Clinical Surgery Journal

Clinical Research | Vol 5 Iss 1

Compression of Clinical Indications for Hysterectomy and Pathologic Findings after Hysterectomy

Shokouh Taghipour Zahir, Zahra Heidarymeybodi, and Motahare Beiki

Shahid Sadoughi General Hospital, ShahidSadoughi University of Medical Sciences, Yazd, Iran

Correspondence should be addressed to Zahra Heidarymeybodi, Student Researcher Committee, Shahid Sadoughi General Hospital, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

Received: December 28, 2021; Accepted: January 17, 2022; Published: January 24, 2022

ABSRACT

AIM

Hysterectomy is one of the most common gynecological surgeries that can affect all aspect of a woman's life. The purpose of this study to compare indications with pathologic findings and to find out whether the hysterectomy performed in a necessary situation.

METHODS

The descriptive study carried out on all patients underwent hysterectomy between 2015 and 2020 in Shahid Sadoughi hospital in Yazd, Iran. Patients' information includes patients' age, the approach of the hysterectomy, and the reason for the hysterectomy, pathology reports retrieved from hospital records. All the data analyzed by SPSS ver. 25 for windows and the $P<0.05$ were considered as statistically significant.

RESULTS

The study includes 1362 Patients with a mean age of 51.53 ± 10.21. Benign indications account for 77.8% (n = 1086) of the hysterectomies whereas malignant indications account for only 3% (n = 46) of the hysterectomies. uterine pathology was adenomyosis in 27.7% (n = 386) followed by fibroma in 25.7% (n = 358) of the cases. Pathological reports for the cervix were inflammation in 927(69.3%) of the cases. Almost half of the hysterectomies (47.1%, n = 657) was done without oophorectomy, and physiologic ovarian cysts were found in 26.5% (369) of the cases.

CONCLUSION

The result of the study indicates that most the patients who undergone hysterectomy were around menopausal age and due to benign lesions of genital organs. Indication for the surgery was commonly abnormal uterine bleeding and lower abdominal pain in most of the patients. Almost half of the hysterectomies were done without oophorectomy.

Citation: Yunhao Xue, Compression of Clinical Indications for Hysterectomy and Pathologic Findings after Hysterectomy. Clin Surg J 5(1): 17-23.

KEYWORDS

Hysterectomy; Histopathology; Gynecological disease; Uterine pathology

INTRODUCTION

Hysterectomy is the most common gynecological surgery just after cesarean section [1]. Approximately 45% of women below the age of 65 undergo hysterectomy [2]. Although the incidence of hysterectomy has declined over the past few years, one out of nine women in the United States continues to have hysterectomy [3]. The prevalence of hysterectomy varies with time and also with geographical locations [4]. A wide range of diseases and conditions lead to hysterectomy, including abnormal uterine bleeding, adenomyosis, endometriosis, uterine prolapse, pelvic pain, pelvic malignancies and inflammatory diseases [5]. The majority of hysterectomies were performed for benign lesions, whereas malignancies account for only 10% of hysterectomy indications [6].

Although hysterectomy is a definitive treatment for a number of uterine diseases, like all surgeries, has complications that vary according to the technique and the chosen approach [7]. However, the most common ones are infection, thromboembolic diseases, damage to adjacent organs, bleeding, nerve damage, and opening of vaginal cuff [8]. In addition to the recently mentioned physical complications, hysterectomy also affects the emotional and sexual life of women, especially if they are under the age of menopause [9]. The risk of such complications has been reported 10 to 40 percent in previous studies [9]. The high prevalence of hysterectomy as well as the complications that affect different aspects of women's life indicate the importance of hysterectomy studies. Also, recent investigation reported that hysterectomy operation may overused [10] thus we think it is important to compare pathological characteristics after hysterectomy with initial indication for the surgery. The purpose of this study was to evaluate the causes of hysterectomy in patients referred to gynecologist, and to compare indication with pathologic findings.

METHODS

This retrospective descriptive study was conducted on all patients underwent hysterectomy between 2015 and 2020 in Shahid Sadoughi general hospital, Yazd, Iran. Pre-prepared data-extract forms contains the following: patient's age, cause of hysterectomy, type of hysterectomy (total or sub-total), hysterectomy approach (abdominal or vaginal), and oophorectomy status (not included, Unilateral or bilateral) and final pathological reports. Researchers used hospital-recorded information to extract data for the study. The Patients whom recorded information was incomplete or inaccessible were excluded. According to the Helsinki Treaty and the Ethics Committee of the Shahid Sadoghi Hospital, informed consent was taken from all patients prior to consider as a case of the study.

