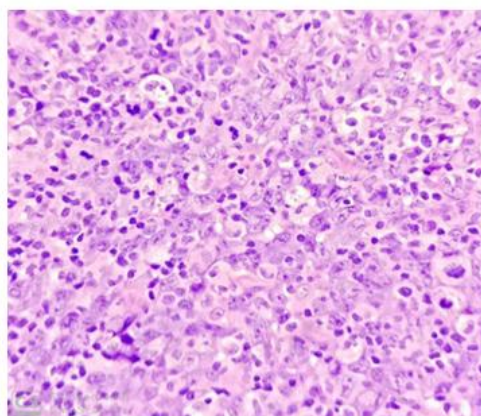


FIG9: ENDOMETRIAL STROMAL SARCOMA(HIGH GRADE)- Pleomorphic round to oval spindled cells with high mitotic rate (H&E, 40X).

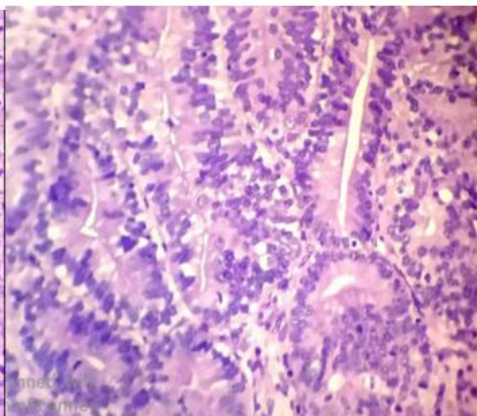


FIG 10: WELL DIFFERENTIATED ENDOMETRIAL ADENOCARCINOMA- Back to back endometrial type of glands with atypia and no intervening stroma, glands with budding and branching. (H&E, 40X).

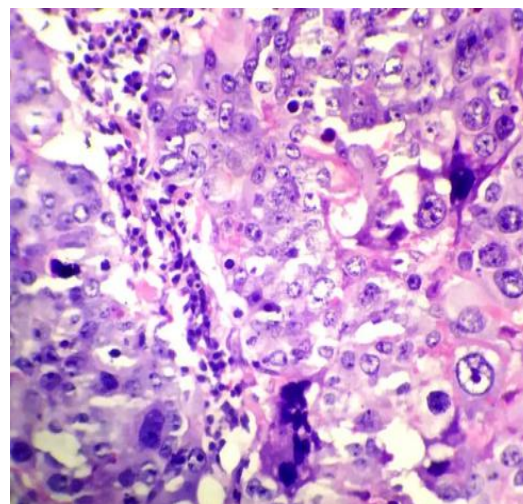


FIG11: CHORIOCARCINOMA OF UTERUS Uterus bulky, destructive masses in uterus with central hemorrhage and extensive necrosis, tumor is infiltrating and replacing myometrium. **FIG 22: CHORIOCARCINOMA OF UTERUS** Tumor is infiltrative with triphasic malignant cells of trophoblast, cytotrophoblast and syncytiotrophoblast, with areas of hemorrhage and inflammatory infiltrate (H&E, 40X).

V. CONCLUSION:

In the present study leiomyoma was the most common histopathology finding in the specimens, followed by adenomyosis and senile cystic atrophy and 69 (23%) specimens were unremarkable. In our study leiomyoma, adenomyosis and ovarian mass showed 100% concordance with clinical indication, however dysfunctional uterine bleeding was discordant with clinical indication. Histopathological analysis of hysterectomy is necessary for diagnostic purpose and to know lesions common in uterus and adnexa in particular population. Since, hysterectomy is major surgery, procedure is associated with risk of complication, the indication for hysterectomy should be carefully analysed. Availability of many conservative treatment options for benign condition, it is necessary to discuss these options with patient before taking decision of hysterectomy.

References:

- [1]. Qamar-Ur-Nisa, Habibullah, Shaikh TA, Hemlata, Memon F, Memon Z. Hysterectomies; An audit at a tertiary care hospital. Professional Med J. 2011 Mar; 18(1):46–50.
- [2]. J. M. Wu, M. E. Wechter, E. J. Geller, T. V. Nguyen, and A. G. Visco, "Hysterectomy rates in the United States, 2003," *Obstetrics and Gynecology*, vol. 2007; 110, no. 5, pp. 1091–1095.
- [3]. Nausheen .F,Iqbal. J, F. A Bhatti, A. T. Khan, S. Sheikh .Hysterectomy: the patient's perspective. *Annals of Gynecology*.2004;10:339-341.

- [4]. Yusuf M, Abba Z, Takai UI. Hysterectomy at AminuKanoTeaching hospitals Kano, Nigeria: A 2 year review. *Ibom Medical Journal* 2018;11(2):91-8.
- [5]. Pandey D, Sehgal K, Saxena A, Hebbar S. An audit of indications, complications, and justifications of hysterectomies at a teaching hospital in India. *International Journal of Reproductive Medicine* 2014:1-6.
- [6]. SanamMoradan, RahebGhorbani, AzitaLotfi. Agreement of histopathological findings of uterine curettage and hysterectomy specimens in women with abnormal uterine bleeding. *Saudi Med J* 2017; Vol. 38 (5) 497-502.
- [7]. Prusty RK, Choithani C, Gupta SD. Predictors of hysterectomy among married women 15-49 years in India. *Reprod Health*. 2018;15(1):3.
- [8]. Acharya S, Shrestha S, Pal MN. A retrospective review of abdominal hysterectomy in a teaching hospital. *Journal of Universal College of Medical Sciences* 2015;3(10):16-19.
- [9]. Shrestha S, Joshi R, Tamrakar R, Sharma B. Study on clinical profile of patients undergoing abdominal hysterectomy and their clinico-pathological correlation. *Journal of Chitwan Medical College*. 2019; 9(28):65-71.
- [10]. Amin A, Ali A, Amin Z, Sani FN. Justification for hysterectomies and frequency of histopathological lesions of hysterectomy at a Teaching Hospital in Peshawar, Pakistan. *Pak J Med Sci* 2013;29(1):170-172.
- [11]. V. Arunadevi. Hysterectomy: A Clinicopathological Correlation. *Int J Cur Res Rev*. 2015; 7 (10): 51-54.
- [12]. Harshal A. Patil, ArchanaPatil and Suresh V. Mahajan. Histopathological Findings in Uterus and Cervix of Hysterectomy Specimens. *MVP Journal of Medical Sciences*. 2015; Vol 2(1), 26–29.
- [13]. Pandey D, Sehgal K, Saxena A, Hebbar S et al. An audit of indications, complications, and justifications of hysterectomies at a teaching hospital in India. *International Journal of Reproductive Medicine* 2014:1-6.
- [14]. Liu F, Pan Y, Liang Y, Zhang C et al. The epidemiological profile of hysterectomy in rural Chinese women population based study. *BMJ open* 2017;7:e015351.
- [15]. Gupta K, Parmar M. Clinicopathological correlation of hysterectomy in rural India. *Int J ReprodObstetGynecol* 2015;4(2):408-12.
- [16]. Bhatti K, Lashari AA, Shaikh F. A clinic-pathologic correlation of elective abdominal hysterectomy at teaching hospital Khairpur, Pakistan. *Rawal Medical Journal* 2013;38(2):143-46.
- [17]. Jha R, Pant AD, Jha A, Adhikari RC, Syami G. Histopathological analysis of hysterectomy specimens. *J Nepal Med Assoc* 2006;45:283-90.

Dr.Asiya Shaikh, et. al. "A Histopathological Audit of Hysterectomy At Teaching Hospital." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(09), 2022, pp. 20-27.