MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.59218/makrjms.2023.12.385.390

OPEN ACCESS

**Key Words**
Adenomyosis, endometrium, histopathological diagnosis, Hysterectomy, leiomyoma

**Corresponding Author**
Varsha Khant,
Department of Pathology, Gmers Medical College, Dharpur, Patan, Gujarat, India
dr.abc2306@gmail.com

**Author Designation**
[1,2,4]Assistant Professor
[3]Associate Professor

**Received:** 22 November 2023
**Accepted:** 15 December 2023
**Published:** 16 December 2023

**Citation:** Varsha Khant, Nasrin Qureshi, Asha Gunjalia and Setal Chauhan, 2023. Histopathological Spectrum of Lesions of Hysterectomy Specimens in Tertiary Care Hospital: Two Year Retrospective Study. Res. J. Med. Sci., 17: 385-390, doi: 10.59218/makrjms.2023.12.385.390



# Histopathological Spectrum of Lesions of Hysterectomy Specimens in Tertiary Care Hospital: Two Year Retrospective Study

[1]Varsha Khant, [2]Nasrin Qureshi, [3]Asha Gunjalia and [4]Setal Chauhan

*[1-4]Department of Pathology, GMERS Medical College, Dharpur, Patan, Gujarat, India*

**ABSTRACT**

Hysterectomy is the definitive treatment for a variety of benign pelvic pathologies such as leiomyoma, dysfunctional uterine bleeding (DUB), persistent pelvic discomfort, endometriosis, adenomyosis, uterovaginal prolapse and, in some circumstances, genital tract cancers. The goals of this study were to investigate the range of pathological abnormalities in hysterectomy specimens and to correlate the preoperative diagnosis with the histological diagnosis. This descriptive and observational study was conducted in the histology section of the pathology department of a tertiary care hospital in Gujarat. Except for clinical indications relating tubal or ovarian disease, all hysterectomy specimens received at the histopathology section between January 2021 and December 2022 were included in this investigation. The most common kind of hysterctomy, with 160 cases (79.6%), was total abdominal hysterectomy. Adenomyosis (26.4%) and fibroid (23.9%) were the most common clinical reasons for hysterectomy. The most prevalent observation in endometrium was proliferative phase of endometrial (59.7%), while leiomyoma (45.5%) was seen in myometrium. In total, 5.97% of cases had an incidental histological diagnosis. This study offers a broad range of histological patterns of lesions in hysterectomy specimens. Histopathological examination of hysterctomy specimens should be required even if the gross appearance is normal, as few abnormalities are discovered to be pure incidental findings.

## INTRODUCTION

Hysterectomy is the most common major gynaecological surgery performed worldwide[1].The uterus is separated into two parts the corpus and the cervix. The uterine cavity is divided into three layers. Inner endometrium lines it, which is encircled by a thick muscular layer, myometrium and an outer serosal coating. These uterine layers are subjected to various hormones on a regular basis. The uterus, which is an important organ in female reproduction, can be affected by a variety of benign and malignant disorders[2].

Female reproductive system illnesses can be roughly classified as either inflammatory or neoplastic. Neoplastic lesions are classed as either benign or malignant. Endometritis, chronic cervicitis, salpingitis, endometrial hyperplasia, leiomyoma, adenomyosis, polyps and malignancies are examples of these lesions. Although some of these illnesses have medical therapies, hysterectomy is still the most common surgical procedure for a variety of uterine abnormalities[3]. In terms of symptom relief, patient happiness, and quality of life, hysterectomy is often regarded as one of the most beneficial surgeries[4]. For both non-neoplastic and neoplastic uterine lesions, it can be performed laparoscopically, vaginally, or abdominally.

The most reliable method of diagnosis is histopathological analysis, which also has therapeutic applications. The number of hysterectomies performed has significantly increased, especially as a preventative strategy against uterine cancer[5]. However, studies on the histopathological results of hysterectomy tissues are scarce, nevertheless. The study's goal was to look at the range of histomorphological findings in hysterectomy specimens and the relationship between the preoperative clinical diagnosis and the histopathological diagnosis.

## MATERIALS AND METHODS

This cross sectional study was carried out in Pathology department of a tertiary care hospital, Gujarat. Total 201 hysterectomy specimens received during 2 year period of January 2021 to December 2022were included in the study after getting approval from Institutional Ethics Committee.