All data were analyzed by using SPSS ver. 25. The patients' age reported with mean and standard deviation (SD) and with median and range if not normally distributed. Cross tabulation was used to report the number of performed hysterectomies according approach of hysterectomy, type of hysterectomy (total or sub-total, abdominal or vaginal, with or without oophorectomy), indications for hysterectomy, and pathologic findings. Mann-Whitney U test was used to compare median age in different groups. P value less than 0.05 was considered statistically significant.

RESULTS

The study included 1362 women with a mean age of 51.53 ± 10.23. Most hysterectomies were done due to benign indications (n = 1086, 77.8%). Premalignant, malignant,

obstetrics indications account for 14.5% (n = 204), 3% (n = 46), 2.6% (n = 36) respectively. Overall, the major indication for hysterectomy was abnormal uterine bleeding (AUB) (n = 790, 56.6%) followed by abdominal pain (n = 169, 12.1%). The other causes of hysterectomy with the median age of patients were summarized in Table 1.

Approach for hysterectomy	N (%)	Mean(range)
Trans abdominal	579(41.5%)	46.56(32-70)
Trans abdominal + bi salpango-oophorectomy	491(35.2%)	54.26(38-80)
Trans abdominal + unisalpango -oophorectomy	217(15.6)	48.09(30-65)
Trans vaginal	52(3.7%)	63.96(46-84)
subtotal	32(2.3%)	36.28(24-50)
Subtotal + unisalpango - oophorectomy	16(1.1%)	40.37(28-67)
Subtotal + bi salpango - oophorectomy	8(0.6%)	50.37(33-75)

Table 1: Patients' frequency and age based on approach for hysterectomy.

		Number (%)	Median(range)
Benign indications	AUB	790(56.6%)	47(30-75)
	Abdominal pain	169(12.1%)	58(20-82)
	PMB	96(6.9%)	61(22-87)
	Fibroma	53(3.8%)	46(33-56)
	procidentia	15(1.1%)	54(34-82)
	endometriosis	7(0.5%)	30(21-39)
	hermaphrodism	1(0.1%)	25
	uterine	1(0.1%)	18
Premalignant indications	Abdominal mass	32(2.3%)	53(34-81)
	Pelvic mass	22(1.6%)	50(37-77)
	Endometrial hyperplasia	17(1.2%)	47(34-66)
	Ovarian tumor	86(6.2%)	53(30-82)
Malignant indications	cancer	42(3%)	43(31-85)
Obstetrics	Mole hydatiform	13(0.9%)	42(37-56)
	Severe bleeding after c-section	23(1.6%)	32(20-41)

Table 2: Indications for hysterectomy.

