

Comparison of clinical indications and postoperative histopathological diagnoses of hysterectomy specimens with benign preliminary diagnoses

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Abstract

Aim: Hysterectomy specimens constitute a large section of routine pathology practice as hysterectomy operations widely performed all over the world to manage benign gynecological disorders by the gynecologists. In this study, we aimed to evaluate hysterectomy specimens obtained due to benign preliminary diagnoses by comparing them with regard to clinical indications and postoperative histopathological diagnoses.

Material and Methods: Nine hundred and forty-seven cases who underwent hysterectomy at Gaziantep University Medical Faculty Hospital between January 2012 and December 2016 were retrospectively re-evaluated with regard to clinical indications and postoperative histopathologic diagnoses.

Results: Leiomyoma was the most common hysterectomy indication and accounted for 34.1% (n:323). Other indications in descending order of prevalence were as follows; abnormal uterine bleeding (n:290, 30.6%), endometrial hyperplasia (n:113, 11.9%), uterine prolapse (n:107, 11.3%), adenomyosis (n:75, 7.9%) and abnormal placentation (n:39, 4.1%).

According to the final histopathological results of the hysterectomy specimens, leiomyomas (n:325, 34.3%) were the most common postoperative diagnosis followed by adenomyosis (n:150, 15.8%) and endometrial hyperplasia (n:113, 11.9%). Abnormal placentation was found in 39 cases (4.1%). Squamous intraepithelial lesions of the uterine cervix were found in 39 cases (4.1%), endometrial adenocarcinomas in 10 cases (0.9%), smooth muscle tumor with uncertain malignant potential, leiomyosarcoma and granulosa cell tumor in one patient each (0.09%).

We found more than one pathology in 280 cases. The most common pathology was leiomyomas coexisting with adenomyosis (n:170, 17.9%), while others included leiomyoma coexisting with endometrial polyp (n:56, 5.9%), and leiomyoma coexisting with endometrial polyp and adenomyosis (n:54, 5.7%).

Conclusion: Incidental detection of conditions such as cervical squamous intraepithelial lesions and endometrial adenocarcinomas in hysterectomy materials obtained for benign preliminary diagnoses support the importance of cervical screening test and endometrial sampling as routine processes in preoperative surgical examinations. This also stresses the importance of macroscopic examination and increased sampling in suspicious cases for pathologists.

Keywords: Histopathological Diagnosis; Hysterectomy; Surgical Indication.

INTRODUCTION

Recent studies report decreases in the prevalence of hysterectomy due to the advances in minimally invasive surgical methods and the introduction of novel treatment modalities (1). Despite this decrease, hysterectomy stands as the second most common major surgery performed by gynecologists after caesarean section for various indications such as myoma uteri, endometriosis, adenomyosis, dysfunctional uterine bleeding, pelvic

inflammatory disease, and gynecologic cancers (2-4). While the prevalence of hysterectomy varies between 6.1-8.6 for every 1000 women, data provided by Centers for Disease Control and Prevention in the United States of America suggests that, before the age of 60, one of every four women, and before the age of 65, one of every three women will have undergone a hysterectomy operation. Approximately 20-30% of all women experience dysfunctional uterine bleeding in certain periods of their lives and approximately 60% of women with this

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complaint undergo a hysterectomy operation (5-7). Hysterectomy rates may vary depending on many factors such as geographical distributions and doctor-patient relationships (8).

This study aims to evaluate the pathologies detected in hysterectomy materials obtained due to benign preliminary diagnoses by comparing them with the associated clinical indications, retrospectively.

MATERIAL and METHODS

Records of nine hundred and forty-seven cases who underwent hysterectomy between January 2012 and December 2016 for benign preliminary diagnoses and histopathologic diagnoses of hysterectomy materials obtained from these patients were reviewed.

Descriptive statistics were provided in numbers and percentage.

RESULTS

Hysterectomy materials obtained from 947 hysterectomies performed between January 2012 and December 2016 were retrospectively evaluated. Myoma uteri was the most common hysterectomy indication with a rate of 34.1% (n:323). Other indications in descending order of prevalence were as follows; abnormal uterine bleeding in 290 cases (30.6%), endometrial hyperplasia in 113 cases (11.9%), and uterine prolapse in 107 cases (11.3%). Other clinical indications included adenomyosis in 75 cases (7.9%) and abnormal placentation in 39 cases (4.1%). Table 1 shows the clinical indications in hysterectomy cases and the mean age of the patients.