**Inclusion criteria:** Total abdominal hysterectomy, vaginal hysterectomy and hysterectomy with unilateral salpingo-oophorectomy specimens were included. Obstetric hysterectomies and hysterectomy cases received for slide inspection but lacking a gross specimen were omitted from the research. The specimens were correctly marked and preserved in 10% formalin for 24 hrs before meticulous grossing. Endometrium, myometrium, ectocervix, endocervix, ovary and fallopian tube tissue sections were collected. Additional bits were extracted depending on the pathology. Following paraffin block preparation, section cutting and slide preparation the tissue sections were processed in an automated tissue processor. The slides were stained with hematoxylin and eosin stain, then microscopic examination was performed and various histological findings for the material were noted and correlated with clinical diagnosis. A few characteristics were collected from the hospital record sheet, including age, indication for hysterectomy and operating procedure.

**Statistical analysis:** The information gathered was input and analysed in Microsoft Excel 2019. The mean and standard deviation (SD) of quantitative data were reported. The frequency and percentages of categorical variables were reported.

## RESULTS

During the study period, we received a total of 201 histopathological specimens of hysterectomy in pathology department. We analyzed the clinical, surgical and histopathological details of each specimen. Abdominal hysterectomy was the most common type, accounting for 160 (79.60%) of cases. Vaginal hysterectomy followed, representing 40 (19.90%) of cases, while laparoscopic hysterectomy accounted for 1 (0.49%) of cases. We also noted associated lesions in different anatomical sites, including the cervix (78.10%), myometrium (61.19%), ovaries (4.47%) and fallopian tubes (0.49%).

Mean age of the patients was 44.74±8.39 years. The majority of the patients were in the 41-50 year age group (85, 42.29%) followed by 31-40 years (4, 31.84%), 51 to 60 years (25, 12.44%).

Most common clinical indication for hysterectomy was adenomyosis (53, 26.36%) followed by fibroid (48, 23.88%), uterine prolapse (42, 20.89%), menorrhagia with fibroid (31, 15.42%) and abnormal uterine bleeding (23, 11.44%).

The endometrium was largely unremarkable in most of the cases (144, 71.64% Proliferative phase 120, 59.70%, secretory phase 24, 11.94% and senile endometrium 35, 17.41%). Other histopathological diagnoses included endometrial hyperplasia without atypia in 14 cases (6.96%) and endometrial hyperplasia with atypia in 3 cases (1.49%). We also noted the presence of endometrial polyps in 4 specimens (1.99%) and endometrial carcinoma in 1 specimen (0.49%).

Most common pathological finding in my ometrial specimens was leiomyoma accounting for 5 cases(45.52%) followed by adenomyosis (48, 23.88%), leiomyoma with adenomyotic changes (18, 8.95%) and

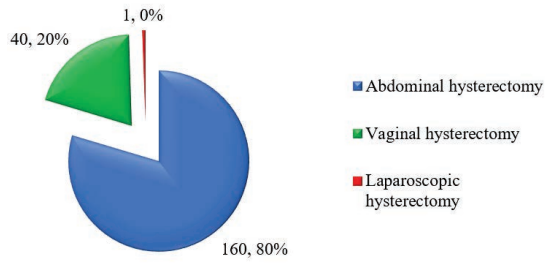


Fig. 1: Type of hysterectomy (n-201)

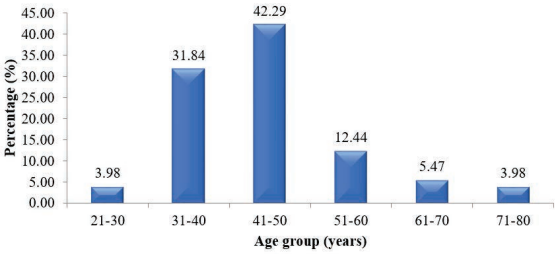


Fig. 2: Age wise distribution of cases

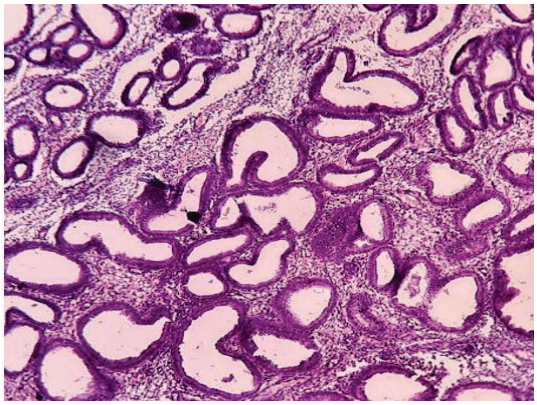

Fig. 3: Endometrial hyperplasia without atypia (10x hematoxylin and eosin)

