DOI: 10.7860/JCDR/2020/45743.14279

Original Article

Health Management and Policy Section

Evaluation of Outcome Measures of Hysteroscopy Polypectomy in Women with Abnormal Uterine Bleeding

ZAHRA TAVOLI[1], MELIKA AGHA MOHAMMAD ALI KERMANI[2], SOMAYEH MORADPANAH[3], ALI MONTAZERI[4]

ABSTRACT

Introduction: The most common causes of Abnormal Uterine Bleeding (AUB) in women of reproductive age are uterine polyps. Operative hysteroscopy is the management of choice to remove polyp. However, the certainty of the treatment remains to be examined.

Aim: To investigate the outcome of hysteroscopy polypectomy in women with AUB.

Materials and Methods: This was a cross-sectional study on the samples of women with AUB who underwent a hysteroscopy polypectomy. Patients were assessed pre and postoperatively and were asked to respond to a number of outcome measures including duration of monthly cycle, menstruation cycle, heavy menstrual bleeding, the number of pads used in day and night and improvement of inter-menstrual bleeding, postcoital bleeding, and limited activity. Pre-and postsurgery data were compared using Wilcoxon and McNemar tests.

Results: In all, 83 patients were entered into the study. The mean age of participants was 41.8 (±8.37) years. The most common preoperative complaint was heavy menstrual bleeding (n=63, 76%) followed by intermenstrual bleeding (n=40, 48%). There were significant differences between preoperative and postoperative symptoms (p-values <0.05). Perceived complete recovery (n=54, 65%), partial recovery (n=13, 15.7%) and satisfaction (n=66, 79.5%) were high after hysteroscopy.

Conclusion: AUB due to polyp might be improved with hysteroscopy. Further investigations are needed to confirm the results and to study on co-existence of other causes of AUB after hysteroscopy polypectomy.

Keywords: Menstrual bleeding, Metrorrhagia, Polyp

INTRODUCTION

The AUB is defined as 'vaginal bleeding with abnormal quantity, prolonged duration, or bleeding between regular menstruation cycles'. AUB is the common cause of outpatient gynaecology clinic visits [1]. The aetiology of AUB varies with age and menopausal status. For instance, one of the most common causes of AUB in non-pregnant premenopausal women is uterine structural abnormalities [2], such as uterine polyp that is the most recognised structural abnormalities [2,3].

Uterine polyp (endometrial polyp) is a hyperplastic growth of endometrial glands and stroma. Usually, it is a benign lesion that in some instances could become malignant. The prevalence has been reported to range from 7.8% to 34.9% [4,5].

Evaluation of AUB begins with a clinical history and vaginal examination and patients may be subjected to more diagnostic procedures, if needed. Most useful diagnostic modalities for evaluating AUB is Trans-Vaginal Sonography (TVS), saline infusion sonography, colour doppler sonography and hysteroscopy [6-8].

Hysteroscopy, allows direct examination of the uterine cavity, taking a biopsy and removal of the polyps; but in many cases, requires general anaesthesia [9]. The diagnosis of intrauterine polyp and leiomyoma could be achieved by performing transvaginal sonography followed by hysteroscopy [4,10,11]. However, since some women may be asymptomatic to the treatment of women with uterine polyps depends on size and symptoms presented by women during clinical visits. The asymptomatic polyps are managed conservatively [12] and the symptomatic ones are recommended to be removed (hysteroscopy polypectomy), especially in women with AUB. As such, for polypectomy there are different approaches. Of these, the blind avulsion guided by diagnostic hysteroscopy is widely used for polypectomy. Other approaches for management of uterine polyps includes grasping forceps, micro-scissors, and resectoscope [13]. It is recommended that informed decision making should be made before management [14,15].

Effectiveness of hysteroscopy polypectomy depending on the selected approach, menstrual status and intensity of AUB symptoms, has been reported to vary from 60% to 85% [16,17]. However, recurrence of AUB depending on follow-up might range from 38% to 43% [18-20]. Thus, due of uncertainty in the management of AUB by hysteroscopy polypectomy, and different recurrence rate of AUB, this study aimed to investigate the patterns of AUB pre and posthysteroscopy among a sample of Iranian women.

MATERIALS AND METHODS

This was a cross-sectional study on a sample of women with confirmed diagnosis AUB and polyp attending to a teaching hospital affiliated to Tehran University of Medical Sciences during March 2018 to February 2019. The Institutional Review Board and Ethics Committee of Tehran University of Medical Science approved the study (Available at http://ethics.research.ac.ir/, The IEC number: 1397.852). All patients agreed to participate in the study and signed informed consent form.

