

Survey on the Causes of Hysterectomy in Shahidsadoughi Hospital 2008 - 2018

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ABSTRACT

Background: Hysterectomy is one of the common surgeries among women, most frequently performed in the 43-49 years age group, often near menopause. The preoperative diagnosis of hysterectomy is possible by clinical examinations and accurate paraclinical tests. There are various methods for hysterectomy such as abdominal, vaginal, and laparoscopic hysterectomy which are selected on the basis of the patient's condition and available equipment and facilities. Regarding the point that hysterectomy results in the excision of the uterus from the body leading to infertility, it affects the personal and familial life of the patient while many people in Yazd, central Iran, are not aware of the causes of this surgical operation.

Aim: To investigate the factors that lead to the need for hysterectomy.

Methods: In this retrospective descriptive-analytic study, the records of 1403 patients who had presented to the medical center from March, 21st, 2008 to March 21st, 2018 were surveyed. The data bank of the information of the patients undergoing hysterectomy is kept at Shahid Sadoughi Sub-specialty Hospital in Yazd, Iran. The extracted patients information included age, clinical signs before hysterectomy, type of surgery performed, and the pathology report of the uterus and related appendages. The gleaned data were analyzed using SPSS21 with Chi-square test used to compare the variables in different groups.

Results: An investigation of the records of the patients undergoing hysterectomy showed that the highest rate of this surgery belonged to the 41-50 years age group. A comparison of the clinical signs of various age groups demonstrated that most clinical signs observed in all age groups undergoing hysterectomy were vaginal bleeding and abnormal secretions followed by abdominal and pelvic pain ranking as the second and third clinical signs. In the pathology report on the cervix and endometrium, reactive lesions were reported more frequently while benign lesions were reported on myometrium and ovaries.

Conclusion: This study revealed that hysterectomy was most prevalent in this region in the 41-50 years age group and the pathology report mostly referred to reactive lesions and benign lesions. A comprehensive study of hysterectomy demands a greater study. Also, since hysterectomy negatively affects the personal and familial life of the patient, there is the need for a more extensive study of the life style and psychosocial condition of the patients after this surgery.

Keywords: Hysterectomy, Uterine Diseases, Age Factors.

INTRODUCTION

Hysterectomy is one of the common surgeries among women¹ with the highest prevalence in the 43-49 years age group, often near menopause². The prevalence of this surgical operation varies with the geographical region. In Germany, the prevalence of hysterectomy is 362.9 out of 100,000 women per year (3) while in the USA, this rate is 5.4 out of 1000 women per year⁴. The preoperative diagnosis of this surgery is possible via clinical examinations and exact paraclinical tests. There are various methods of hysterectomy like the abdominal, vaginal, and laparoscopic hysterectomy one of which is selected on the basis of the patient's condition and the available equipment and facilities². Occasionally, the cervix and ovaries are also excised depending on the cause of the surgery and the patient's condition. The etiology of hysterectomy has been different in various studies and some studies have attributed 70% of causes of this operation to benign causes like menorrhagia, fibroids, pelvic pain, and uterus prolapse⁵. Since hysterectomy culminates in the removal of the uterus from the body leading to infertility, this affects the personal and familial life of the patient while many people in Yazd, central Iran, are not aware of the causes of this surgical operation. So, this

study aimed at investigating the factors that render the need for hysterectomy as mandatory.

METHOD

This was a retrospective descriptive-analytic study in which the records of 1403 patients who had presented to the medical center during 10 years from March, 21st, 2008 to March 21st, 2018 were surveyed. The data bank of the information of the patients undergoing hysterectomy is kept at Shahid Sadoughi Sub-specialty Hospital in Yazd, Iran. The culled patients information included age, clinical signs before hysterectomy, type of surgery performed, and the pathology report of the uterus and related appendages. The researcher-made questionnaire included four age groups of patients: the 20-40 years age group, the 41-50 years age group, the 51-60 years age group, and the 60+ years age group. Also, the preoperative clinical signs were classified into three categories: the first category included abdominal and pelvic pains, the second category included vaginal bleeding and abnormal secretions, and the third category, labeled as "Others" here, included miscellaneous signs like patients without signs, ascites, prolapse, urinary signs, postpartum bleeding, and dyspareunia (painful coitus). Regarding the type of surgery, there are two types: total

(radical) hysterectomy with or without removal of one or both ovaries, and subtotal (partial) hysterectomy with or without removal of one or both ovaries. The section of the questionnaire on pathology contained 5 major categories including cervix pathology report, myometrium report, endometrium report, right ovary report, and left ovary report. The pathology report pertaining to each of these 5 categories included benign lesions, malignant lesions, and reactive lesions. Finally, the gleaned data were analyzed using SPSS21 with Chi-square test to compare the variables in various groups.