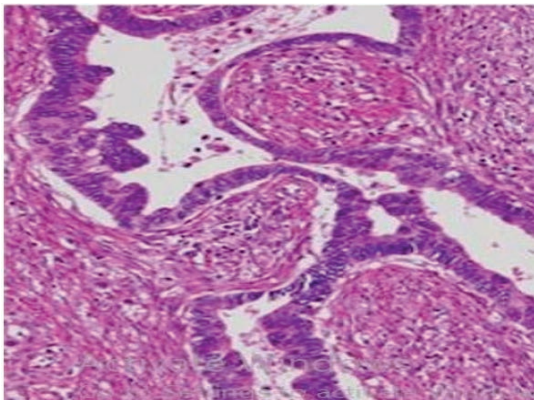

Fig. 4: Endocervical adenocarcinoma, usual type

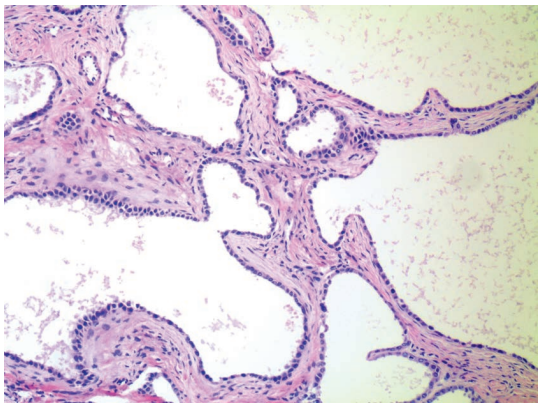

Fig. 5: Serous cystadenoma

endometrial carcinoma invasion (1, 0.81%). Most common cervical lesion was chronic nonspecific cervicitis (117, 74.52%). We also observed other cervical lesion includingchronic nonspecific cervicitis with nabothian cyst in 1 case (10.19%), chronic nonspecific cervicitis with squamous metaplasia in 13 cases (8.28 %), chronic papillary endocervicitisin 7 cases (4.45%). Carcinoma cervix and invasion by endometriod carcinoma was also found in one patient each (0.63%). Most common ovarian lesion was simple follicular cyst (7, 77.78%) followed by serous cyst adenoma of ovary (1, 11.11%), surface epithelial inclusion cyst of ovary (1, 11.11%).

Out of the 201 patients, we observed a discrepancy between the clinical diagnosis and histopathological diagnosis in 12 cases (5.97%). Among the 53 specimens clinically diagnosed with adenomyosis, 6 (11.32%) actually showed leiomyoma, and 1 (1.89%) exhibited papillary endocervicitis. Out of the 42 patients clinically diagnosed with uterine prolapse, we found that the histopathological findings differed in 5 specimens. Specifically, 2 specimens (4.76%) showed subserosal leiomyoma, while 1 specimen each (2.38% each) exhibited endometrial hyperplasia with atypia, chronic salpingitis and endometrioid carcinoma. Hematoxylin-eosin staining, original magnification, × 200), tumor shows papillary surface, although it is composed of stromal hyperplasia caused by inflammation Hematoxylin-eosin staining, original magnification, × 200, tumor shows papillary surface, although it is composed of stromal hyperplasia caused by inflammation.

## DISCUSSIONS

The goal of this study was to look at the histopathology of 201 hysterectomy specimens from a tertiary care institution. Hysterectomy is a highly effective therapeutic option for a variety of uterine and adnexal problems. The vast majority of hysterectomies

Table 1: Clinical indications for hysterectomy (n- 201)

| Clinical indications for hysterectomy | No. of cases | Percentage |
|---|---|---|
| Adenomyosis | 53 | 26.36 |
| Fibroid | 48 | 23.88 |
| Uterine prolapse | 42 | 20.89 |
| Menorrhagia with fibroid | 31 | 15.42 |
| Abnormal uterine bleeding | 23 | 11.44 |
| Cervical growth | 2 | 0.90 |
| Endometrial hyperplasia | 2 | 0.90 |