Clinical Indications	n	Percentage	Mean age
Myoma Uteri	323	34.1%	45.1
Abnormal Uterine Bleeding	290	30.6%	50.4
Endometrial Hyperplasia	113	11.9%	50.3
Uterine Prolapse	107	11.3%	61.2
Adenomyosis	75	7.9%	45.7
Placenta Previa	39	4.1%	34

Based on the histopathologic diagnoses of hysterectomy materials; the most common pathology was leiomyoma, detected in 325 cases (34.3%). Other common pathologies were respectively; adenomyosis in 150 cases (15.8%), endometrial hyperplasia in 113 cases (11.9%), and abnormal placentation in 39 (4.1%) cases. Furthermore, 10 (0.9%) cases were detected to have Grade I endometrioid endometrial adenocarcinomas. On the other hand, 280 cases in our study had multiple pathologies. The most common pathologies detected together were leiomyoma and adenomyosis in 170 (17.9%) cases, while 56 cases demonstrated leiomyoma and endometrial polyps (5.9%), and 54 (5.7%) coexistent leiomyoma, adenomyosis, and

endometrial polyps. Table 2 shows the pathological diagnoses detected in hysterectomy cases with the mean age of the patients.

Histopathologic Diagnoses	n	Percentage	Mean age
Leiomyoma	325	34.3%	48.2
Adenomyosis + MyomaUteri	170	17.9%	49.7
Adenomyosis	150	15.8%	51.8
Endometrial Hyperplasia	113	11.9%	50.2
MyomaUteri + Endometrial Polyp	56	5.9%	51.9
Endometrial Carcinoma	10	0.9%	57.2

Reviewing the 113 cases in our study who had received a histopathological diagnosis of endometrial hyperplasia showed that 78 (69.1%) cases had non-atypical hyperplasia while 35 (30.9%) had atypical hyperplasia.

A leiomyosarcoma was detected in a 11 cm diameter mass from a 56-year-old patient, and a 0.4 cm granulosa cell tumor was detected in the left ovary of a 46-year-old patient, both operated for myoma uteri. Smooth muscle tumour of uncertain malignant potential (STUMP) was detected in one patient who has a clinical diagnosis of leiomyoma with 19 cm diameter.

While high levels of chronic cervicitis were detected in the cervical evaluation of hysterectomy materials, cervical squamous intraepithelial lesions were detected in 39 cases. Six (15.3%) of the detected cases were high grade squamous intraepithelial lesion (HSIL), whereas 33 (84.6%) of them were low grade squamous intraepithelial lesion (LSIL).

DISCUSSION

Currently, hysterectomy constitutes one of the most common surgical treatments used in gynecological practice for the treatment of various gynecological pathologies including leiomyoma, adenomyosis, abnormal uterine bleeding, and pelvic pain. It is estimated that 590000 hysterectomy operations are performed on women aged 15 years or older every year in USA (9).

Leiomyoma is a smooth muscle tumor that originates from myometrium and is the most common uterine neoplasia, as well as the most common hysterectomy indication. Although it is typically encountered in middle-aged women, it can rarely manifest in young patients. While it is clinically encountered at rates of 20-30% in women aged 30 and above, these rates can reach up to 75% in systematic screening (10-12). A post-mortem study detected leiomyoma in 50% of women. It is more prevalent across African American women compared to white women (13).

Uterine leiomyomas may manifest different symptoms based on their localizations and sizes. The most common symptoms are pain, pressure, and abnormal uterine bleeding. It is estimated that approximately 14000 hysterectomy and 20000 myomectomy operations are

performed every year due to the mentioned complaints and similar complaints originating from leiomyomas (14, 15).

Dincgez et al. (16) evaluated 949 hysterectomy cases and determined the most common hysterectomy indication as myoma uteri with a rate of 32.77%. Similarly, our study determined the most common hysterectomy indication as myoma uteri with a comparable rate of 34.3%. In a study that included a large series constituted by 1832 hysterectomy cases, Bukhari et al. (17) reported benign pathologies in 94.1% cases and malignant pathologies in 4.3% cases. They reported determining no significant pathological changes in another 1.62% cases. Benign lesions primarily included leiomyoma (27.8%), adenomyosis (20.5%), and coexisting leiomyoma and adenomyosis (15.8%), whereas, malignant lesions included carcinomas (3.5%) and sarcomas (0.81%). In our series, malignant lesions were detected at a rate of 1.3%, with carcinomas detected at a rate of 0.9% and sarcomas of 0.09%.

In a study in which they evaluated 361 hysterectomy cases, Atilgan et al. (18) determined myoma uteri in 40.16% cases, endometrial hyperplasia in 38.22% cases, adenomyosis in 25.48%, and endometrial polyp in 8.86% cases. In our study, we determined leiomyoma in 34.3%, adenomyosis in 15.8%, and endometrial hyperplasia in 11.9% cases.

