



Özgür İLHAN ÇELİK

Muğla Sıtkı Koçman
University,
Faculty of Medicine,
Department of Medical
Pathology,
Muğla, TURKEY

ORCID: 0000-0002-3549-822X

Clinicopathological Evaluation of 1815 Hysterectomy Materials

Objective: Hysterectomy is one of the most frequent surgical procedures of women. The aim of this study was to evaluate the distribution of the diseases that were diagnosed in hysterectomy materials.

Materials and Methods: 1815 female patients who underwent hysterectomy because of any reason were clinicopathologically evaluated retrospectively.

Results: The mean age of hysterectomy was 48.94. The leading reason and histopathological diagnosis of hysterectomy was leiomyomas with a ratio of 47.82%. The second leading reason and histopathological diagnosis was prolapsus uteri (24.63%) and the third leading diagnosis was adenomyozis (12.84%) which usually coexisted with the other diseases, especially leiomyomas. Even though the malignant tumors of endometrium, myometrium, cervix, vagina, tuba uterina and ovary accounted less in number; they are the most dangerous gynecological diseases that shorten lives of the women. So it is very important to diagnose these tumors as early as possible in order to begin the appropriate treatment quickly to provide better survivals for the patients.

Conclusion: As a result the reasons of the symptoms like abnormal uterine bleeding, pelvic pain must be evaluated in detail for gynecological carcinomas and the cervical screening method with the cervicovaginal papanicalaou smear test must be applied to every women in fertility period for early diagnosis of cervical carcinomas.

Key words: Hysterectomy, abnormal uterine bleeding, uterine diseases, gynecological malignancies

1815 Histerektomi Materyalinin Klinikopatolojik Olarak Değerlendirilmesi

Amaç: Histerektomi, kadınlara en sık uygulanan cerrahi prosedürlerden biridir. Bu çalışmanın amacı, histerektomi materyallerinde tanı almış hastalıkların dağılımını değerlendirmektir.

Gereç ve Yöntem: Herhangi bir nedenle histerektomi yapılmış olan 1815 kadın hasta retrospektif şekilde klinikopatolojik olarak değerlendirildi.

Bulgular: Ortalama histerektomi geçirme yaşı 48.94 idi. Histerektominin önde gelen nedeni ve patolojik tanısı %47.82 oranında leiomyoma idi. İkinci önde gelen neden ve histopatolojik tanı prolapsus uteri idi (%24.63) ve üçüncü sırada tanı konan adenomyozis (%12.84) ise, başta leiomyomlar olmak üzere genellikle diğer hastalıklarla birliktelik gösteren bir durumdu. Endometriyum, myometriyum, serviks, vajina, tuba uterina ve over malign tümörlerinin sayıları daha az olsa da; kadınların hayatlarını kısaltan en tehlikeli jinekolojik hastalıklardı. Bu nedenle, hastalara daha iyi sağkalm sağlamak için erkenden uygun tedaviye başlamak amacıyla bu tümörleri mümkün olduğunca erken teşhis etmek çok önemlidir.

Sonuç: Sonuç olarak, Anormal uterin kanama, pelvik ağrı gibi belirtilerin nedenleri jinekolojik karsinomlar açısından ayrıntılı olarak araştırılmalı ve özellikle serviks karsinomlarının erken teşhisi için doğurganlık dönemindeki her kadına Servikovajinal Papanicalaou Smear tarama testi uygulanmalıdır.

Anahtar Kelimeler: Histerektomi, anormal uterin kanama, uterin hastalıklar, jinekolojik maligniteler

Received : 05.09.2018
Accepted : 29.01.2019

Correspondence Yazışma Adresi

Özgür İLHAN ÇELİK
Muğla Sıtkı Koçman
University,
Faculty of Medicine,
Department of Medical
Pathology
Muğla - TURKEY

oilhancelik@gmail.com

Introduction

Hysterectomy is one of the most frequent surgical procedures of women. The prevalence of it changes by race, development of the countries and the geographic location (4%-40%) (1, 2). Education level, age at first birth, gravity, parity, the number of alive children, the number of miscarriages and other risk factors like genetic tendency to malignancies (Lynch Sendrom) have been found to be associated with the risk of hysterectomy (3, 4). The indication of hysterectomy varies between the regions. However the leading indication is leiomyoma (5-7). The other indications are abnormal uterine bleeding (AUB) (8), endometriosis, adenomyosis (9-11), endometrial, cervical, tubal, ovarian benign and malignant masses (12-16).

In this study we have searched the diversity of the diagnosis of the hysterectomy materials in order to present the most frequent diseases of the uterus that require surgery.