Table 2:Histopathological lesions of endometrium specimen (n-201)

| Histopathological diagnosis | No. of cases | Percentage |
|---|---|---|
| Proliferative phase | 120 | 59.70 |
| Senile endometrium | 35 | 17.41 |
| Secretory phase | 24 | 11.94 |
| Endometrial hyperplasia without atypia | 14 | 6.96 |
| Endometrial polyp | 4 | 1.99 |
| Endometrial hyperplasia with atypia | 3 | 1.49 |
| Endometrial carcinoma | 1 | 0.49 |

Table 3:Histopathological lesions of myometrialspecimen (n -123)

| Histopathological diagnosis | No. of cases | Percentage |
|---|---|---|
| Leiomyoma | 56 | 45.52 |
| Adenomyosis | 48 | 23.88 |
| Leiomyoma with adenomyotic changes | 18 | 8.95 |
| Endometrial carcinoma invasion | 1 | 0.81 |

are performed to treat non-cancerous diseases[6]. In the present study, the mean age of patients undergoing hysterectomy was 44.74±8.39 years, with the majority falling within the 41-50 age range (42.29%). This age distribution aligns with previous studies conducted by Rawat *et al*.[7] (41.3%), Chaudhari *et al*.[6] (33.3%) and Imam *et al*.[5](44.55%). The higher occurrence of hysterectomy in middle-aged females may be attributed to the fact that they have typically completed their families and surgical resection is often considered a better choice for them compared to medical intervention.

In our study, we observed that total abdominal hysterectomy was the most frequently performed procedure, accounting for 79.6% of cases. The percentage of total abdominal hysterectomy procedures varied from 32.5-79.0%[5-8]. In our study, we found that the most common indicationfor hysterectomy was adenomyosis, accounting for 26.36% of cases, followed by fibroids (23.88%), uterine prolapse (20.89%), menorrhagia with fibroids (15.42%), and abnormal uterine bleeding (11.44%). Interestingly, Chaudhari *et al*.[6] noted that abnormal uterine bleeding (44.3%) was the most common indication for hysterectomy, followed by fibroids (29.4%). Our findings contradict the results of most previous studies, where abnormal uterine bleeding ranged from 28- 42%[7-9].

In our study, we observed that the endometrium was normal in more than two-thirds of cases, accounting for 71.64%. Other common histopathological findings included endometrial hyperplasia without atypia (6.96%), endometrial polyps (1.99%), endometrial hyperplasia with atypia (1.49%), and endometrial carcinoma (0.49%). Rawat et al.[7] observed that endometrial hyperplasia occurred in 3.6% of cases, while physiological endometrial changes were present in 85.5% of cases. Chaudhari *et al*.[6] identified the most frequently observed endometrial lesions as disordered proliferative endometrium (57.14%), endometrial polyps (28.194%) and simple hyperplasia (26.53%). Endometrial carcinoma has been reported at varying prevalence rates; Imam *et al*.[5] identified 11 cases (5/5). In our study, we found that the most common pathological finding in myometrial specimens was leiomyoma, accounting for 45.52% of cases. This was followed by adenomyosis (23.88%), leiomyoma with adenomyotic changes (8.95%) and endometrial carcinoma invasion (0.81%). These findings are consistent with the study conducted by Imam *et al*.[5] who reported leiomyoma in 29.09% of cases, adenomyosis in 11.36% of cases and leiomyoma with adenomyotic changes in 5.90% of cases. Similarly, in the study by Chaudhari *et al*.[6] leiomyoma and adenomyosis were observed in 52.90 and 33.33% of cases, respectively. Rawat *et al*.[7] also reported leiomyoma and adenomyosis in 36.4% and 21.8% of cases, respectively.