Benign indications (1086, 77.8%)	**Cervix:** cervicitis (734, 69.7%), polyp (211, 20%), cancer (22, 2.1%), leiomyoma (3, 0.3%), squamous metaplasia (67, 6.4%), normal (16, 1.5%)
	Uterus: adenomyosis-myoma (222, 20.4%), adenomyosis (308, 28.4%), atrophic (66, 6.1%), cancer (68, 6.3%), decadal and placental villi (2, 0.2%), endometritis (1, 0.1%), myoma (303, 27.9%), normal (101, 9.3%), polyp (15, 1.4%)
	Ovaries: cyst (218, 43.4%), adenoma (24, 4.8%), atrophic (39, 7.8%), brenner tumor (3, 0.6%), cancer (4, 0.5%), corpora albicanta (78, 15.5%), endometriosis (5, 1%), mature teratoma (9, 1.8%), metastatic cancer (1, 0,2%), fibroma (4, 0,8%), normal (117, 23.3%)
Premalignant Indications (204, 14.6%)	**Cervix:** cervicitis (139, 68.8%), polyp (40, 19.8%), cancer (8, 4%), leiomyoma (1, 0.5%), squamous metaplasia (9, 4.5%), normal (5, 2.5%)
	Uterus: adenomyosis-myoma (23, 11.3%), adenomyosis (60, 29.5%), atrophic (26, 12.7%), cancer (14, 6.9%), myoma (39, 19.1%), normal (37, 18.1%), polyp (4, 2%), TB (1, 0.5%)
	Ovaries: cyst (32, 18.1%), adenoma (26, 14.7%), atrophic (14, 7.9%), brenner tumor (2, 1.1%), cancer (33, 18.6%), corpora albicanta (34, 13.6%), endometriosis (3, 1.7%), mature teratoma (6, 3.4%), metastatic cancer (10, 5.6%), fibroma (7, 4%), TB (1, 0.6%), normal (19, 10.7%)
Malignant indications (42, 3%)	**Cervix:** cervicitis (24, 58.5%), polyp (5, 12.2%), cancer (8, 19.5%), squamous metaplasia (3, 7.2%), normal (1, 2.4%)
	Uterus: adenomyosis-myoma (3, 7.1%), adenomyosis (10, 23.8%), atrophic (3, 7.1%), cancer (9, 21.4%), myoma (4, 9.5%), normal (12, 28.6%), polyp (1, 2.4%)
	Ovaries: cyst (9, 32.1%), atrophic (7, 25%), corpora albicanta (5, 17.9%), metastatic cancer (1, 3.6%), fibroma (1, 3.6%), normal (5, 17.9%)
Obstetrics (36, 2.6%)	**Cervix:** cervicitis (16, 80%), polyp (4, 20%)
	Uterus: cancer (1, 2.8%), dilated blood vessel (1, 2.8%), endometritis (2, 5.6%), interstitial edema (1, 2.8%), mol (10, 27.8%), myoma (1, 2.8%), normal (5, 13.9%), placenta (15, 41.7%)
	Ovaries: cyst (5, 83.3%), corpora albicanta (1, 16.7%)

Table 3: Pathological reports of the cervix, uterus and ovaries.

There was a significant difference in mean age of the patients according to the indication of hysterectomy (P <0.001). The majority of hysterectomies were done totally and the prevalence of sub-total hysterectomy was only 4.1% (n = 57). Vaginal hysterectomy was performed in only 3.7% (n = 52) and bilateral oophorectomy in 35.8% (n = 499) of hysterectomies. The details of the hysterectomy procedures and the mean age of the patients according to the chosen procedure are summarized in Table 2. The median age of patients was significantly different according to the hysterectomy procedure (P <0.001). The histopathology of cervix, ovary and uterine were reported separately based on the hysterectomies' indication in Table 3. Totally the major pathologic finding of the cervix was cervicitis (927, 69.3%), of the uterus were adenomyosis (386, 27.7%) followed by leiomyoma (358, 25.7%), and of the ovaries was physiologic cysts (284, 38). The pathologic findings show malignant lesions in 8.7% (n = 64) of the ovaries, in 2.9% (n = 39) of the cervix and in the 6.8% (n = 96) of the uterus.

DISCUSSION

Hysterectomy is one of the most common and major gynecological surgery that, although considered as a definitive treatment for some of the gynecologic problems, is associated with both physical and psychological complications [8,9]. The prevalence of hysterectomy varies across countries and even within one country in different contexts [11]. The rate of performed hysterectomy is decline in the past few years but there is still overused for reasons such as lack of less invasive options for treatment of benign diseases [10].

The mean age of the patient's undergone hysterectomy was 51.53 ± 10.23, which is similar to that of the study performed by Khaniki et al. [12] in Iran, Tehran, 2005-2009 which the mean age of the patients was 49.6 ± 11.3. In a study by Begum et al. [7] from 2010 to 2013 in central Bangladesh, patients' age ranged were 35 years to 60 years, most of them in the 45 years to 50 years. In a national study by Gantel et al. [13] from 2000 to 2014 in Portugal, the mean age of patients in 2000 was 51 ± 11.4, compared to 55.2 ± 12.3 in 2014.

Uterine leiomyoma (fibroma) and dysfunctional hemorrhage comprise 20% and 30% of hysterectomy indications, respectively [4]. Patients with Uterine leiomyoma complain of excessive bleeding, pelvic and back pain and urinary problems [4]. Uterine dysfunction hemorrhages are only diagnosed when this hemorrhage cannot be linked to leiomyoma, polyps, malignancies, pregnancy, and pelvic infections [4]. In the louto [14] study, the majority of hysterectomies were due to leiomyomas (50%), followed by adenomyosis, prolapse, uterine bleeding, and cancer. In the study of Debodinance et al. [15] abnormal bleeding, adenomyosis and endometrial hyperplasia were the main indications for hysterectomy. The study done by Sucheta et al. [16] uterine dysfunction hemorrhage accounted for 33%, fibroma 23% and prolapse 20% of hysterectomy indications.