Materials and Methods

We analyzed 1815 female patients retrospectively who underwent hysterectomy because of any reason and histopathologically evaluated at the pathology laboratory between the beginning of 2012 to the end of 2017 in this study. Clinicopathological parameters of the patients were obtained from the hospital automation system. The histopathologic diagnosis were evaluated and the distribution of the lesions were determined.

This Project was evaluated by Hospital Research and Publication Ethics Committee and it was approved in terms of scientific researches and patient ethics.

In statistical analysis of data, mean and standard deviation for continuous variables and percentages for categorical variables were used. Descriptive statistics and categorical variables were given as frequencies (percentages).

Results

The mean age of 1815 patients included in the study was 48.94. The minimum age was 30; the reason of hysterectomy by this patient was leiomyoma. The maximum age was 85; the reason of hysterectomy by this patient was endometrial carcinoma. The distribution of the lesions diagnosed in the patients listed in Table 1.

Table 1: The results of the diagnostic evaluation of hysterectomy materials.

Tissue	Diagnosis	Subtype	Number (n)	Rate (%)	
Endometrium	Polyp		131	7.22	
		without atypia	20	1.10	
	Hyperplasia	with atypia	5	0.27	
		Endometrioid carcinoma	36	1.98	
	Malignancies	Serous carcinoma	2	0.11	
		Stromal sarcoma	2	0.11	
	Myometrium	Leiomyoma		818	47.82
Lipoleiomyoma			2	0.11	
Angiolipoleiomyoma			1	0.05	
Cellular leiomyoma			58	3.20	
Atypical leiomyoma			5	0.27	
Smooth Muscle tumors		Smooth Muscle Tumors of Uncertain Malignant Potential (STUMP)		4	0.22
			Leiomyosarcoma	2	0.11
Adenomyosis			233	12.84	
		Acreta	1	0.05	
Placental Diseases		Increta	6	0.33	
		Percreta	8	0.44	
Cervix		Endocervical Polyp		13	0.72
			Low grade SIL (LSIL)	9	0.50
	Squamous Intraepithelial Lesion (SIL)	High grade SIL (HSIL)	12	0.66	
		Squamous Cell Carcinoma	11	0.61	
	Endocervical Glandular Intraepithelial neoplasia		1	0.05	
		in situ	1	0.05	
	Endocervical Adenocarcinoma	Invasive	7	0.39	
Vagina	Squamous Cell Carcinoma		2	0.11	
		Clear Cell Carcinoma	2	0.11	
Tuba uterina	Paratubal Cyst		122	6.72	
	Ectopic Pregnancy		8	0.44	
		Serous	2	0.11	
Ovary	Simple Cyst		197	10.85	
	Endometriosis		41	2.26	
	Fibroma		12	0.66	
	Fibrothecoma		3	0.16	
	Fibrosarcoma		1	0.05	
	Teratoma	Mature	43	2.37	
		Benign	48	2.64	
		Borderline	3	0.16	
	Serous Tumors	Malignant	13	0.72	
		Benign	1	0.05	
	Seromucinous Tumors	Borderline	1	0.05	
		Benign	12	0.66	
	Mucinous Tumors	Malignant	2	0.11	
			2	0.11	
	Clear Cell Carcinoma		1	0.05	
	Endometrioid Carcinoma		1	0.05	
	Granulosa Cell Tumor	Adult	3	0.16	
		Benign	1	0.05	
	Brenner Tumor	Malignant	1	0.05	
Metastasis of Colonic Adenocarcinoma to Ovary		3	0.16		
Uterus Anomaly	Bicornis Unicollis		1	0.05	
Uterine atony			3	0.16	
Prolapsus Uteri			447	24.63	

Discussion

AUB is the most common symptom of gynecological conditions, which is defined as any type of bleeding in which the duration, frequency or amount is excessive for a woman. It is generally an indicator of possible uterine disease (8, 17). Previous studies have shown that the prevalence of AUB varies in different populations (between 10% and 30%) (18, 19). It frequently enforces medical intervention in order to improve the comfort of the patient's life (20, 21). In the AUB conditions that do not respond to medical or small surgical treatments, the last choice is hysterectomy. These patients have either structural diseases like benign/ malignant situations (40%) or dysfunctional uterine bleeding (DUB) in the absence of demonstrable structural or organic abnormalities (60%). Most of the DUB patients can be treated medically, rarely hysterectomy is needed to be applied (0.05%-0.09%). In our study 14 patients (0.77%) underwent hysterectomy because of the DUB in parallel with the literature (1,17-22).