RESULTS

The findings of the records of 1403 patients undergoing hysterectomy demonstrated that the highest rate of this surgery occurred in the 41-50 years age group (50.2%). The results of comparison of clinical signs in terms of age group are displayed in Table 1. The most common signs observed in all age groups of patients undergoing hysterectomy were vaginal bleeding and abnormal discharge followed by abdominal and pelvic pain.

The category of "Others" included patients without signs, ascites, prolapse, urinary signs, postpartum hemorrhage, and dyspareunia. Based on our results, the most common type of surgery among the patients in all age groups was total (radical) hysterectomy (95.2%). The rate of subtotal (partial) hysterectomy was 4.8%. Also, the cervical pathology report in terms of various age groups of patients revealed that 98.6% of the results of cervix pathology pertained to reactive lesions including chronic inflammatory lesions, chronic or acute inflammatory lesions, acute inflammatory lesions, and squamous metaplasia lesions. Moreover, the highest rate of cervical pathology report indicating malignancy pertained to the 60+ years age group while the least rate belonged to the 20-40 years age group. Also, regarding benign lesions including dysplasia, the highest rate was seen in the 51-60 years age group while the least rate was observed in the 20-40 years age group (Table 2). Additionally, regarding the cervical pathology report in terms of clinical signs, in the pathology report on reactive lesions, the most common clinical signs pertained to hemorrhage and abnormal secretions (73.2%) followed by abdominal pain and abdominal and pelvic mass (13.6%) and others (7.4%). The category of "Others" included patients without signs, patients with ascites, prolapse, urinary signs, postpartum hemorrhage (bleeding after delivery), and dyspareunia. Also, in the pathology report on malignant lesions, the most common clinical signs were bleeding and abnormal secretions (69.2%) followed by abdominal and pelvic pain and mass (23.1%).

The pathology report on endometrium in terms of age groups revealed that, on the whole, 89% of pathology results pertained to reactive lesions including physiologic

changes, atrophy, decidual, and %6.6 related to benign lesions including endometrium hyperplasia, and 4.4% belonged to malignant lesions. The highest rate of malignant lesions occurred in the 60+ years age group. Regarding the benign lesions, the highest rate belonged to the 60+ years age group followed by the 51-60 years age group. The Chi-square test showed that there was a significant difference between endometrium pathology reports in terms of age ($P < 0.0001$). This means that the pathology report on endometrium was different in various age groups (Table 3). Furthermore, the endometrium pathology report in terms of clinical signs (Table 3) revealed that the highest rate of clinical signs for benign lesions and malignant lesions pertained to bleeding and abnormal discharge. The Chi-square test demonstrated that there was a significant difference between the clinical signs and endometrium pathology report ($P < 0.001$).

Generally speaking, the myometrium pathology report in terms of age groups (Table 4) indicated that 71.2% of the results pertained to benign lesions including leiomyoma and endometriosis. Also, 3.9% pertained to malignant lesions and 24.9% belonged to normal pathology results. The highest rate of benign lesions belonged to the 41-50 years age group and the 60+ years age group had the highest rate of malignancy. The Chi-square test also revealed that there was a significant difference among the myometrium pathology reports in terms of age groups, i.e., the pathology report was different for various age groups ($P < 0.0001$). In the myometrium pathology report in terms of clinical signs (Table 4), the most common clinical signs in patients with pathology report of benign lesions were vaginal bleeding and abnormal secretions. Regarding malignant lesions, the most common clinical signs pertained to abdominal pain and abnormal secretions. The Chi-square test showed a significant difference between clinical signs and myometrium pathology reports ($P < 0.0001$).