The incidence of cervical malignancies has declined dramatically in recent years due to very effective screening tools [17]. But the incidence of uterus and ovarian malignancies has not changed much [17]. In this study, 3% of the primary indications were malignant lesions and 14.5% were premalignant lesions. After hysterectomy, pathology reports showed malignant lesion in 8.7%of the ovaries, 2.9% of the cervix and 6.8% (n = 96) of the uterus samples. Similar to our study, in a US study conducted between 2000 and 2004 [3], malignancies accounted for only 10% of hysterectomy indications.

Different approaches are used for hysterectomy, which are most commonly abdominal, vaginal and laparoscopic approaches. Abdominal approach, almost universally, is the most commonly used approach for the hysterectomy. In a study by Sucheta et al. [16] in India 63% of hysterectomies were abdominal and 37% were vaginal. A

2003 US study [3] found that 66.1% hysterectomies were performed by abdominal approach. The results of this study, like other studies, showed that the majority of hysterectomies were abdominal and only 3.7% were vaginal. Vaginal hysterectomy is favorable over abdominal procedures for the reasons such as easier recovery, shorter hospital stays, less use of painkillers, and lack of abdominal sutures (cosmetic superiority) [18]. However, abdominal surgery was still the preferred method among gynecologist surgeons [3,7].

The patients' age may have a role in surgeons' decision for choosing hysterectomy approach. In a study by Lai et al. [19], vaginal hysterectomy was performed for older women with mean age of 61.2 ± 12.2 and abdominal hysterectomy for women with mean age of 47.5 ± 9.2. In a study by Wu et al. [3] In the United States, patients undergoing abdominal surgery were significantly younger than patients undergoing vaginal hysterectomy (mean age: 44.5 ± 0.1 *vs.* 48.2 ± 0.2). In this study, as in the mentioned studies, the mean age of patients who underwent vaginal procedures was significantly higher than the abdominal approach.

Hysterectomy can be performed with or without cervical removal (sub-total) and also with unilateral or bilateral ovarian resection. There are geographical differences in the prevalence of sub-total hysterectomy and simultaneous oophorectomy [17]. The prevalence of Subtotal hysterectomies in the United States was 7%, in England was 4% and in Germany was 4.7%, while this method is higher in the Scandinavian countries as in Sweden, in 2003, 18% of the performed hysterectomies were sub-total [5,17,20-22]. The majority of hysterectomies in this study were also total and the prevalence of sub-total hysterectomy was only 4.1%. The prevalence of hysterectomy with bilateral oophorectomy in the United States was 54%, Australia 30%, Germany 12% [17].

In this study, hysterectomy (total or sub-total) with bilateral oophorectomy was seen in 35.8% of cases.

The limitations of this study include performing it in a single center, and the patients were not followed and so patients' physical, sexual and psychological complications after hysterectomy were not evaluated. The major strengths of this study are the higher number of patients than similar studies in Iran and also the presentation of uterine, cervical and ovarian pathology after hysterectomy.

CONCLUSION

The results of this study showed that the majority of hysterectomies were performed around the age of menopause and most of the indications are related to benign lesions. Abnormal bleeding and abdominal pain were the most common complaints among patients. According to pathology reports after hysterectomy, uterine adenomyosis and leiomyomas constituted the majority of uterine lesions. Ovarian resection (unilateral or bilateral) was seen in approximately half of the hysterectomies, with the majority reporting a physiologic cyst that were similar to other studies and it seems that in our center approach to hysterectomies were not higher than reported studies in different countries.

AVAILABILITY OF DATA

The data used to support the findings of this study are available from the corresponding author upon request.

CONFLICT OF INTEREST

The authors disclose no conflict of interest.

FUNDING

The authors receive no funding for the investigations.

