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## Hysteroscopy “As one stop approach” in the management of intrauterine pathology. Focus on patient’s satisfaction

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### ABSTRACT

**Objective.** This study has been done to assess the effectiveness of hysteroscopy to the one stop approach in the management of intrauterine pathology and to review the patient’s satisfaction with this approach.

**Materials and methods.** This is a retrospective analysis conducted at a tertiary care hospital from March 2018 to March 2020. All the women who were admitted for hysteroscopy for one stop, diagnostic and therapeutic approach, were included in the study. All hysteroscopy were performed by the same surgeon. Data pertaining to clinical findings, diagnosis, hysteroscopic findings, complications, and histopathology report were obtained from patient’s record sheets. We conducted a telephonic survey with simple questionnaire to assess the patient’s satisfaction with this approach.

**Results.** Among the 150 women analyzed, AUB was the indication of hysteroscopy in 36% and infertility in 48%. 80% of women had abnormal hysteroscopy. Intrauterine adhesion was the most common lesion detected in infertile women whereas endometrial polyp was seen more frequently in AUB. Hysteroscopy was found to be 100% accurate in diagnosing endometrial cancer in PMB. 101 procedures were performed in the same sitting. 89 women responded to our telephonic survey. 88.7% women experienced significant improvement in the symptoms, 94% women accepted it as cost and time effective procedure and 88% women said that they would recommend this procedure to a friend.

**Conclusions.** Hysteroscopy has been indispensable in evaluating intrauterine pathology. The one stop approach which include diagnosis and treatment at the same sitting is minimally invasive, low risk, well tolerated, cost and time effective procedure and is being highly preferred by the patients.

### SOMMARIO

**Obiettivo.** Questo studio è stato condotto per valutare l’efficacia dell’isteroscopia rispetto all’approccio one-stop nella gestione della patologia intrauterina e per esaminare la soddisfazione della paziente.

**Materiali e metodi.** Si tratta di un’analisi retrospettiva condotta presso un ospedale di cure terziarie da marzo 2018 a marzo 2020. Sono state incluse nello studio tutte le donne ricoverate per isteroscopia per approccio diagnostico e terapeutico one-stop. Tutte le isteroscopie sono state eseguite dallo stesso chirurgo. I dati relativi ai reperti clinici, alle diagnosi, ai reperti isteroscopici, alle complicanze e al referto istopatologico sono stati ottenuti dai fogli di registrazione delle pazienti. Abbiamo condotto un sondaggio telefonico con un semplice questionario per valutare la soddisfazione delle pazienti con questo approccio.

**Risultati.** Tra le 150 donne analizzate, AUB è stata l’indicazione di isteroscopia nel 36% e infertilità nel 48%. L’80% delle donne ha avuto un’isteroscopia anormale. L’adesione intrauterina è stata la lesione più comune rilevata nelle donne infertili, mentre il polipo endometriale è stato osservato più frequentemente nell’AUB. L’isteroscopia è risultata accurata al 100% nella diagnosi del cancro dell’endometrio nella PMB. 101 procedure sono state eseguite nella stessa seduta. 89 donne hanno risposto al nostro sondaggio telefonico. L’88,7% delle donne ha sperimentato un miglioramento significativo dei sintomi, il 94% delle donne l’ha definita come una procedura efficace in termini di costi e tempi e l’88% delle donne ha affermato che consiglierebbe questa procedura ad un’amica.

**Conclusioni.** L’isteroscopia è stata indispensabile nella valutazione della patologia intrauterina. L’approccio one-stop che include diagnosi e trattamento nella stessa seduta è una procedura minimamente invasiva, a basso rischio, ben tollerata, efficace in termini di costi e tempi ed è altamente preferita dalle pazienti.