Inclusion criteria: Patients aged between 20 to 55 years with complaint of AUB and uterine polyps confirmed by ultrasound.

Exclusion criteria: Patients with pregnancy, Body Mass Index (BMI) >30, hypothyroidism, hyperthyroidism, coagulopathy, vulvo-vaginitis and use of hormone replacement therapy.

Sample Size

The following formula was used to estimate sample size:

$n=Z^{2*}p\ (1-p)/d^2$

Where z=1.96 and p=45% (assuming that 45% of women with diagnosis of polyp would suffer from heavy bleeding [4]) and precision 10% (d=0.1), it was estimated that a study with 80% power at 5% significance level at least 80 women were required

for the study. However, in practice 83 women were included in the study.

Procedure

For all patients, who attended the clinic complaining AUB, TVS was performed between 5th and 6th day of menstrual cycle. All TVS evaluations were performed by a radiologist with a device equipped with 7.5 MHz transvaginal probe. Patients who had endometrial thickening over 5 mm were candidates for hysteroscopy performed by a gynaecologist.

Data Collection

Every woman's preoperative information including age, and some gynaecological data were extracted from case records. The postoperative information was collected using a simple checklist that included outcome measures. They were asked to report any type of AUB.

Outcome Measures

Patients were assessed for menstrual bleeding and any complaint of AUB at three months follow-up. They were asked to report for duration of monthly cycle, menstruation cycle and quantity of menstruation bleeding. For quantity of bleeding, patients reported the number of pads used during a day and night and reported if they had clot form bleeding during menstruation. In addition, improvement of postoperative hysteroscopy symptoms such as inter-menstrual bleeding, postcoital bleeding, restriction in activity and menstrual bleeding (clot) were considered as outcome measures. Finally, self-reported perceived recovery and satisfaction were recorded. The satisfaction was measured using a single 5-point Likert scale ranging from very satisfied to very dissatisfied.

STATISTICAL ANALYSIS

The data were analysed using IBM Statistical Package for the Social Sciences (SPSS) version 24. Patient's background information such as age, parity, and AUB characteristics were analysed and reported using descriptive statistics. Due to skewed distribution of data, nonparametric tests (Wilcoxon and McNemar) were used for comparing pre and postoperative symptoms. A p-value less than 0.05 were considered significant.

RESULTS

In all, 83 women aged 20 to 55-year-old were evaluated. The mean age of participants was 41.8 (SD=8.37) years. The mean follow-up time was three months. Of these, 10 women (12%) were nulliparous, 29 women (35%) had natural delivery and 44 women (53%) had history of cesarean section [Table/Fig-1].

Demographic and clinical characteristics	No. (%)
Age (Years, mean±SD)	41.8±8.37
Parity and delivery	
No child	10 (12)
Natural delivery	29 (35)
Cesarean section	44 (53)
Cesarean section	
0	39 (47)
1	24 (28.9)
2	14 (16.9)
>2	6 (7.2)

[Table/Fig-1]: Demographic and clinical characteristics of patients (n=83).
SD: Standard deviation

Symptoms

The most common preoperative complaint was heavy menstrual bleeding (n=63, 76%) followed by intermenstrual bleeding (n=40, 48%). Some of these had suffering from both complaints. The results were compared between pre and postoperative hysteroscopy included monthly cycle duration, menstruation cycle duration, heavy menstrual bleeding duration and number of pads used during day and night. The results have been shown in [Table/Fig-2]. Similarly, the assessment of having intermenstrual bleeding, postcoital bleeding, limited activity and heavy menstrual bleeding (clot), before and after hysteroscopy polypectomy showed significant difference. The findings have been shown in [Table/Fig-3].

Clinical symptoms	Preoperative Mean±SD	Postoperative Mean±SD	p-value*
Monthly cycle duration (days)	30.6±17.0	25.9±15.9	0.01
Menstruation cycle duration (days)	12.9±14.2	6.25±8.95	0.0001
Heavy menstrual bleeding duration (days)	6.02±4.29	2.42±2.31	0.0001
Number of pads used during day	6.25±4.29	3.04±2.99	<0.0001
Number of pads used during night	1.13±1.06	0.44±0.81	<0.0001

[Table/Fig-2]: Comparison of clinical symptoms in patients at preoperative and postoperative hysteroscopy (n=83).
*Derived from Wilcoxon test; SD: Standard deviation; p-value less than 0.05 considered significant