In the pathology report on the right and left ovaries in terms of age groups, the highest rate of benign lesions belonged to the 41-50 years age group while the malignant lesions mostly occurred in the 51-60 years age group. The Chi-square test suggested a significant difference between ovaries pathology reports and age groups (< 0.0001), i.e., the ovaries pathology reports vary among various age groups (Table 5).

The pathology report on the right and left ovaries in terms of clinical signs (Table 6) indicated that for benign lesions most clinical signs related to vaginal bleeding and abnormal secretions. Also, for malignant lesions, most clinical signs pertained to abdominal pain and the Chi-square test showed a significant difference between clinical signs and ovaries pathology reports (< 0.0001).

Table 1: Frequency distribution of clinical signs in terms of age groups

Age (Years)	Abdominal pain	Abnormal uterus bleeding	Others	Total
20-40	32(15%)	156(72.9%)	26(21.1%)	214(100%)
41-50	71(10%)	621(88.1%)	13(1.8%)	705(100%)
51-60	43(14.1%)	245(80.1%)	18(5.9%)	306(100%)
Up 60	37(20.8%)	116(52.2%)	25(14%)	178(100%)
Total	183(13%)	1138(81.1%)	82(5.8%)	1403(100%)

P value 0.0001

Table 2: Frequency distribution of cervical pathology report in terms of age groups

Age (Years)	Reactive lesions	Benign lesions	Malignant lesions	Total
20-40	186(98.9%)	0	2(1.1%)	188(100%)
41-50	670(99.3%)	2(0.3%)	3(0.4%)	675(100%)
51-60	293(98%)	3(1%)	3(1%)	299(100%)
Up 60	171(96.6%)	1(0.6%)	5(2.8%)	177(100%)
Total	1320(98.6%)	6(0.4%)	13(1%)	1333(100%)

P value 0.071

Table 3: Frequency distribution of endometrium pathology report in terms of age groups

Sign/Age Pathology of Endometrium	Sign								Age									
	Abdominal pain		Abnormal uterus bleeding		Others		Total		20-40		41-50		51-60		Up 60		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Reactive lesion	158	86.3	1016	89.4	73	89	1247	89	196	91.6	654	92.9	261	85.3	136	76.8	1247	89
Benign lesion	6	3.3	84	7.4	3	3.7	93	6.6	11	5.1	37	5.3	28	9.2	17	9.6	93	6.6
Malignant lesion	19	10.4	36	3.2	6	7.3	61	4.4	7	3.3	13	1.8	17	5.6	24	13.6	61	4.4
Total	183	100	1136	100	82	100	1401	100	214	100	704	100	306	100	177	100	1401	100
P Value	0.0001								0.0001									

The category of "Others" included patients without signs, patients with ascites, prolapse, urinary signs, postpartum hemorrhage (bleeding after delivery), and dyspareunia.

Table 4: Frequency distribution of myometrium pathology report in terms of clinical signs and age groups

Sign/Age Pathology of myometrium	Sign								Age									
	Abdominal pain		Abnormal uterus bleeding		Others		Total		20-40		41-50		51-60		Up 60		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Benign Lesion	118	64.8	848	74.6	31	37.8	997	71.2	125	58.7	572	81.1	233	76.4	67	37.6	997	71.2
Malignant lesion	24	13.2	24	2.1	7	8.5	55	3.9	8	3.8	13	1.8	12	3.9	22	12.4	55	3.9
Normal	40	22	265	23.3	44	53.7	349	24.9	80	37.6	120	17	60	19.7	89	50	349	24.9
Total	182	100	1137	100	349	24.9	1401	100	213	100	705	100	305	100	178	100	1401	100
P Value	0.0001								0.0001									

The category of "Others" included patients without signs, ascites, prolapse, urinary signs, postpartum hemorrhage (bleeding after delivery), and dyspareunia.