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### **Key words**

*Intrauterine pathology; hysteroscopy; abnormal uterine bleeding; infertility.*

### **Abbreviations**

AUB: Abnormal Uterine Bleeding

IUA: Intrauterine Adhesion

USG: Ultrasonography

HSG : Hysterosalpingography

OT: Operation Theatre

## **INTRODUCTION**

Intrauterine pathology can present with spectrum of symptoms ranging from asymptomatic to abnormal uterine bleeding and infertility. Though the uterine factor can be found only in 2-3% of infertile women, intrauterine pathology is much more prevalent in this setting (40-50%) (1). Observational studies have suggested increased pregnancy rate after Hysteroscopic removal of these lesion (1). Abnormal uterine bleeding (AUB) is a common gynecological problem and impacts women's life at every stage from adolescence, through reproductive periods to menopause and postmenopausal time period. Role of hysteroscopy is indispensable in the work-up of AUB and infertility. In addition it provides opportunity to treat certain pathology at the same sitting, thereby reduces multiple visits and increases patient compliance. Transvaginal sonography being non-invasive has been utilized as first modality in the evaluation of infertility and AUB though it has poor sensitivity in detecting intrauterine pathology like endometrial polyp, submucosal fibroid, intrauterine adhesion and septum (2). Though the WHO recommends hysteroscopy only when clinical or complementary (USG, HSG) exam is suggestive of intrauterine pathology, but many specialists feel that hysteroscopy as least invasive and more accurate in diagnosing intrauterine pathology (2, 3). Hysteroscopy is considered as gold standard in assessment of endometrial pathology as it eliminates the limitation of blind dilatation and curettage by allowing direct visualization of endometrial cavity and performance of targeted biopsy from suspected area. Miniaturization of hysteroscope has further reduced the need of anesthesia and made it more acceptable by the patients. In addition, vaginoscopic

approach of performing hysteroscopy allows detection of vaginal pathology besides reducing the discomfort due to cervical holding. Advent of newer techniques and miniature hysteroscope has opened up the new horizon for diagnosing and treating the intrauterine pathology at the same sitting. This study has been done with the objective to assess the effectiveness and patient's satisfaction of hysteroscopy to the one stop approach in the management of intrauterine pathology. Secondly to discuss the prevalence of various endometrial pathologies in AUB and infertility.

## **MATERIALS AND METHODS**

After obtaining clearance from institute ethical committee, this retrospective cohort study was conducted from March 2018 to March 2020 in the department of obstetrics and gynecology at our institute. All patients who underwent hysteroscopy for evaluation of abnormal uterine bleeding, infertility or other uterine pathology during specified period were included in the study. Data including demographic details, pre-operative diagnosis, anesthesia used, operative procedures and complications were obtained from clinical record sheet of the patients. All patients after full clinical evaluation and pre-anesthetic check-up, underwent hysteroscopy. The procedure to pursue, choice of instrument and need of anesthesia was decided on the preclinical information. When the sonographic findings were suggestive of minor pathology like single polyp, endometrial thickness less than 12 mm or retained intrauterine CuT, hysteroscopy was performed without use of anesthesia. In case of major pathology type of anesthesia (conscious sedation, short

general or spinal) was decided according to expected duration of procedure and clinical characteristics of the patients inside the OT. All hysteroscopy were performed following vaginoscopic approach by single surgeon SJ using 2.9 mm hysteroscope. Uterine distension was provided with normal saline by using the continuous flow and pressure-controlled pump system. Hysteroscopy was performed with standard sequence, inspection of cervix, endocervical canal, uterine cavity, tubal ostia and endometrium. Procedures like septal resection, adhesiolysis, foreign body removal, polypectomy and myoma resections were performed using appropriate techniques at the same sitting when required. Endometrial biopsy had been taken in suspected cases. Operative findings were documented in the record sheets. A telephonic survey had been conducted by S.K pertaining to patient's satisfaction in terms of periprocedural experience and improvement in symptoms using simple questionnaire. We tried to contact all patients who underwent hysteroscopic procedure during the specified time period. Statistical analysis was done using Fischer exact t-test and P value < 0.05 was considered as statistically significant. Statistical analysis was done using online facility available at website [www.medcalc.org](http://www.medcalc.org).