In the present study, most common cervical lesion was chronic nonspecific cervicitis, accounting for 74.52% of cases. This was followed by chronic nonspecific cervicitis with nabothian cyst (10.19%), chronic nonspecific cervicitis with squamous metaplasia (8.28%) and carcinoma cervix (0.63%). These findings align with the study by Chaudhari *et al*.[6] who found chronic nonspecific cervicitis to be the most common cervical lesion (85.42%), followed by chronic nonspecific cervicitis with nabothian cyst (11.07%), carcinoma cervix (8.74%) and chronic nonspecific cervicitis with squamous metaplasia (0.29%). Imam *et al*.[5] reported chronic cervicitis in 76.90% of cases, chronic cervicitis with squamous metaplasia in 7.73% of cases, chronic cervicitis with squamous metaplasia and nabothian cyst in 13.18% of cases, and squamous cell carcinoma in 6.36% cases. Rawat *et al*.[7] reported that most common cervical lesion was chronic cervicitis (47.3%) asscoaied with nabothian cyst (23.6%) and metaplastic changes (10.9%). Other studies, like the one by Jha *et al*.[10] reported a high incidence of chronic cervicitis, with 96.3%. Similarly, Rather *et al*.[13] found an incidence of 89.39%. The reason for this high incidence could be that our institute doesn't report any cervical biopsy as normal, as there are always a few chronic inflammatory cells present. In the study by Zaid *et al*.[14] they found an incidence of 0.9% for invasive squamous cell carcinoma, while Gousia *et al*.[15] reported an incidence of 0.3%. These rates are significantly lower compared to ours. In our study, the most common ovarian lesion was the simple

Table 4: Histopathological lesions of cervix (n-157)

| Histopathological diagnosis | No. of cases | Percentage |
|---|---|---|
| Chronic nonspecific cervicitis | 117 | 74.52 |
| Chronic nonspecific cervicitis with nabothian cyst | 16 | 10.19 |
| Chronic nonspecific cervicitis with squamous metaplasia | 13 | 8.28 |
| Chronic papillary endocervicitis | 7 | 4.45 |
| Endocervical polyp | 1 | 0.63 |
| Aggressive angiomyxoma | 1 | 0.63 |
| Carcinoma of cervix | 1 | 0.63 |
| Invasion by endometriod carcinoma | 1 | 0.63 |

Table 5:Histopathological lesions of ovary and fallopian tube (n-10)

| Histopathological diagnosis | No. of cases | Percentage |
|---|---|---|
| **Ovarian lesion (n-9)** | | |
| Simple follicular cyst | 7 | 77.78 |
| Serous cyst adenoma of ovary | 1 | 11.11 |
| Surface epithelial inclusion cyst of ovary | 1 | 11.11 |
| **Fallopian tube lesion (n-1)** | | |
| Chronic salphingitis | 1 | 100.0 |

Table 6: Incidental findings in hysterectomy specimens (n-12)

| Clinical diagnosis for hysterectomy | Incidental findings after histopathological study of specimen | No. of cases (%) |
|---|---|---|
| Adenomyosis (n-53) | Leiomyoma | 6 (11.32) |
| | Papillary endocervicitis | 1 (1.89) |
| Prolapse (n-42) | Subserosal leiomyoma | 2 (4.76) |
| | Endometrial hyperplasia with atypia | 1 (2.38) |
| | Chronic salphingitis | 1 (2.38) |
| | Endometriod carcinoma | 1 (2.38) |

follicular cyst, accounting for 77.78% of cases. This was followed by serous cyst adenoma of the ovary (11.11%) and surface epithelial inclusion cyst of the ovary (11.11%). In the study by Imam *et al*.[5] they found that non-neoplastic cystic lesions were the most common findings in the ovaries, accounting for 10% of cases. Benign tumors, including serous and mucinous cystadenoma, were observed in 5.90% of cases and their malignant counterpart was also seen in 5.90% of cases.Chaudhari *et al*.[6] noted follicular ovarian cyst in 33.33% of cases and serous cyst adenoma in 24.56% of cases. Rawat *et al*.[7] reported follicular cyst in 21.4% of cases, luteal cyst in 14.4% of cases, serous cyst in 7.1% of cases, and benign cystic teratoma in 7.1% of cases. Regarding chronic salpingitis, we observed it in only 1 case in our study, which was lower compared to other studies. Imam *et al*.[5] reported 19 cases of chronic salpingitis (86%), while Rawat *et al*.[7] found pathologically unremarkable Fallopian tubes in 92.8% of cases.