Preoperative	Postoperative		p-value*
Intermenstrual bleeding preoperative	Yes	No	p<0.0001
Yes	6	34	
No	3	40	
Postcoital bleeding preoperative			p=0.003
Yes	4	17	
No	3	59	
Limited activity preoperative			p<0.0001
Yes	14	24	
No	2	43	
Heavy bleeding with clot preoperative			p<0.0001
Yes	25	38	
No	1	19	

[Table/Fig-3]: Postoperative hysteroscopy symptoms in patients as compared to baseline data (n=83).
*Derived from McNemar test; p-value less than 0.05 considered significant

Satisfaction

Finally, postoperative perceived recovery and satisfaction after polypectomy indicated that most women reported that they felt better and were very satisfied or satisfied [Table/Fig-4].

Recovery and satisfaction	
Perceived recovery	**No. (%)**
Complete recovery	54 (65.0)
Partial recovery	13 (15.7)
No recovery	16 (19.3)
Satisfaction	
Very satisfied/Satisfied	66 (79.5)
Neither satisfied nor dissatisfied	8 (9.6)
Dissatisfied/Very dissatisfied.	9 (10.8)

[Table/Fig-4]: Recovery and satisfaction after hysteroscopy polypectomy (n=83).

DISCUSSION

Overall, this study showed that the most common complaint that women suffering from, was heavy menstrual bleeding; very similar to other studies [4,21]. However, a study reported that the most common symptom was intermenstrual bleeding in premenopausal women [22]. The findings also showed that a significant difference exists between pre and postoperative AUB that infact indicates that a relatively high percent of women were cured. It seems that hysteroscopy is significantly effective in treating polyps. Since the finding showed that 65% of women were completely cured and additionally in 15.7% of abnormal bleeding were partially cured. Studies from Iran also reported promising results [23,24]. For instance, a study showed that the hysteroscopy can be used

as a first-line conservative surgical therapy for the treatment of symptomatic intrauterine polyp as a safe and effective method [23]. Another investigation reported that hysteroscopy could be a diagnostic procedure. Abdollahi Fard S et al., studied three groups of patients with complaint of AUB, infertility and abortion and found that the diagnostic-therapeutically measures associated with the hysteroscopy were successful in 73.5% of the bleeding group [24].

Additionally, similar to this study, two systematic reviews reported that 75 to 100% improvement in symptoms after polypectomy depends on duration of follow-up period (between 2 to 52 months) [25,26]. A study reported that the monthly menstrual blood loss, measured by the Pictorial Blood Loss Assessment Chart (PBAC), was reduced after hysteroscopy, removal of the polyp [19]. Another study by Hamani Y et al., described that the amount of bleeding was significantly decreased by 70% but only 30% had regular bleeding. They reported the satisfaction rate was 80%, although it was lower in younger patients [27]. According to another similar study that investigated AUB 6 months after outpatient and inpatient polypectomy, 73% and 80% of women were successfully treated [28].

Another different study on 262 women with AUB and intrauterine pathology indicated that after removal of polyps, 136 (52%) women had recurrence of complaints, while 101 women (39%) underwent re-intervention. This study reported lower reduction in complaint after hysteroscopy polypectomy compared with this study that may be due to different follow-up duration [17]. Therefore, it is argued that there are several reasons for sub-optimal improvement of symptoms after hysteroscopy polypectomy. It believes that residual endometrial polyp and recurrence of polyp are examples of such reasons for recurrence of AUB. For instance, Luerti M et al., reported that location of polyps at the tubal cornea was associated with higher risk of residual endometrial polyps but polyp size or number was recorded no association with polyp residual [29]. Schaffrath SFG et al., reported that recurrence of AUB after removal of intrauterine pathology was 52% and re-intervention performed for 39% of women. [17]. However, another study reported that recurrence rate was 43% and the risk factors were more polyps and longer duration of follow-up [20,30]. One reason for difference in recurrence rate of AUB relates to hysteroscopy polypectomy technique that used differently where blind polypectomy under guidance of hysteroscopy, scissor, grasp, morcelator or shaver have been used [30]. Another reason is co-existence of other intra-cavitary pathologies like fibroid, hyperplasia, adenomyosis and malignancy that was not investigated in this study [31].

Finally, in this study 54 women (65%) reported complete recovery and 13 women (15.7%) reported partial recovery. Satisfaction of hysteroscopy polypectomy was 79.5%. Similar to this study Van Donglen H et al., also showed a high satisfaction rate on short term for patients who received hysteroscopy polypectomy [16].

