A survey on the histopathologic findings in 636 cases of hysterectomy: A sonographic assessment study

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ABSTRACT

The present study evaluate the histopathologic findings and clinical indications in hysterectomized patients based on sonographic assessments. This study population consisted of all patients who were referred to the Pathology Ward of Imam Reza educational and treatment Center (Kermanshah, Iran) during March 2006 to May 2012. The samples were stained with hematoxylin-eosin after fixation in formalin. 636 cases of hysterectomy were examined. 232 patients (50.7%) underwent salpingo oophorectomy. The most cases of hysterectomy have been performed in multipara women. The most common indications for trans-abdominal hysterectomy were fibroma (in 38.8% of cases), adenomyosis, ovarian cancer, uterine cancer and endometrial hyperplasia, respectively. The histopathologic results showed that fortunately benign diseases were the most common findings in hysterectomy cases.

Key words: Hysterectomy, Histopathology, Abnormal Uterine Bleeding, Endometrial Hyperplasia, Uterine Cancer

INTRODUCTION

Uterus is a vital organ which may undergo benign or malignant diseases (Maddah, 2013). There are various treatments for uterine diseases including hormonal or surgical treatments where hysterectomy is the most common treatment. Hysterectomy means removal of the uterus. There are several types of hysterectomy including supracervical hysterectomy, abdominal hysterectomy, vaginal hysterectomy and hysterectomy with unilateral or bilateral removal of adnexa. In 2003, more than 600,000 hysterectomies performed in the United States which 90% of cases were due to benign diseases(Bachmann, 1990; Bashir et al., 2005; Harris, 1995; Taravati, 2013). Hysterectomy due to diseases such as symptomatic myosis, endometriosis, abnormal uterine bleeding and dysmenorrhea is associated with few complications. However, the complications of this type of surgery depend on the patient's underlying disease and surgeon experience(Brown JS, 2000; Thakar et al., 2001). Past reports demonstrated that, 20% of women who underwent hysterectomy prior to 60 years old because of abnormal uterine bleeding, only 40% had

no abnormal pathology(Pherson KMC, 2004).There is not any report about prevalence and complications of hysterectomy in Iran. According to low response to hormonal treatments, there have been always concerns about the increase of this type of surgery. The aim of present study is to analyze and determine the common indications of hysterectomy through assessing the histopathologic characteristics of these cases as well as determining any relationship between them and sonographic characteristics.

MATERIALS AND METHODS

This is a descriptive and analytical study conducted on the patients who underwent hysterectomy in the Obstetrics and Gynecology Ward of educational and treatment Hospital of Imam Reza (Kermanshah, Iran) during March 2006 to May 2012. The hysterectomy cases following normal or cesarean deliveries were excluded from the study. The study was conducted without any age restrictions. The demographic data including age, parity, complaints, type of surgery, preoperative diagnosis and hysterectomy indications were studied. After the operation, the histopathologic reports were collected from the Pathology Ward of Imam Reza Hospital. The data were analyzed using the statistical package of SPSS (version 16). One and two-dimensional tables (in number and percentage) were used for data description and calculation of numerical parameters (such as mean and standard deviation). Choprov correlation coefficient, chi-square test and Kappa concordance correlation coefficient were used for analytical analysis.
Statistical significance was accepted if $P < 0.05$.

RESULTS AND DISCUSSION

The records of 636 patients who underwent hysterectomy during 2005-2012 were collected. The relationships between the age, parity, clinical indications, sonographic findings, type of surgery and histopathologic findings were investigated. The average age of patients was 49.26 years old with the age range of 19-90 years old (Table 1). Most patients were in the age group of 41-50 years old (47.5%). The average number of pregnancies was 6.36. The highest frequency of pregnancies was in the range of 2 to 6 times (62.1%), respectively. The most two frequent complains of the patients were about abnormal uterine bleeding (74.7%) and chronic pelvic pain (14.8%), respectively (Table 2). In this study, 474 patients had abdominal sonographic records at the time of menstruation prior to surgery. The endometrial thickness of 5 mm was considered as DUB (uterine dysfunction) in sonographic examination. Leiomyoma was the most frequent report of preoperative sonography (53.2%) (Table 3). The most common hysterectomy was associated with bilateral salpingo-oophorectomy (50.7%) which the highest frequency was observed in the age group 41-50 years old (Table 4). There was a significant relationship between the type of surgery and the age of patients ($P = 0.001$). The most common pathologies were leiomyoma (38.8 %), and adenomyosis (19.8%), respectively (Table 5). A significant relationship was observed between the type of surgery and clinical findings (Table 6). Hysterectomy is a successful surgery for treatment of the uterus and adnexa diseases such as leiomyoma, DUB, adenomyosis, endometriosis, uterine prolapse, upper pelvic pains, and uterus and appendages malignancies(Campbell & Monga, 2000). Other surgical procedures including endometrial laser ablation (ELA) (laser-assisted resection of endometrial) and trans-cervical resection of endometrial, and uterine artery embolization are considered as conservative operations(Campbell & Monga, 2000; COULTER et al., 1991). In some regions of Africa and Nigeria, women have a high tendency for hysterectomy due to sociocultural issues. Thus, this region is considered as a region of the high frequency of hysterectomy(Adelusola & Ogunniyi, 2001). The results of the present study showed that the hysterectomy is primarily performed in the case of uterine leiomyoma, abnormal uterine bleeding, and chronic pelvic pain and pelvic masses. Malignancies

