Research Article / Araştırma Makalesi

Histopathological Analysis of Hysterectomy Materials in A Tertiary Hospital

Üçüncü Basamak Hastanede Histerektomi Materyallerinin Histopatolojik Analizi

Ömer TAMMO [1], Enes ÇELIK [2], Esra SÖYLEMEZ [3], Dilber FİLİZ [3], Mehmet İNCEBIYIK [1]

[1]Department of Gynecology, Faculty of Medicine, University of Harran, Şanlıurfa, TÜRKİYE
[2]Department of Anesthesiology and Reanimation, Mardin Training and Research Hospital, Mardin, TÜRKİYE
[3]Department of Gynecology, Mardin Training and Research Hospital, Mardin, TÜRKİYE

Abstract

Background: Hysterectomy, a frequently used surgical procedure in gynecology, entails the removal of a part or all of the uterus and is employed in treating various benign and malignant diseases. This study aims to evaluate the histopathological analyses of patients underwent hysterectomy in a tertiary hospital.
Materials and Methods: The clinical and histopathological data of 107 patients who underwent hysterectomy in Mardin training and research hospital between January and March 2024 were retrospectively analyzed. The patients' age, hysterectomy type, indication, histopathological diagnosis, and other clinical parameters were recorded.
Results: Total laparoscopic hysterectomy (TLH) was the most preferred type of hysterectomy (n=62, %57.94) and patients' age average was 49.83. Abnormal uterine bleeding (AUB) and myoma uteri was the most prevalent reasons of hysterectomy (n=47, %47.66). Among endometrial lesions, endometrial polyp was the most common (n=34, 31.77%), and among myometrial lesions, leiomyoma was the most common pathological finding (n=52, 47.27%).
Conclusions: This study revealed that the histopathological analysis results of hysterectomy materials were largely consistent with clinical diagnoses. AUB and myoma uteri were among the leading indications for hysterectomy.

Keywords: Hysterectomy, Histopathology, Myoma uteri, Endometrial polyp, Leiomyoma, uterine bleeding.

Öz

Amaç: Histerektomi, jinekolojide sıklıkla uygulanan cerrahi bir işlemdir. Uterusun bir kısmının veya tamamının çıkarılmasıdır. Çeşitli benign ve malign hastalıkların tedavisinde kullanılır. Bu çalışmanın amacı, histerektomi materyallerinin histopatolojik analiz sonuçlarını incelemek ve klinik tanılarla karşılaştırmaktır.
Materyal ve Metod: Bu çalışmada, 2024 yılı Ocak-Mart ayları arasında üçüncü basamak Mardin eğitim ve araştırma hastanesinde histerektomi uygulanan 107 hastanın klinik ve histopatolojik verileri retrospektif olarak analiz edildi. Hastaların yaş, histerektomi tipi, endikasyon, histopatolojik tanı ve diğer klinik parametreleri kaydedildi.
Bulgular: Hastaların yaş ortalaması 49,83 idi. En sık histerektomi tipi total laparoskopik histerektomi (TLH) idi (n=62, %57,94). En sık histerektomi endikasyonları anormal uterin kanam ve myoma uteri idi (n=47, %47,66). Endometriyal lezyonlar arasında en sık endometrial polip, (n=34, %31,77) myometriyal lezyonlarda ise leiomyoma en sık saptanan patolojik bulguydu (n=52, %47,27).
Sonuç: Bu çalışmada, histerektomi materyallerinin histopatolojik analiz sonuçlarının klinik tanılarla büyük ölçüde uyumlu olduğu gözlendi. Anormal uterin kanama ve myoma uteri, histerektomi endikasyonları arasında en ön sıralarda yer aldı.

Anahtar Kelimeler: Histerektomi, Histopatoloji, Endometrial polip, Uterus kanaması, Miyom

Corresponding Author / Sorumlu Yazar

Dr. Ömer TAMMO
Department of Gynecology, Faculty of Medicine, University of Harran, Şanlıurfa, TÜRKİYE

E-mail: omartammo@gmail.com

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Introduction

The uterus is a vital organ in the female reproductive system, consists of two main parts: the corpus uteri and the cervix uteri. The corpus uteri comprises the endometrium and myometrium layers. Following cesarean section, hysterectomy, the surgical removal of the uterus, ranks as the second most common major surgery globally (1). Despite the availability of conservative and medical surgical options, hysterectomy is still the most favored method for treating gynecological diseases (2). Uterine preservation should be considered when the risks outweigh the benefits of surgical removal or when there are symptoms that do not respond to successful medical therapy and impair quality of life (3).