Limitation(s)

Since the study did not follow-up patients further to indicate if the surgery was successful in long-term, the results should have interpreted with caution.

CONCLUSION(S)

AUB due to polyp might be improved with hysteroscopy. Further investigations are recommended to study on co-existence of other causes of AUB after hysteroscopy polypectomy.

REFERENCES

[1] Spencer C, Whitehead M. Endometrial assessment re-visited. BJOG: An International Journal of Obstetrics & Gynaecology. 1999;106(7):623-32.

[2] Munro MG, Critchley HO, Broder MS, Fraser IS, Disorders FWGoM. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. International Journal of Gynaecology & Obstetrics. 2011;113(1):03-13.

[3] Whitaker L, Critchley HO. Abnormal uterine bleeding. Best Practice & Research Clinical Obstetrics & Gynaecology. 2016;34:54-65.

[4] Salim S, Won H, Nesbitt-Hawes E, Campbell N, Abbott J. Diagnosis and management of endometrial polyps: A critical review of the literature. Journal of Minimally Invasive Gynaecology. 2011;18(5):569-81.

[5] Dreisler E, Stampe Sorensen S, Ibsen P, Lose G. Prevalence of endometrial polyps and abnormal uterine bleeding in a Danish population aged 20-74 years. Ultrasound in Obstetrics and Gynaecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynaecology. 2009;33(1):102-08.

[6] Timmerman D, Verguts J, Konstantinovic M, Moerman P, Van Schoubroeck D, Deprest J, et al. The pedicle artery sign based on sonography with color Doppler imaging can replace second-stage tests in women with abnormal vaginal bleeding. Ultrasound in Obstetrics and Gynaecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynaecology. 2003;22(2):166-71.

[7] Shukla P, Shukla P, Bhargava M, Agrawal S. A prospective study on role of hysteroscopy vs. transvaginal sonography in diagnosis of abnormal uterine bleeding. Journal of Evolution of Medical and Dental Sciences. 2014;3(27):7354-66.

[8] Niknejadi M, Haghighi H, Ahmadi F, Niknejad F, Chehrazi M, Vosough A, et al. Diagnostic accuracy of transvaginal sonography in the detection of uterine abnormalities in infertile women. Iranian Journal of Radiology. 2012;9(3):139.

[9] Vitner D, Filmer S, Goldstein I, Khatib N, Weiner Z. A comparison between ultrasonography and hysteroscopy in the diagnosis of uterine pathology. European Journal of Obstetrics & Gynaecology and Reproductive Biology. 2013;171(1):143-45.

[10] Machtinger R, Korach J, Padoa A, Fridman E, Zolti M, Segal J, et al. Transvaginal ultrasound and diagnostic hysteroscopy as a predictor of endometrial polyps: Risk factors for premalignancy and malignancy. International Journal of Gynaecologic Cancer. 2005;15(2):325-28.

[11] Bignardi T, Van den Bosch T, Condous G. Abnormal uterine and post-menopausal bleeding in the acute gynaecology unit. Best Practice & Research Clinical Obstetrics & Gynaecology. 2009;23(5):595-607.

[12] Jiang T, Yuan Q, Zhou Q, Zhu Y, Lv S, Cao Y, et al. Do endometrial lesions require removal? A retrospective study. BMC Womens Health. 2019;19(1):61.

[13] Sardo ADS, Calagna G, Guida M, Perino A, Nappi C. Hysteroscopy and treatment of uterine polyps. Best Practice & Research Clinical Obstetrics & Gynaecology. 2015;29(7):908-19.

[14] Sheng KK, Lyons SD. To treat or not to treat? An evidence-based practice guide for the management of endometrial polyps. Climacteric. 2020;23(4):336-42.

[15] Nijkang NP, Anderson L, Markham R, Manconi F. Endometrial polyps: Pathogenesis, sequelae and treatment. SAGE Open Medicine. 2019;7:2050312119848247.

[16] van Dongen H, Janssen CA, Smeets MJ, Emanuel MH, Jansen FW. The clinical relevance of hysteroscopic polypectomy in premenopausal women with abnormal uterine bleeding. Bjog. 2009;116(10):1387-90.

[17] Schaffrath SFG, Dreessen JRJ, Bongers MY, van Kuijk SMJ, Mol BWJ, Langenveld J. Recurrence and prediction of abnormal uterine bleeding and re-intervention after initial hysteroscopic treatment: A retrospective cohort study. Archives of Gynaecology and Obstetrics. 2019;300(6):1651-57.