## RESULTS

A total of 150 patients with various complaints underwent hysteroscopy over a span of two years. Out of 150 patients, ninety eight did not require

anesthesia however 52 did. Mean age of presentation was 34.3 years (range 17-65 years). Abnormal uterine bleeding was the indication for hysteroscopy in 36% (54/150) and infertility in 48% (72/150). Data regarding age and indication of hysteroscopy have been summarized in the **table I**.

Hysteroscopy was abnormal in 80% (120/150). **Table II** compares the prevalence of normal and abnormal hysteroscopy in various diagnoses among the studied population. 83.4% (45/54) of women with AUB had abnormal pathology compared to 75% (54/72) in infertile women. Among 6 women with PMB, 2 were diagnosed with thin endometrium, one with endometrial carcinoma, 2 with endometrial polyp and 1 with endocervical polyp. Biopsies in these women confirmed the Hysteroscopic diagnosis. Two patients who presented with post tuberculous secondary amenorrhea, one had severe intrauterine adhesion and another one had cervical stenosis.

Various intrauterine pathology detected on hysteroscopy are enlisted in **table III**. Endometrial polyp was the commonest abnormality detected accounting for 22% of the pathology followed by intrauterine adhesion in 20%. **Table IV** is showing sub-group analysis among two major entity AUB and infertility. Incidence of endocervical and endometrial polyp was higher in AUB group (42.3% vs 26.3% at p-value 0.123) but the difference was not statistically significant.

Total 101 procedures were performed (**table IV**). Sixty five patients did not require anesthesia whereas 36 patients needed anesthesia. We removed all

**Table I.** Age distribution and indication of hysteroscopy in the studied population.

Age group (years)	Frequency (n = 150)	Percentage
15-20	4	2.6%
21-30	64	42.6%
31-40	52	34.6%
41-50	22	14.6%
50-60	2	1.3%
> 60	6	4%
Indication of Hysteroscopy		
AUB	54	36%
Primary infertility	50	33.3%
Secondary infertility	22	14.6%
Post-menopausal bleeding	6	4%
Missing thread	4	2.6%
AUB with primary infertility	8	5.3%
AUB with secondary infertility	4	2.6%
Secondary amenorrhea	2	1.3%

AUB: Abnormal Uterine Bleeding.

**Table II.** Incidence of abnormal Hysteroscopy in various pathology.

Diagnosis	Normal findings	Abnormal findings
AUB (n = 54)	9 (16.6%)	45 (83.4%)
PMB (n = 6)	0	6 (100%)
Primary infertility (n = 50)	13 (26%)	37 (74%)
Secondary infertility (22)	5 (32%)	17(68%)
AUB with primary infertility (n = 8)	2 (22.7%)	6 (77.3%)
AUB with secondary infertility (n = 4)	1 (25%)	3 (75%)
Secondary amenorrhea (n = 2)	0	2 (100%)

AUB: Abnormal Uterine Bleeding; PMB: Postmenopausal Bleeding.

**Table III.** Hysteroscopic findings.

Hysteroscopic finding	Frequency (n = 150)	Percentage
Endocervical polyp	14	9.3%
Endometrial Polyp	33	22%
IUA mild	30	20%
IUA moderate	3	2%
IUA severe	2	1.3%
Bony chip	6	4%
CuT	4	2.6%
Submucosal myoma	12	8%
Hyperplastic endometrium	6	4%
Endocervical carcinoma	1	0.6%
Endometrial carcinoma	2	2.6%
Septum	4	2.6%
Unicornuate uterus	3	2%
Normal	30	20%

IUA: Intrauterine Adhesion; CuT: Copper T.