The endometrium of the uterus sheds every month under hormonal influence. The most common reasons for patients to visit gynecologists include vaginal bleeding, discharge, pelvic pain, irregular menstruation, and postmenopausal bleeding, along with lesions in the corpus and cervix. While numerous treatment options, including conservative and medical surgical interventions, are available today, hysterectomy remains among the most preferred methods for addressing gynecological issues (3).

Hysterectomy is a widely performed gynecological surgical procedure. It allows definitive diagnosis of all uterine and cervical pathology. By facilitating the retrieval of sufficient samples from the essential and suspected regions, it assists in diagnosing a variety of lesions without encountering any sampling inaccuracies.

The objective of this study is to explore the diverse gross and histopathological findings of the uterus and cervix in hysterectomy specimens collected, and to examine their correlation with clinicopathological factors.

Materials and Methods

Study Population: This study included 107 patients who underwent hysterectomy at Mardin Training and Research Hospital between January 2024 and March 2024.

Inclusion Criteria:

- Patients were aged 30 years and over.
- All patients with uterine and/or cervical hysterectomy indications were included in the study.
- The surgical method and type (abdominal, vaginal, laparoscopic) were not considered.

Exclusion Criteria:

- Hysterectomies performed for obstetric reasons

Processing of Hysterectomy Material:

- Hysterectomy materials were transferred to 10% fresh formalin in a 1:10 ratio in the operating room.
- Macroscopic examination was performed after 24 hours of fixation.
- Sections were taken from the uterus and cervix as follows:

Uterus:

- From the fundus, corpus, and lower uterine segment
- Including endometrium, myometrium, and serosa

Cervix:

- From both cervical lips
- Including endocervix and ectocervix
- Sections were processed in an automatic tissue processor, and paraffin blocks were prepared.
- 4-micron thick sections were taken from the blocks and stained with Hematoxylin & Eosin (H&E) staining.
- Special stains (PAS) were also used when necessary.

Histopathological Examination:

- Histopathological examination was performed by an experienced pathologist.
- The findings were evaluated according to the histopathology criteria published by the World Health Organization (WHO).
- The histopathological diagnosis of each patient was compared with the clinical diagnosis.

Statistical analysis : SPSS v.20.0 statistical program was utilized for statistical analysis. The patients' ages, hysterectomy types, indications, histopathological diagnoses, and other clinical parameters were summarized using descriptive statistics.

Results

A retrospective analysis was conducted on 107 hysterectomy procedures, involving patients aged between 41 and 74 years. The most common age group which underwent hysterectomy was 41-51 years. With a mean age of 49.83 years, total laparoscopic hysterectomy emerged as the most prevalent type, accounting for 62 cases (57.94%) Table (1). The commonest indication for surgery was abnormal uterin bleeding and myoma uteri (47,66 %, 47,66%) Table (2).

Table 1. Distribution based on hysterectomy type

Type of hysterectomy	Number of cases	Percentage
Total laparoscopic hysterectomy	62	57,94 %
Total abdominal hysterectomy	40	37,38 %
Vaginal hysterectomy	3	2,80 %
Radical Total abdominal hysterectomy	2	1,86 %

Table 2. Indication for surgery

Abnormal uterine bleeding	47,66 %
Myoma uteri	47,66 %
Dermoid cyst	2,80 %
Uterine prolapse	1,86 %

Endometrial polyp emerged as the most frequent pathology among endometrial lesions, observed in 34 cases (31.77%) Table (3).

Table 3. Histopathological lesions of the endometrium

Endometrial lesions	Number of cases	Percentage
Endometrial Polyp	34	31,77 %
Endometrium in the secretory phase	29	27,10 %
Proliferative endometrium	24	22,42 %
Simple Non-atypical hyperplasia	4	3,73 %
Endometrium with decidualization	4	3,73 %
Complex Non-atypical hyperplasia	3	2,80 %
Atrophic endometrium	2	1,86 %
Simple atypical hyperplasia	2	1,86 %
Endometrial carcinoma	2	1,86 %
Atrophic endometrium and endometrial polyp	1	0,93 %
Inflammation	1	0,93 %
Complex atypical hyperplasia	1	0,93 %

The most prevalent myometrial pathology observed was leiomyoma, accounting for 51 cases (47.66%) Table (4). Chronic cervicitis stood out as the most prevalent pathology among cervical lesions, identified in 86 cases (80.37%) Table(5).