[18] Maheux-Lacroix S, Mennen J, Arnold A, Budden A, Nesbitt-Hawes E, Won H, et al. Resolution of Abnormal Uterine Bleeding After Hysteroscopic Morcellation of Endometrial Polyps. Journal of Gynaecologic Surgery. 2019;35(5):304-07.

[19] Paradisi R, Rossi S, Scifo MC, Dall'O F, Battaglia C, Venturoli S. Recurrence of endometrial polyps. Gynaecol Obstet Invest. 2014;78:26-32. pmid:24862037.

[20] Yang JH, Chen CD, Chen SU, Yang YS, Chen MJ. Factors influencing the recurrence potential of benign endometrial polyps after hysteroscopic polypectomy. PloS one. 2015;10(12):e0144857.

[21] Henriquez DDCA, van Dongen H, Wolterbeek R, Jansen FW. Polypectomy in premenopausal women with abnormal uterine bleeding: Effectiveness of hysteroscopic removal. Journal of Minimally Invasive Gynaecology. 2007;14(1):59-63.

[22] Hassa H, Tekin B, Senses T, Kaya M, Karatas A. Are the site, diameter, and number of endometrial polyps related with symptomatology? American Journal of Obstetrics and Gynaecology. 2006;194(3):718-21.

[23] Sayyah Melli M, Nazari L. Hysteroscopic evaluation and treatment of uterine diseases in 301 patients. Medical Journal of Tabriz University of Medical Sciences. 2006;4(4):188-194.

[24] Abdollahi Fard S, Mostafa Gharabaghi P, Montazeri F, Mashrabi O. Hysteroscopy as a minimally invasive surgery, a good substitute for invasive gynaecological procedures. International Journal of Reproductive BioMedicine. 2012;10(4):377-80.

[25] Nathani F, Clark TJ. Uterine polypectomy in the management of abnormal uterine bleeding: A systematic review. J Minim Invasive Gynaecol. 2006;13(4):260-68.

[26] Lieng M, Istre O, Qvigstad E. Treatment of endometrial polyps: A systematic review. Acta Obstet Gynaecol Scand. 2010;89(8):992-1002.

[27] Hamani Y, Eldar I, Sela HY, Voss E, Haimov-Kochman R. The clinical significance of small endometrial polyps. Eur J Obstet Gynaecol Reprod Biol. 2013;170(2):497-500.

[28] Clark TJ, Stevenson H. Endometrial Polyps and Abnormal Uterine Bleeding (AUB-P): What is the relationship, how are they diagnosed and how are they treated? Best Practice & Research Clinical Obstetrics & Gynaecology. 2017;40:89-104.

[29] Luerti M, Vitagliano A, Di Spiezio Sardo A, Angioni S, Garuti G, De Angelis C, et al. Effectiveness of hysteroscopic techniques for endometrial polyp removal: The Italian multicenter trial. Journal of Minimally Invasive Gynaecology. 2019;26(6):1169-76.

[30] Kanthi JM, Remadevi C, Sumathy S, Sharma D, Sreedhar S, Jose A. Clinical study of endometrial polyp and role of diagnostic hysteroscopy and blind avulsion of polyp. Journal of Clinical and Diagnostic Research: JCDR. 2016;10(6):QC01-04.

[31] Van den Bosch T, Ameye L, Van Schoubroeck D, Bourne T, Timmerman D. Intracavitary uterine pathology in women with abnormal uterine bleeding: A prospective study of 1220 women. Facts, Views & Vision in ObGyn. 2015;7(1):17.

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Obstetrics and Gynaecology, Ziaeian Hospital, Tehran University of Medical Sciences, Tehran, Iran.
2. General Physician, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.
3. Assistant Professor, Department of Obstetrics and Gynaecology, Ziaeian Hospital, Tehran University of Medical Sciences, Tehran, Iran.
4. Professor, Population Health Research Group, Health Metrics Research Centre, Iranian Institute for Health Sciences Research, ACECR, Tehran, Iran.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Somayeh Moradpanah,
Ziaeian Hospital, Tehran, Iran.
E-mail: zmoradpanah@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Jul 04, 2020
- Manual Googling: Sep 26, 2020
- iThenticate Software: Oct 29, 2020 (5%)

ETYMOLOGY: Author Origin

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Jul 03, 2020**
Date of Peer Review: **Aug 04, 2020**
Date of Acceptance: **Oct 01, 2020**
Date of Publishing: **Nov 01, 2020**