diagnosed polyp ranging from 0.5 to 3.5 cm. Out of 35 diagnosed intrauterine adhesion, adhesiolysis could be completed in 33 patients. Among them, 26 patients did not require anesthesia but 9 did. We could perform only 7 myomectomies from the 12 diagnosed myoma as 3 patients denied myomectomy and 2 patients had myoma > 3 cm size. Mean operating time for polypectomy and myomectomy were 13.4 minutes and 28.8 minutes respectively. Mean pain score (VAS) was 2.9 in the group who did not require anesthesia. We tried to contact all but only 89 patients responded to our telephonic survey (table V). Among this 38 had been treated for AUB and 51 for infertility. In the AUB group, 86.8% experienced significant improvement in the symptoms. In two patients heavy bleeding persisted even after treatment and they were counselled for LNG-IUS insertion. Three patients had to undergo hysterectomy. 92.1% said that they would recommend this procedure to friends. In infertility group, symptomatic improvement occurred in 90.1% but only 27.8% conceived after treatment but 84.3% said they would recommend this procedure to friends.

## DISCUSSION

We found abnormal hysteroscopy in 74% of primary infertility and 68% of secondary infertility cases. This observation is in accordance with Sahu *et al.*

**Table IV.** Hysteroscopic findings and procedures performed among AUB and infertility patients.

Hysteroscopic findings	Menstrual irregularity (n = 54)	Infertility (n = 72)	P-value
Endocervical polyp	7 (12.9%)	4 (5.5%)	0.14
Endometrial polyp	16 (29.6%)	12 (16.6%)	0.123
IUA	5 (9.2%)	23 (32%)	0.002
Bony chip	2	3	0.89
Submucosal myoma	9 (16.6%)	2 (2.7%)	0.008
Hyperplastic endometrium	4 (7.4%)	2 (2.7%)	0.4
Endocervical carcinoma	1 (1.8%)	0	0.41
Endometrial carcinoma	1 (1.8%)	0	0.18
Septum	0	4 (5.5%)	0.031
Unicornuate uterus	0	4 (5.5%)	0.031
Normal	9 (16.6%)	18 (25%)	0.282
Procedure performed			
Polypectomy	23	16	
Adhesiolysis	4	21	
Myomectomy	4	2	
Septal resection	0	4	
Bony chip removal	2	3	

IUA: Intrauterine device.

**Table V.** Likert scale analysis of patient's satisfaction.

Questionnaire	Very good	Good	Bad	Worst
How was your perioperative experience in terms of pre-operative preparation, post-operative pain and timing of discharge	61.2%	33.2%	5.6%	-
Grade your ease with one stop approach i.e. undergoing diagnosis and treatment at same sitting	58%	36.6%	4.4%	1%
Grade the cost effectivity of this procedure	57.8%	30%	11.2%	1%
How will you grade your symptom improvements following treatment	69%	19.7%	9%	2.3%
	<b>Yes</b>	<b>No</b>		
Did you conceive following the treatment	14 27.4%	37 72.6%		
Would you recommend this procedure to your friend	78 87.6%	11 12.4%		

(4) who reported comparable incidence of 33% and 39% in primary and secondary infertility respectively. Previous studies have reported wide variation in the incidence range of 7.2-64%. This variation may be attributed to demographic difference, inter-observer variation, preoperative tool used for patient selection and type of infertility (5, 6).

Intrauterine adhesion usually develops following trauma or infection causing damage to the endometrial basalis which heals by fibrosis resulting in obliteration of uterine cavity. The common risk factor in Indian population are genital infection and uterine surgeries. IUA was detected in 29% (35/120) of the studied women. Adhesiolysis was performed in all the patients with sharp scissors except in two patients. In one patient with severe adhesion, dissection couldn't be completed, in another patient uterine perforation had occurred during adhesiolysis, (this patient had history of uterine perforation during previous dilatation and curettage which she had disclosed after the procedure). Among them, 74% women did not require anesthesia. Most of them had presented with complaints of hypo menorrhea and dysmenorrhea. Menstrual pattern has improved following adhesiolysis in > 90% of women. Though assessing the effect of adhesiolysis on fertility outcome is beyond the scope of this study, few studies have evaluated the reproductive outcome after adhesiolysis and have reported overall pregnancy rate ranging from 25 and 76% (7).