Adenomyosis is defined as the presence of endometrial gland and stroma in the deep myometrium and is determined at rates of 15-30% in hysterectomy materials (19). This pathology is associated with a diffusely enlarged uterus. Although it can be encountered in younger women, the mean age of women with symptomatic adenomyosis is typically 40 and above (20). While a definitive diagnosis can be reached pathologically, rates of diagnosis reported by pathologists vary (21). Patients are typically pre-menopausal women who present with complaints of abnormal uterine bleeding and dysmenorrhea. Symptoms can be quite variable depending on deep myometrial involvement. As most of these symptoms are also encountered in cases of leiomyoma, endometriosis, and endometrial polyps, rates of clinical diagnosis of adenomyosis reported in the literature are as low as 2.6-26% (22). Adenomyosis must definitely be considered in the differential diagnosis of patients in their 5th or 6th decade who clinically present with secondary dysmenorrhea and menometrorrhagia. In our series, although a preliminary diagnosis of adenomyosis was not associated with high rates (7.9%), it was detected at higher rates in histopathological diagnosis (15.8%). Cakmak et al. (23) reported an adenomyosis prevalence of 11.4% in their study where they histopathologically examined 149 hysterectomy materials.

Endometrial polyps constitute a prevalent pathology that is commonly encountered in reproductive and postmenopausal women, and frequently lead to abnormal uterine bleeding as a symptom. Endometrial polyps are detected in 2-23% of women who undergo an endometrial

biopsy due to a complaint of abnormal uterine bleeding. It is among the most common causes of abnormal uterine bleeding in pre- and postmenopausal women. Its incidence is higher in women who receive hormone replacement therapy (24,25). In our study, the prevalence of endometrial polyps was 5.7% and they were usually accompanied by myoma uteri. The reason for the low histopathological detection of endometrial polyps in hysterectomy materials was probably that their treatment started with dilation-curettage (D&C) and hysteroscopic resection.

Endometrial hyperplasia is a precursor lesion for endometrioid endometrial adenocarcinoma that can be encountered in women of all age groups and that usually manifests with abnormal uterine bleeding. It is evaluated under two groups based on presence of cytological atypia as atypical and non-atypical endometrial hyperplasia. The risk of developing a carcinoma is much higher in atypical hyperplasia compared to non-atypical hyperplasia, and the mean time required for carcinoma development was reported as 4.1 years. This time was reported as 10 years on average for non-atypical hyperplasia (26,27).

In our study, Grade I endometrioid endometrial adenocarcinomas were detected in 10 (1.05%) patients operated for a preliminary diagnosis of endometrial hyperplasia. The majority of our patients were constituted by postmenopausal patients. The number of endometrial samples obtained for pathological evaluation must be increased, particularly for patients with a preliminary diagnosis of endometrial hyperplasia who present with a complaint of postmenopausal bleeding.

Smooth muscle tumour of uncertain malignant potential (STUMP) is a smooth muscle tumour with features that preclude an unequivocal diagnosis of leiomyosarcoma, but that doesn't show the criteria for leiomyoma, or its variants (28). Patients with STUMP present clinical symptoms including abnormal uterine bleeding, pelvic pain and pelvic pressure (29). The clinical behaviour and optimal management of STUMP are poorly understood (28). In our study, STUMP was detected in one patient who has a clinical diagnosis of leiomyoma with 19 cm diameter.

While the review of cervical pathologies of hysterectomy materials revealed a high rate of chronic cervicitis, the fact that cervical squamous intraepithelial lesions were detected in 39 (4.1%) cases attest to the importance of the cervical screening test. Most of the detected cases (33 of 39) in our study were LSIL and the others (6 of 39) were HSIL.

CONCLUSION

In conclusion, incidental detection of cervical premalignant precursor lesions, and although at lower rates of other malignancies with endometrial, myometrial, and ovarian origins in hysterectomy cases operated due to clinically benign preliminary diagnoses demonstrates the importance of preoperative clinical evaluation and

postoperative pathological evaluation. In preoperative gynecological evaluation, cervical screening test and endometrial sampling must be included in the routine. With regard to macroscopic evaluation, the number of endometrial samples must be increased particularly for cases diagnosed with endometrial hyperplasia and cases with a complaint of postmenopausal bleeding, and the number of myoma samples must be increased in cases of suspicious myoma nodules. Considering that multiple pathologies may coexist, hysterectomy materials must be evaluated carefully for other pathologies in addition to clinical indications.

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