REFERENCES

1. Davies A, Magos AL (1997) Indications and alternatives to hysterectomy. Baillière's Clinical Obstetrics and Gynaecology 11(1): 61-75.
2. Banu NS, Manyonda IT (2005) Alternative medical and surgical options to hysterectomy. Best practice & Research Clinical Obstetrics & Gynaecology 19(3): 431-449.
3. Wu JM, Wechter ME, Geller EJ, et al. (2007) Hysterectomy rates in the United States, 2003. Obstetrics & Gynecology 110(5): 1091-1095.
4. Carlson KJ, Nichols DH, Schiff I (1993) Indications for hysterectomy. The New England Journal of Medicine 328(12): 856-860.
5. Merrill RM (2008) Hysterectomy surveillance in the United States, 1997 through 2005. Medical Science Monitor 14(1): CR24-CR31.
6. Whiteman MK, Hillis SD, Jamieson DJ, et al. (2008) Inpatient hysterectomy surveillance in the United States, 2000-2004. American journal of Obstetrics and Gynecology 198(1): 34.e31-34.e37.
7. Begum S, Akhtar R, Barua S, et al. (2014) A cross sectional descriptive study on non-descent vaginal hysterectomy (NDVH). Chattagram Maa-O-Shishu Hospital Medical College Journal 13(1): 13-16.
8. Clarke-Pearson DL, Geller EJ (2013) Complications of hysterectomy. Obstetrics & Gynecology 121(3): 654-673.
9. Shirinkam F, Jannat-Alipoor Z, Shirinkam Chavari R, et al. (2018) Sexuality after hysterectomy: A qualitative study on women's sexual experience after hysterectomy. International Journal of Women's Health and Reproduction Sciences 6: 27-35.
10. Stewart EA, Shuster LT, Rocca WA (2012) Reassessing hysterectomy. Minnesota Medicine 95(3): 36.
11. Lauterbach R, Joseph M, Haklai Z, et al. (2019) Geographic variation of hysterectomy rates in the Israeli health care system during the years 2007-2016. Israel Journal of Health Policy Research 8(1): 52.
12. Khaniki M, Shojaie M, Tarafdari A (2011) Histopathological study of hysterectomy operations in a university clinic in Tehran from 2005 to 2009. Journal of Family and Reproductive Health 5(2): 51-55.
13. Gante I, Medeiros-Borges C, Aguas F (2017) Hysterectomies in Portugal (2000-2014): What has changed? European Journal of Obstetrics & Gynecology and Reproductive Biology 208: 97-102.
14. Luoto R, Kaprio J, Keskimaki I, et al. (1994) Incidence, causes and surgical methods for hysterectomy in Finland, 1987-1989. International Journal of Epidemiology 23(2): 348-358.
15. Debodinance P (2001) Hysterectomy for benign lesions in the north of France: Epidemiology and postoperative events. Journal de Gynecologie, Obstetrique et Biologie de la Reproduction 30(2): 151-159.
16. Sucheta K, Manangi M, Madhu K, et al. (2016) Hysterectomy: Clinical profile, indications and postoperative complications. International Journal of Reproduction, Contraceptive Obstetrics Gynecology 5(7): 2093-2096.
17. Hammer A, Rositch AF, Kahlert J, et al. (2015) Global epidemiology of hysterectomy: Possible impact on gynecological cancer rates. American Journal of Obstetrics and Gynecology 213(1): 23-29.
18. Ottarsdottir H, Cohen SL, Cox M, et al. (2017) Trends in mode of hysterectomy after the US Food and Drug Administration power morcellation advisory. Obstetrics & Gynecology 129(6): 1014-1021.
19. Lai JC-Y, Huang N, Huang S-M, et al. (2015) Decreasing trend of hysterectomy in Taiwan: A population-based study, 1997-2010. Taiwanese Journal of Obstetrics and Gynecology 54(5): 512-518.

20. MacKenzie IZ, Naish C, Rees M, et al. (2004) 1170 consecutive hysterectomies: Indications and pathology. Post Reproductive Health - British Menopause Society Journal 10(3): 108-112.
21. Stang A, Merrill RM, Kuss O (2012) Prevalence-corrected hysterectomy rates by age and indication in Germany 2005-2006. Archives of Gynecology and Obstetrics 286(5): 1193-1200.
22. Lundholm C, Forsgren C, Johansson AL, et al. (2009) Hysterectomy on benign indications in Sweden 1987-2003: A nationwide trend analysis. Acta Obstetricia et Gynecologica Scandinavica 88(1): 52-58.