Table 5: Frequency distribution of the right and left ovaries pathology reports in terms of age groups

Pathology of ovary Age	Right Ovary								Left Ovary							
	Benign Lesion		Malignant Lesion		Normal		Total		Benign Lesion		Malignant Lesion		Normal		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
20-40	53	74.6	7	9.9	11	15.5	71	100	58	78.4	8	10.8	8	10.8	74	100
41-50	404	76.8	14	2.7	108	20.5	526	100	430	77.5	17	3.1	108	19.5	555	100
51-60	191	65.9	18	6.2	81	27.9	290	100	192	66.4	19	6.6	78	27	289	100
Up 60	44	37.3	16	13.6	58	49.2	118	100	43	36.4	17	14.4	58	49.2	118	100
Total	692	68.9	55	5.5	258	25.7	1005	100	723	69.8	61	5.9	252	24.3	1036	100
P Value	0.0001								0.0001							

Table 6: Frequency distribution of the right and left ovaries pathology report in terms of clinical signs

Pathology of ovary Sign	Right Ovary								Left Ovary							
	Benign Lesion		Malignant Lesion		Normal		Total		Benign Lesion		Malignant Lesion		Normal		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Abdominal pain	80	52.6	31	20.4	41	27	152	100	84	52.5	33	20.6	43	26.9	160	100
Abnormal bleeding uterus	587	73.4	18	2.3	195	24.4	800	100	614	74.8	22	2.7	185	22.5	821	100
Others	25	47.2	6	11.3	22	41.5	53	100	25	45.5	6	10.9	24	43.6	55	100
Total	692	68.9	55	5.5	258	25.7	1005	100	723	69.8	61	5.9	252	24.3	1036	100
P Value	0.0001								0.0001							

DISCUSSION

This study investigated the etiology of hysterectomy on the basis of information obtained from complete records of hysterectomy patients during 10 years. It covered 1403 patient records and it was shown that the most common clinical signs pertained to bleeding and abnormal discharge followed by abdominal and pelvic pain as the next most common signs. In the meta-analysis study by Colin A. Walsh et al. (2009), more than 70% of causes of hysterectomy related to benign factors such as abnormal bleeding, fibroids, pelvic pain, and uterus prolapse⁶. The study by Stang et al. conducted in Germany reported the rate of hysterectomy to be 362.9 out of 100,000 women per year (of these, 295 cases underwent hysterectomy due to benign lesions and 44 cases due to primary malignant tumors)³. In this study, the highest rate of hysterectomy (50.2%) occurred in the 41-50 years age group. In the study by Escobar et al. carried out in the USA, the mean age of the hysterectomy patients was 45-50 years⁷. Moreover, in the study by Lykke et al. conducted in Denmark, the mean age of hysterectomy patients increased from 46 years during 1977-1981 to 50 years during 2006-2011⁸. Furthermore, in Moradan's study (2012), 45% of the hysterectomy patients were in the 40-55 years age group⁹. The cervical pathology report in this study showed that 98.6% of cervical pathology results pertained to reactive lesions, 0.4% related to benign lesions, and 1% belonged to malignant lesions. Moradan's study (2012) reported 6.5% rate of cervical dysplasia which is higher than our result⁹. Also, 89% of endometrium pathology report in this study were related to reactive lesions, 6.6% to benign lesions, and 4.4% to malignant lesions. Two studies by Debodinance in France reported the rate of endometrium hyperplasia to be 3.9% and 5% which are similar to our results in the present study¹⁰. This study showed that regarding myometrium, 71.2% of results pertained to benign lesions, 3.9% to malignant lesions, and 24.9% had normal pathology results. In Weaver et al.'s study, the most common causes of hysterectomy were leiomyomas¹¹. Also, the study by Jacobson et al. cited leiomyoma as the most common cause of hysterectomy in the 35-54 years age group¹². Additionally, in Moradan's study in Iran, leiomyoma was the most common cause of hysterectomy⁹. In this study, the most common causes of this surgery are leiomyoma and adenomyosis, a finding which is similar to the studies mentioned above. The 41-50 years age group had the highest rate of benign lesion in endometrial survey while the 60+ years age group showed the highest rate of malignant lesions. In the study by Lauren et al. conducted in America (2005), the mean age of the patients with leiomyoma was 40-49 years which is similar to our study¹³. Also, in the pathology report on the right and left ovaries in terms of clinical signs, for benign lesions the most common clinical signs pertained to vaginal bleeding and abnormal secretions. For malignant lesions, the most common clinical signs were related to abdominal pain. Moreover, in the pathology report on the right and left ovaries in terms of age groups, the highest rate of benign lesions occurred in the 41-50 years age group while the highest rate of malignant lesions occurred in the 51-60 years age group. Additionally, the study by Novetsky et al.