The leading reason of hysterectomy was presented as leiomyomas (or fibroids in other words) in the literature (1-7, 23). Pavone et al. declared that leiomyomas accounted for 40%-60% of all the hysterectomies, this was compatible with our results (47.82%). There were also subtypes of the leiomyomas diagnosed as separately from the usual leiomyomas accounting 3.64%. Total rate is also compatible with the Pavone et al's results. Also we have found 2 leiomyosarcomas and 2 stromal sarcomas in 4 patients which were presumed leiomyomas (0.22%) in parallel with the study of Ruengkachorn et al (0.2%) (24). This means masses that seem like leiomyomas must be closely monitored and carefully managed.

The second leading reason of hysterectomy was prolapsus uteri (24.63%) parallel to the literature (25, 26). These patients were generally older than 50 years old.

Adenomyozis seemed to be the third common diagnosis with a rate of 12.84%. However in most of these patients, the diagnosis of the adenomyozis was not the only disease alone in hysterectomies. It was

mostly diagnosed together with leiomyomas. This means leiomyomas and adenomyozis often coexist in the same uterus with a prevalence ranging from 15% to 57% (10, 11, 27).

Another group of lesions that was composed of benign lesions (endometrial/endocervical polyps, Hyperplasias without atypia, Paratubal Cysts, Simple Cysts of ovary- follicular cysts, surface epithelial inclusion cysts, cystic corpus luteum-, Endometriosis) generally do not require hysterectomy but encountered as an accompanying disease by tumors (especially leiomyoma), adenomyosis and prolapsus uteri. They were diagnosed in 28.87% of the hysterectomies (28). The next small group was composed of premalignant lesions (Endometrial hyperplasia with atypia, LSIL, HSIL,GIN) with a ratio of 1.49% and benign tumors of the ovary (fibroma, fibrothecoma, serous/seromucinous/ mucinous cystadenomas, Benign Brenner tumor, mature teratoma) with a ratio of 6.61%.

The last group was the most important group as it was composed of borderline tumors (serous and seromucinous borderline tumors: 0.22%) and the malignant tumors (Endometrial endometrioid/serous carcinomas, ovarian fibrosarcoma, serous/mucinous carcinoma, clear cell carcinoma, granulosa cell tumor, brenner tumor, endometrioid carcinoma and metastasis of colonic carcinoma to ovary, cervical squamous/ adeno carcinomas, vaginal squamous/clear cell carcinomas and tubal serous carcinoma: 4.90%). These malignant tumors were the cases with the highest indication for hysterectomy (13-16, 29, 30). Fortunately malignancies occupy a very small group; however they are the most dangerous diseases that shorten the lives of the patients. So it is very important to diagnose these tumors as early as possible in order to begin the appropriate treatment quickly to provide the patients better survivals. As a result the reasons of the symptoms like AUB, pelvic pain must be researched in details for gynecological carcinomas and the cervical screening test with the cervicovaginal papanicolaou smear test must be applied to every women in fertility period for early diagnosis of cervical carcinomas.

References

1. Liu F, Pan Y, Liang Y, et al. The epidemiological profile of hysterectomy in rural Chinese women: A population-based study. *BMJ open* 2017; 7: e015351.
2. Barghouti FF, Yasein NA, Jaber RM, et al. Prevalence and risk factors of urinary incontinence among jordanian women: impact on their life. *Health Care Women Int* 2013; 34: 1015-1023.
3. Desai S, Campbell OM, Sinha T, et al. Incidence and determinants of hysterectomy in a low-income setting in Gujarat, India. *Health Policy Plan* 2017; 32: 68-78.
4. Stang A, Kluttig A, Moebus S, et al. Educational level, prevalence of hysterectomy, and age at amenorrhoea: a cross-sectional analysis of 9536 women from six population-based cohort studies in Germany. *BMC Womens Health* 2014; 14: 10.
5. Garry R. The future of hysterectomy. *BJOG* 2005; 112: 133-139.
6. Merrill RM. Hysterectomy surveillance in the United States, 1997 through 2005. *Med Sci Monit* 2008; 14: 24-31.
7. DeCherney AH, Bachmann G, Isaacson K, et al. Postoperative fatigue negatively impacts the daily lives of patients recovering from hysterectomy. *Obstet Gynecol* 2002; 99: 51-57.
8. Sun Y, Wang Y, Mao L, Wen J, Bai W. Prevalence of abnormal uterine bleeding according to new International Federation of Gynecology and Obstetrics classification in