were reported in 9.1% of the pathological reports. However, only 79% chance of preoperatively malignancy was associated with sonographic and clinical findings and only 33.8% of patients referred with the complaints of abnormal uterine bleeding. The age and parity are considered as important pre-hysterectomy factors(Seffah JD, 2005). In the present study, the average age was 50 years old. In other studies, the average age was between 31 to 60 years old(Emembolu, 1987; Ezem & Otubu, 1981; MacKenzie, 1996; Orji EO, 2002). In a study that was conducted in the Iranian population, the average age of women who underwent hysterectomy was 40-44 years old (Khaniki M, 2011). In the present study, the mean parity was 6.36 with an age range of 0 to 19 years old. 3% of cases were nulligravid women and 1.2% of women had been pregnant only once. The result of a study in Nigeria showed that the mean parity was 4(MacKenzie, 1996). The difference between the age and number of pregnancies can be due to sociocultural differences and the use of contraceptive methods. The most common clinical complaints of patients were abnormal bleeding (74.7%) and chronic pelvic pain (14.8 percent), respectively. The results of Khaniky(Khaniki M, 2011) showed that the most common complaints of patients were AUB (62.2%) and abdominal mass in sonography (14.7%), respectively. In a similar study in India, AUB has been reported as the most common complaint with a frequency of 66% (Khaniki M, 2011). According to the national hospital discharge survey (NHDS), leiomyoma was the most common clinical and sonographic diagnosis (32 percent) which was associated with AUB symptoms in 16.6% of cases. Adenomyosis was the next symptom with a prevalence of 19.8% in women older than 18 years old (Modupeola S, 2009). However, in Pakistan, the most common pathologic finding in hysterectomy was chronic cervicitis with a prevalence of 38.8% along with uterine unremarkable findings because of the high prevalence of uterine prolapse in those areas. The results of the present study showed that leiomyoma was the uterine pathological finding in 38.8% of cases. Furthermore, the removal of uterine malignancies in initial studies have been possible, while 23.9 percent of patients with abdominal mass complaint had ovarian or uterine cancers. Only 3.6% of patients with AUB complaint suffered from uterine cancer. A statistically significant relationship was observed between the pathological findings and the complaints of patients (P = 0.001).

Conclusion

Leiomyoma was the most common clinical indication for hysterectomy and histologic findings. More than 66 % of clinical indications were consistent with histopathological results.

Acknowledgments

The author wish to thank the staff of Pathology Ward and Medical Records of Imam Reza Hospital.

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Table 1 – Frequency distribution (number and percentage) of the age of patients

Age	Number	Percentage %
<30	13	2
40-31	89	14
41-50	302	47.5
51-60	162	25.5
60<	70	11
Total	636	100

Table 2 – Frequency distribution (number and percentage) of clinical complaints of patients

clinical complaints of patients	number	percentage
abnormal uterine bleeding	475	74.7
chronic pelvic pain	94	14.8
Abdominal mass	67	10.5

Table 3 – Frequency distribution (number and percentage) of sonographic findings

Sonographic findings	number	percentage
Adenomyosis and leiomyoma	252	53.2
Adnexal masses	78	16.5
Endometrial Hyperplasia	30	6.3
Other	114	24.1

Table 4 – Frequency distribution (number and percentage) of the age of the patients in terms of the type of surgery

Age		Kind of surgery				Total
		TAH	*TAH BSO*	*TAH USO*	*TVH*	
<30	Number	5	1	7	0	13
	%	4.1%	0.3%	5.9%	0	2%
40-31	Number	34	16	35	4	89
	%	28.1%	5%	29.4%	5.4%	14%
41-50	Number	66	157	67	12	302
	%	54.5%	48.8%	56.3%	16.2%	47.4%
51-60	Number	12	118	8	24	162
	%	9.9%	36.6%	6.7%	32.4%	25.5%
60<	Number	4	30	2	34	70
	%	3.3%	9.3%	1.7%	45.9%	11%
Total	Number	121	322	119	74	636
	%	100%	100%	100%	100%	100%

Table 5 – Frequency distribution (number and percentage) of the pathological reports

the pathological reports	number	percentage
Leiomyoma	247	38.8%
Adenomyosis	126	19.8%
Ovarian Cancer	48	7.5%
Uterine Cancer	8	1.3%
Endometrial Hyperplasia	8	1.3%
Cervical cancer	3	0.5%
Other	196	30.9%

Table 6- Frequency distribution (number and percentage) of the pathological reports in terms of the type of surgery

the pathological reports		Kind of surgery				Total
		TAH	TAH BSO	TAH USO	TVH	
	Number	21	67	23	15	126
	%	17.4%	20.8%	19.3%	20.3%	19.8%
	Number	0	7	1	0	8
	%	0	2.2%	0.8%	0	1.3%
	Number	61	132	50	4	247
	%	50.4%	41%	42%	5.4%	38.8%
	Number	5	35	8	0	48
	%	4.1%	10.9%	6.7%	0	7.5%
	Number	2	0	1	0	3
	%	1.7%	0	0.8%	0	0.5%
	Number	0	1	0	0	1
	%	0	0.3%	0	0	0.2%
	Number	1	5	2	0	8
	%	0.8%	1.6%	1.7%	0	1.3%
	Number	31	75	34	55	195
	%	25.6%	23.3%	28.6%	74.3%	30.7%
Total	Number	121	322	119	74	636
	%	100%	100%	100%	100%	100%