Polyps were diagnosed in 21% of infertility patients in present study. The reported prevalence in the literature is as high as 32% in infertile women (8). Causal relationship of polyps and infertility is not yet well established but the putative mechanism may be mechanical interference with sperm transportation and implantation or due to defec-

tive implantation as glands and stroma of polyp is unresponsive to progesterone. Thus removal of endometrial polyp is justified to improve pregnancy rate. A systemic review analysis on outcome of hysteroscopy in treating infertility associated with uterine pathology suggests that 63% of women (95% CI 50% to 76%) will achieve a clinical pregnancy after the hysteroscopic removal of the endometrial polyps (1). Polyp was detected in 40% of AUB patients in this study. Reported incidence of this disease in AUB is around 50% (9). In addition to abnormal uterine bleeding, atypical hyperplasia and endometrial cancer may arise in up to 6.7% and 2.2% of endometrial polyps, respectively (10). Hysteroscopic removal is the recommended optimum treatment for endometrial polyp, small and pedunculated polyp can easily be removed using scissors, electrosurgical loop may be the best option to excise sessile ones (11). Surgical resection of polyp results in significant reduction in bleeding as well as avail tissue for histological examination to exclude malignancy. A study by Garuti *et al.* has reported that polyps could be resected in 81% of the cases but in present series we could resect all detected polyps (47/120) (12). All were confirmed as benign on histology. The mean operating time for polypectomy was 14.5 minutes in this study. 87% women had regression of symptoms on follow-up which demonstrated high efficacy of hysteroscopy in treating intrauterine lesion thereby increasing patient's satisfaction.

Submucosal fibroid was seen more frequently in abnormal uterine bleeding compared to infertility (16.6% vs 2.7%). Submucosal fibroid can cause infertility by interfering with egg and sperm transportation and their implantation, thus warrants its removal. Causal relationship of submucosal fibroid with heavy bleeding is well established. Removal

of the cause of AUB can substantially reduce the need of hysterectomy. We performed 4 myomectomy in AUB and 2 in infertility group. 3 patients in AUB group chose hysterectomy over myomectomy. The mean operating time for myomectomy was 24.8 minutes which is comparable to the mean operating time reported in the literature (13). We could perform myomectomy in 50% of diagnosed cases which suggests one stop approach a feasible option for its diagnosis and treatment.

Septate uterus was noted in 5.5% (4/72) and unicornuate uterus in 4% (3/72) in this series. Concurrent laparoscopy can increase the detection of other uterine anomalies. Among the septate uterus, 2 were complete and two were incomplete. Resection of septum was done in all of them, three patients required anesthesia whereas one did not. Reproductive outcome had been excellent following surgery as 3 patients conceived within one year, two delivered at term but one ended in first trimester abortion. This demonstrated high efficacy of Hysteroscopic septal resection and improved patient's satisfaction with the one stop approach. Wang *et al.* have reported 71.43% of pregnancy rate after septal resection in 12 months of follow-up period (14).

Besides, major pathologies, retained bony chip and left out CuT had been detected in 8.6% of studied population with comparable incidence among infertility and AUB cases. Foreign body in the uterine cavity has been associated with reduced infertility as well as abnormal uterine bleeding. Its removal resulted in spontaneous correction of symptomatology. Besides being an easily treatable cause it relieves the patient's anxiety as well.