Our study revealed a notable discordance between the clinical diagnosis and histopathological diagnosis in 12 cases (5.97%) of the cases. Among the 53 specimens initially diagnosed with adenomyosis, 6 (11.32%) exhibited leiomyoma and 1 (1.89%) displayed papillary endocervicitis. Out of the 42 patients clinically diagnosed with uterine prolapse, we identified subserosal leiomyoma in 2 specimens (4.76%), endometrial hyperplasia with atypia, chronic salpingitis and endometrioid carcinoma in 1 specimen each (2.38% each). Similarly, Sultana *et al*.[16] reported that histology confirmed leiomyoma in 49 cases (94.23%), adenomyosis in 2 cases (3.84%), and chronic cervicitis in 1 case (1.92%) of 52 cases clinically classified as leiomyoma of the uterus. Chronic cervicitis was linked with leiomyoma in 13 patients (25%), adenomyosis in 5 instances (9.62%), CIN-I in 4 cases (7.69%) and endometrial hyperplasia in 2 cases (3.77%). These findings are consistent with those of Abdullah *et al*.[17] who found a 34% prevalence of leiomyoma.

## CONCLUSION

Hysterectomy procedures are most common among middle-aged women, with the abdominal hysterectomy being the most commonly performed type. Adenomyosisand fibroid are the most frequent reason for hysterectomy. Histological studies of all hysterctomy specimens should be required, even if the visual appearance appears normal because few pathological abnormalities are discovered to be incidental discoveries. Furthermore, clinicopathological correlation is critical for improving clinical outcomes and post-operative treatment in all hysterectomy cases since certain diseases may go undetected clinically.

## ACKNOWLEDGEMENT

I want to express my sincere gratitude to Dr AnkurSurvaiya, Associate Professor, for their experienced guidance throughout this work. And of course, a big heartfelt thank you to all the patients who made this study possible.

## REFERENCES

1. Wu, J.M., M.E. Wechter, E.J. Geller, T.V. Nguyen and A.G. Visco, 2007. Hysterectomy rates in the united ates, 03. stet. Gynecol., 110: 1091-1095.
2. Ajmera, S.K., L.Mettler and W. Jonat, 2016. Operative spectrum of hysterectomy in a german university hospital. J. Obs. India., 1: 5659-63.

3. Nausheen, F., J. Iqbal, F.A. Bhatti, A.T. Khan and S. Sheikh, 2004. Hysterectomy: The patient's perspective. Ann. Gynecol., 10: 339-341.
4. Jha, R., A.D. Pant, A. Jha, R.C. Adhikari and G. Sayami, 2006. Histopathological analysis of hysterectomy specimens. JNMA. J. Nepal. Med. Assoc., 45: 283-290.
5. Chaudhari, A.S., S. Shekhar, 2021. Histopathological spectrum of lesions of hysterectomy specimens: A Descriptive study. Med. Pulse. Int. J. Pathol., 20: 13-18.
6. Rawat, N., A. Tignath, A. Jain, S. Soni and M. Agrawal, 2022. Histopathological spectrum of uterine lesions in hysterectomy specimens. Int. J. health. sci., 11: 11176-11180.
7. Sawke, G., N. Sawke and H. Jain, 2015. Histopathology findings in patients presenting with menorrhagia: A study of 100 hysterectomy specimen. J. Mid-life Health, Vol. 6 10.4103/0976-7800.172299
8. Wankhade, R. and P. Dawande, 2023. Histopathological analysis of hysterectomy specimens in a tertiary care centre: A retrospective study. Cureus, 54-59.
9. Jha, R., A.D. Pant, A. Jha, *et al* ., 2006. Histopathological analysis of hysterectomy specimens. JNMA. J. Nepal. Med. Assoc., 45: 283-290.
10. Parveen, S. and S. Tayyab, 2008. A clinicopathological review of elective abdominal hysterectomy. J. Surg. Pak., 13: 26-29.
11. Rather, G.R., Y. Gupta and S. Bardhwaj, 2013. Patterns of lesions in hysterectomy specimens: A prospective study J. K. Sci., 15: 63-68.
12. Gousia, R.R., G. Yudhvir, and B. Subash, 2013. Clinico-histopathological correlation of abdominal hysterectomy. JK Sci Vol. 15.
13. Sultana, S.N., A.A. Sony, M. Pervin and M.A. Hamid, 2022. Clinico-histopathological correlation of abdominal hysterectomy. Int. J. Reprod., Contraception, Obstet. Gynecol., 11: 2337-2341.
14. Abdullah, L.S., 2006. A clinical pathological correlation. Bahrain. Med. Bull., 1: 6283-6288.