- Chinese women of reproductive age. A cross-sectional study. *Medicine* 2018; 97: e11457.
9. Morassutto C, Monasta L, Ricci G, Barbone F, Ronfani L. Incidence and estimated prevalence of endometriosis and adenomyosis in Northeast Italy: A data linkage study. *PLoS ONE* 2016; 11: e0154227.
 10. Ates S, Ozcan P, Aydin S, Karaca N. Differences in clinical characteristics for the determination of adenomyosis coexisting with leiomyomas. *Obstet Gynaecol Res* 2016; 42: 307-312.
 11. Struble J, Reid S, Bedaiwy MA. Adenomyosis: A clinical review of a challenging gynecologic condition. *J Minim Invasive Gynecol* 2016; 23: 164-185.
 12. Cho HW, Koo YJ, Hong JH, Lee JK. Clinical indications for hysteroscopic removal of uterine masses: Time, age at diagnosis and mass size. *J Obstet Gynaecol* 2017; 43: 1751-1757.
 13. Yamagami W, Nagase S, Takahashi F, et al. Clinical statistics of gynecologic cancers in Japan. *J Gynecol Oncol* 2017; 28: e32.
 14. Rauh-Hain JA, Melamed A, Schaps D, et al. Racial and ethnic disparities over time in the treatment and mortality of women with gynecological malignancies. *Gynecol Oncol* 2018; 149: 4-11.
 15. Torre LA, Trabert B, DeSantis CE, et al. Ovarian cancer statistics, 2018. *CA Cancer J Clin* 2018; 68: 284-296.
 16. Plagens-Rotman K, Chmaj-Wierzchowska K, Pięta B, Bojar I. Modifiable lifestyle factors and ovarian cancer incidence in women. *Ann Agric Environ Med* 2018; 25: 36-40.
 17. Munro MG, Critchley HO, Fraser IS. The flexible FIGO classification concept for underlying causes of abnormal uterine bleeding. *Semin Reprod Med* 2011; 29: 391-399.
 18. Kazemijaliseh H, Ramezani Tehrani F, Behboudi-Gandevani S, et al. A population-based study of the prevalence of abnormal uterine bleeding and its related factors among Iranian reproductive-age women: An updated data. *Arch Iran Med* 2017; 20: 558-563.
 19. Liu Z, Doan QV, Blumenthal P, et al. A systematic review evaluating health-related quality of life, work impairment, and health care costs and utilization in abnormal uterine bleeding. *Value Health* 2007; 10: 173-182.
 20. Matteson KA, Raker CA, Clark MA, et al. Abnormal uterine bleeding, health status, and usual source of medical care: analyses using the Medical Expenditures Panel Survey. *J Womens Health (Larchmt)* 2013; 22: 959-965.
 21. Cote I, Jacobs P, Cummings D. Work loss associated with increased menstrual loss in the United States. *Obstet Gynecol* 2002; 100: 683-687.
 22. Munro MG, Dickersin K, Clark MA, et al. The Surgical Treatments Outcomes Project for Dysfunctional Uterine Bleeding: Summary of an Agency for Health Research and Quality-sponsored randomized trial of endometrial ablation versus hysterectomy for women with heavy menstrual bleeding. *Menopause* 2011; 18: 445-452.
 23. Pavone D, Clemenza S, Sorbi F, Fambrini M, Petraglia F. Epidemiology and risk factors of uterine fibroids. *Best Pract Res Clin Ob* 2018; 46: 3-11.
 24. Ruengkachorn I, Phithakwatchara N, Nawapun K, Hanamornroongruang S. Undiagnosed uterine sarcomas identified during surgery for presumed leiomyoma at a National Tertiary Hospital in Thailand: A 10-year review. *Int J Gynecol Cancer* 2017; 27: 973-978.
 25. Gerten KA, Markland AD, Lloyd LK, Richter HE. Prolapse and incontinence surgery in older women. *J Urol* 2008; 179: 2111-2118.
 26. Handa VL, Garret E, Hendrix SDO, Gold E. Progression and remission of pelvic organ prolapse: A longitudinal study of menopausal women. *Am J Obstet Gynecol* 2004; 190: 27-32.
 27. Weiss G, Maseelall P, Schott LL, et al. Adenomyosis a variant, not a disease? Evidence from hysterectomized menopausal women in the Study of Women's Health Across the Nation (SWAN). *Fertil Steril* 2009; 91: 201-206.
 28. Kurman RJ, Carcangiu ML, Herrington CS, Young RH. WHO classification of tumours of female reproductive organs. 4th Edition, Lyon: IARC, 2014.
 29. Genç M, Çenç B, Korkut B, Turan A, Kurt S. Postmenopozal dönemde overin granüloza hücreli tümörü: Olgu sunumu ve literatürün gözden geçirilmesi. *Fırat Üniversitesi Sağlık Bilimleri Tıp Dergisi* 2012; 26: 93-96.
 30. Nayar R, Wilbur DC. The Pap test and Bethesda 2014. *Cancer Cytopathol* 2015; 123: 271-281.