Carcinoma was detected in 3.2%, it included both endometrial and endocervical carcinoma. One woman among them presented with postmenopausal bleeding and two as heavy menstrual bleeding. All of them were > 60 years old. Hysteroscopic diagnosis was confirmed on histopathology and were referred to oncological unit for further management. In line with our result, the study by Antunes had reported 1.2% incidence of endometrial carcinoma with 100% accuracy in diagnosing carcinoma and its precursor with combined approach of hysteroscopy and biopsy (15). Endometrial hyperplasia was noted in 4%, which returned as simple hyperplasia on histology and were managed medically. As thorough investigation is mandatory to rule out malignancy, one stop approach is best suited in this age group.

Despite all its advantage, hysteroscopy is not widely used in the developing countries. Main hindrances are use of anesthesia, pain and cost of the procedure. Pain during hysteroscopy is mainly caused by tenaculum application and cervical dilatation. Small diameter scope and employment of vaginoscopic entrance through the cervix reduces the pain and requirement of anesthesia thereby increasing the acceptance of the technique. In this series out of hundred one patients who underwent Hysteroscopic surgery, sixty five did not require anesthesia. The rates of severe pain have been reported to range from 2 to 14% in parallel with the diameter of the hysteroscope (16). The mean pain score (VAS) in our series was 2.9. We did not apply vaginal speculum or tenaculum to hold cervix as these tool might cause anxiety and pain. Employment of vaginoscopic approach, avoiding holding cervix, using small diameter scope reduced the need of anesthesia thereby reducing hospital stay but simultaneously allowing performance of almost all planned procedures resulted in high patient's satisfaction with this approach in this series. We did telephonic survey regarding patient satisfaction with this approach, 89 women responded to the questionnaire. 89% women experienced symptomatic improvement and 87% women found it cost effective. 11 women had not had good experience and reasons stated by them were- uterine perforation during adhesiolysis, incomplete adhesiolysis and persistence of amenorrhea, requirement of additional treatment and inability to conceive following treatment. However, significant number of women (over 90%) had agreed that it is safe, effective and worthwhile procedure. Filiz *et al.* reported that 89.3% patients found office hysteroscopy comfortable which is comparable to our study (17).

We could diagnose pathology in 120 cases and performed 101 procedures at the same sitting that indicate that 86% pathology had been treated, making this 'one stop approach' an effective option in management of intrauterine pathology. The reported complication rate during hysteroscopy in literature is 1-3% (18), but in our series it was minimal with only one case of uterine perforation during adhesiolysis. These data demonstrate that hysteroscopy is extremely safe in the hand of experienced surgeon. Advent of high definition mini hysteroscope has facilitated performance of these procedures in the office setting obviating the need of anesthesia and without compromising optical

performance. But the limiting factor for the newer techniques is the cost especially in developing countries. This study clearly demonstrate that hysteroscopy offers high diagnostic accuracy, allows concurrent accomplishment of surgical treatment of visualized pathology, avoids complication, allows quicker recovery time and is well preferred by the women.

Despite certain limitations in this studies due to inherent retrospective nature and small sample size, our findings strongly supports the utilizations of hysteroscopy in management of intrauterine pathology.

## CONCLUSIONS

Hysteroscopy in the present era has acquired first place in the management of endometrial pathology as it guarantees accurate diagnosis of intrauterine pathology. In addition to diagnosis, it also allows skilled gynecologist to perform various therapeutic procedures simultaneously. The data from this se-

ries clearly demonstrate that hysteroscopy as 'one stop approach' that is diagnose and treat the pathology simultaneously, is simple, safe, effective and well accepted by most women in the management of intrauterine pathology. It will also reduce the hysterectomy burden on the hospitals. So the author recommends that hysteroscopy should be included in the initial work-up of infertility and AUB.

## ETHICS

Ethical approval and consent to participate- Study had been approved by institute ethical committee (AIIMS/Pat/IEC/2020/514). Verbal consent had been obtained from the study participants. Ethical committee approved this procedure.

## CONFLICT OF INTERESTS

The authors declare that they have no conflict of interests.