conducted in the USA, showed that 47% of all hysterectomy patients also underwent oophorectomy. Of these, most patients belonged to the 65+ years age group. This shows that oophorectomy was performed in an older age group compared to our study. Furthermore, in Novetsky's study, the most common causes of oophorectomy were related to a positive familial history of breast cancer, cancer of the ovaries, and ovarian cysts, while in this study the most common causes were bleeding, abnormal discharge, and abdominal pain¹⁴.

CONCLUSION

This study revealed that hysterectomy was most prevalent in this region in the 41-50 years age group and the pathology report mostly referred to reactive lesions and benign lesions. A comprehensive study of hysterectomy demands a greater study. Also, since hysterectomy negatively affects the personal and familial life of the patient, there is the need for a more extensive study of the life style and psychosocial condition of the patients after this surgery.

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REFERENCES

1. Baggish M S. Total and subtotal abdominal hysterectomy. *Best Pract Res ClinObstetGynaecol.* 2005; 19(3): 333–356.
2. Wu J M, Wechter M E, Geller E J, Nguyen T V, Visco A G. Hysterectomy Rates in the United States, 2003. *ObstetGynecol* 2007;110:1091–5.
3. Stang A, Merrill RM, Kuss O. Prevalence-corrected hysterectomy rates by age and indication in Germany 2005-2006. *Arch GynecolObstet* 2012;286(5):1193–200.
4. Schollmeyer T, Eleessawy M, Chastamouratidhs B, Alkatout I, Meinhold-Heerlein I, Mettler L, et al. Hysterectomy trends over a 9-year period in an endoscopic teaching center. *Int J Gynaecol Obstet.* 2014 Jul;1262004; 126 :45–49
5. Walsh C A, Walsh S R, Tang T Y, Slack M. Total abdominal hysterectomy versus total laparoscopic hysterectomy for benign disease: A meta-analysis. *Eur J ObstetGynecolReprod Biol.* 2009 May;144(1):3-7.
6. Whiteman MK, Hillis SD, Jamieson DJ, Morrow B, Podgornik MN, Brett KM, et al. Inpatient hysterectomy surveillance in the United States, 2000-2004. *Am J Obstet Gynecol* 2008;198(1):34e 1–7e.
7. Escobar DA, Botero AM, Cash MG, Reyes-Ortiz CA. Factors Associated with Hysterectomy among Older Women from Latin America and the Caribbean. *Women Health.* 2015 Oct 19:1-18.
8. Lykke R, Blaakær J, Ottesen B, Gimbel H. Hysterectomy in Denmark 1977–2011: changes in rate, indications, and hospitalization. *Eur J ObstetGynecolReprod Biol.* 2013 Dec;171(2):333-8
9. Moradan S. Evaluation the pathologic reports of 92 cases of hysterectomy and 80 cases of diagnostic curettage in patients with abnormal uterine bleeding. *Zahedan J Res MedSci (ZJRMS)* 2012; 13(suppl 1): 37.
10. Debodinance P. Hysterectomy for benign lesions in the north of France: epidemiology and postoperative events. *J GynecolObstetBiolReprod (Paris).* 2001 Apr;30(2):151-9.
11. Weaver F, Hynes D, Goldberg J M , Khuri S, Daley J, Henderson W. Hysterectomy in Veterans Affairs Medical Centers. *Obstet Gynecol.* 2001 Jun;97(6):880-4
12. Jacobson G F ,Shaber R E, Armstrong M A , Hung Y. Hysterectomy Rates for Benign Indications. *ObstetGynecol* 2006;107:1278–83
13. Wise L A, Palmer J R, Stewart E A, Rosenberg L. Age-Specific Incidence Rates for Self-Reported Uterine Leiomyomata in the Black Women's Health Study. *ObstetGynecol* 2005;105:563–8.
14. Novetsky A P, Boyd L R, Curtin J P. Trends in Bilateral Oophorectomy at the Time of Hysterectomy for Benign Disease. *ObstetGynecol* 2011;118:1280–