Table 4. Histopathological lesions of myometrium

Myometrial lesions	Number of cases	Percentage
Leiomyoma	51	47,66 %
Adenomyosis	36	33,64 %
Adenomyosis , Leiomyoma	10	9,34 %
Normal histology	10	9,34 %

Table 5. Histopathological lesions of the cervix

Cervical lesions	Number of cases	Percentage
Chronic cervicitis	86	80,37 %
Squamous metaplasia	13	12,14 %
Erosive cervicitis	8	7,47 %

Discussion

The uterus is an important reproductive organ that is susceptible to various benign and malignant diseases. Even though there have been significant advances in conservative and surgical interventions for uterine lesions, hysterectomy may still be necessary in some cases. The increasing number of hysterectomies can be seen in cases of prophylaxis against uterine malignancy, mild genital prolapse, and non-menopausal menorrhagia (4). Dicker asserts that hysterectomy is recommended when the benefits surpass the risks associated with preserving the uterus, or when medical treatment fails to alleviate troubling symptoms (3).

This study retrospectively examined a total of 107 hysterectomy procedures, involving individuals aged between 41 and 74 years. The age group most frequently undergoing hysterectomy fell within the range of 41 to 51 years, with a mean age of 49.83. Other studies conducted by Rather et al. and Ramchandran et al. have reported similar findings (5, 6).

Type of Hysterectomy:

Total Laparoscopic Hysterectomy emerged as the predominant type of hysterectomy in our study (TLH). This finding is consistent with other studies in the literature. TLH has been demonstrated to be a less invasive procedure than Total Abdominal Hysterectomy (TAH) and provides a shorter recovery time (7). In 2019, the American Congress of Obstetricians and Gynecologists (ACOG) reaffirmed its position, originally stated in 2017 and 2009, emphasizing the preference for the vaginal approach in women undergoing hysterectomy for benign conditions, citing its "well-documented benefits and lower complication rates" (8). The American Association of Gynecologic Laparoscopists (AAGL) and the French National College of Obstetricians and Gynecologists (CNGOF) also advocate for the vaginal or laparoscopic approach as the primary choice in this scenario (9). Nevertheless, there's a difference between what's recommended and what's actually happening in practice. Over time, there has been a decline in the utilization of the vaginal approach, from 25% of cases in 1998 to 17% in 2010 (10). Our study supports recent publications, showing a vaginal hysterectomy rate of 2.8%.

Histopathological Findings:

The most common clinical indications for hysterectomy were found to be menorrhagia, fibroid uterus, and uterovaginal prolapse.

Endometrial polyp emerged as the predominant pathology among endometrial lesions. In our study, the clinical diagnosis was confirmed in the majority of cases on pathological examination; however, polyps were more frequently observed than atrophy in endometrial lesions. This finding was different from other studies conducted. In other studies, atrophic endometrium is more frequently observed (11).

In myometrial lesions, leiomyoma was the most frequent diagnosis (47.66%). This result aligns with the findings of the study conducted by Vani et al. (12). In this study, adenomyosis ranked as the second most prevalent myometrial pathology, identified in 36 cases (33.64%). Adenomyosis is seldom diagnosed preoperatively and typically identified post-hysterectomy through histopathological examination (13).

Chronic cervicitis is a highly prevalent condition among adult women, often evident under microscopic examination. In this study, it emerged as the most frequent cervical pathology, identified in 86 cases (80.37%). These findings are consistent with other studies in the current literature (11).

Indications for Hysterectomy:

In our study, the most common indications for hysterectomy were AUB and myoma uteri. Numerous studies cite abnormal uterine bleeding as the primary clinical indication for hysterectomy, while others identify myoma as the predominant reason (14, 15).

Limitations of the Study:

Limitations of this study include its retrospective design and its conduct at a single center.

Conclusion

In this study, the histopathological analysis results of patients who underwent hysterectomy at Mardin Education and Research Hospital were evaluated. AUB and myoma uteri were among the most common indications for hysterectomy. Endometrial polyp emerged as the most frequent diagnosis among endometrial lesions, while leiomyoma was the predominant diagnosis among myometrial lesions. In our study, the clinical diagnosis was confirmed in the majority of cases on pathological examination; however, polyps were more frequently observed than atrophy in endometrial lesions.

Ethical Approval: *This study was designed in accordance with the Helsinki Declaration and approved by Mardin Artuklu University Ethics Committee (Study ethics committee number: 2024/3-22; date 05/03/2024). Purpose and methods of the study were explained to patients, and they provided written informed consent.*

Author Contributions:
Concept: Ö.T., D.F., M.İ.
Literature Review: Ö.T., D.F., M.İ.
Design : E.S.
Data acquisition: Ö.T., D.F.
Analysis and interpretation: E.S., E.Ç.
Writing manuscript: Ö.T., E.S.
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