## REFERENCES

1. Bosteels J, Kasius J, Weyers S, Broekmans FJ, Mol BW, D'Hooghe TM. Hysteroscopy for treating subfertility associated with suspected major uterine cavity abnormalities. *Cochrane Database Syst Rev* 2018;12(12):CD009461.
2. Vitner D, Filmer S, Goldstein I, Khatib N and Weiner Z. A comparison between ultrasonography and hysteroscopy in the diagnosis of uterine pathology. *Eur J Obstet Gynecol Reprod Biol* 2013;171:143-5.
3. Prevedourakis C, Loutradis D, Kalianidis C, Makris N, Aravantinos D. Hysterosalpingography and hysteroscopy in female infertility. *Hum Repr* 1994;9(12):2353-5.
4. Sahu L, Tempe A, Gupta S. Hysteroscopic evaluation in infertile patients: a prospective study. *Int J Reprod Contracept Obstet Gynecol* 2012;1(1):37-41.
5. Koskas M, Mergui JL, Yazbeck C, Uzan S, Nizard J. Office hysteroscopy for infertility: a series of 557 consecutive cases. *Obstet Gynecol Int* 2010;168096.
6. Stefanescu A, Marinescu B. Diagnostic hysteroscopy – a retrospective study of 1545 cases. *Mae-dica (Buchar)* 2012;7(4):309-14.
7. Hanstede MMF, van der Meij E, Goedemans L, Emanuel MH. Results of centralized Asherman surgery, 2003–2013. *Fertil Steril* 2015;104(6):1561-8.
8. Pereira N, Petrini AC, Lekovich JP, Elias RT, Spandorfer SD. Surgical Management of Endometrial Polyps in Infertile Women: A Comprehensive Review. *Surg Res Pract* 2015:914390.
9. 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 Pract Res Clin Obstet Gynaecol* 2017;40:89-104.
10. Ben-Arie A, Goldchmit C, Laviv Y, *et al.* The malignant potential of endometrial polyps. *Eur J Obstet Gynecol Reprod Biol* 2004;115(2):206-10.
11. Lieng M, Istre O, Qvigstad E. Treatment of endometrial polyps: a systematic review. *Acta Obstet Gynecol Scand* 2010;89(8):992-1002.
12. Garuti G, Cellani F, Colonnelli M, Grossi F, Luerti M. Outpatient hysteroscopic polypectomy in 237 patients: feasibility of a one-stop “see-and-treat” procedure. *J Am Assoc Gynecol Laparosc* 2004;11(4):500-4.
13. Litta P, Cosmi E, Saccardi C, Esposito C, Rui R, Ambrosini G. Outpatient operative polypectomy using a 5 mm-hysteroscope without anaesthesia and/or analgesia: Advantages and limits. *Eur J Obstet Gynecol Reprod Biol* 2008;139(2):210-4.
14. Wang X, Hou H, Yu Q. Fertility and pregnancy outcomes following hysteroscopic metroplasty of different sized uterine septa: A retrospective cohort study protocol. *Medicine (Baltimore)* 2019;98(30):e16623.
15. Antunes, A.A.R. The efficacy of hysteroscopy in diagnosis and treatment of endometrial pathology. *Gynecol Surg* 2012;9:47-52.
16. De Angelis C, Santoro G, Re ME, Nofroni I. Office hysteroscopy and compliance: mini-hysteroscopy versus traditional hysteroscopy in a randomized trial. *Hum Reprod.* 2003;18:2441-5.
17. Filiz T, Doğer E, Corakçı A, Ozeren S, Çalışkan E. The efficacy, cost and patient satisfaction of classic versus office hysteroscopy in cases with suspected intrauterine space occupying lesions with 3-dimension ultrasound and abnormal uterine bleeding. *J Turk Ger Gynecol Assoc* 2009;10(4):189-93.
18. Aas-Eng MK, Langebrekke A, Hudelist G. Complications in operative hysteroscopy – is prevention possible? *Acta Obstet Gynecol Scand* 2017;96:1399-403.