International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Chaudhari KR et al. Int J Reprod Contracept Obstet Gynecol. 2014 Sep;3(3):666-670
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: 10.5455/2320-1770.ijrcog20140958

Research Article

Role of diagnostic hysteroscopy in evaluation of abnormal uterine bleeding and its histopathological correlation

Kamlesh R. Chaudhari*, Parul Sathe

Department of Obstetrics & Gynecology, K.J. Somaiya Medical College and Research Centre, Mumbai, MH, India

Received: 17 July 2014
Accepted: 8 August 2014

***Correspondence:**
Dr. Kamlesh R. Chaudhari,
E-mail: dr.kamleshchaudhari@gmail.com

ABSTRACT

Background: The aims of this study are 1) To study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding. 2) To correlate hysteroscopic findings with histopathology findings.
Methods: This is a prospective interventional study conducted in the dept. of obstetrics & gynecology at K.J. Somaiya hospital in the period between January 2010 to December 2012. Women between 20-60 years of age of any parity who presented with complaints of Abnormal Uterine Bleeding (AUB) and who did not require any emergency management were enrolled in the study after excluding pregnancy, uterine/cervical infection/PID, cervical malignancy, H/o uterine perforation, patients on Oral Contraceptive Pills (OCPs), and presence of medical contraindication to any invasive procedure. A total of 98 women were included in the study. They were counselled and informed consent was taken. Patients were evaluated with detailed history, thorough examination and investigations. Hysteroscopy was done under total intravenous anaesthesia followed by endometrial biopsy. Hysteroscopic findings were then correlated with histopathology reports.
Results: The sensitivity, specificity, Positive Predictive Value (PPV), Negative Predictive Value (NPV) and accuracy of diagnostic hysteroscopy in the study was 98.3%, 80.5%, 89.7%, 96.7% and 91.8% respectively. For the diagnosis of endometrial hyperplasia these were 92%, 92%, 89%, 94%, and 92 % respectively. For polyp these figures were 94%, 96%, 87%, 98%, 95% respectively; for endometrial atrophy there were 66%, 95%, 60 %, 98% and 94%; for submucous fibroid 91%, 95%, 78%, 98%, and 94%; for malignancy 75%, 98%, 75%, 98%, 97% respectively.
Conclusions: With the above results it can be concluded that hysteroscopy is safe, sensitive and reliable diagnostic procedure. However endometrial biopsy improves the diagnostic accuracy of hysteroscopy.

Keywords: AUB, Hysteroscopy, Histopathology, Endometrial biopsy

INTRODUCTION

"A vigilant eye in the uterine cavity is better than numerous blind curettages" - Lindmann.

AUB is a common clinical presentation; it amounts to 35% of office visits and 25% of gynecological surgeries and this incidence rises to 69% in peri or postmenopausal group[1] of women. It is difficult to diagnose the cause of AUB as it varies from DUB to endometrial cancer. The spectrums of conditions which may lead to AUB include endocrinological disorders on one side to malignancy on the other hand and hence it's vital to diagnose the cause of bleeding. Various methods to diagnose the cause of AUB include USG pelvis, sonohysterography, hysteroscopy and Dilatation and Curettage (D & C). The primary goal of the clinical evaluation of AUB is to establish a specific diagnosis in the most efficient and least invasive manner.[1] The most commonly used procedure traditionally is dilatation and curettage, which is a blind procedure which has to be done under general anaesthesia. Whereas hysteroscopy is a newer method done on OPD basis. Hysteroscopic evaluation permits the direct visualization and assessment of the endocervical and uterine cavities and hence proving a reliable method of diagnosing intrauterine abnormalities.[2-4] As a matter of

fact hysteroscopy is considered the gold standard for evaluating intrauterine abnormalities as its "Sees and decides" the cause of AUB.

METHODS

A prospective interventional study was conducted in the department of obstetrics and gynecology at the K.J. Somaiya medical college and research centre from January 2010 to December 2012.

A total of 98 patients with complaints of AUB in the age group of 20-60 years of any parity and those who didn't require emergency management were included in the study. Women who were pregnant or had history of cervicitis, vaginitis and endometritis, h/o current pelvic infection, H/o uterine perforation, patients on OC pills, patients with cervical malignancy and patients with medical contraindications to invasive procedure were excluded from this study. After taking detailed history, with thorough examination, investigations and informed consent patients were posted for diagnostic hysteroscopy.

Hysteroscopy was performed on all patients in the operation room with total intra venous anaesthesia (using fortwin, phenargan, midazolam, ketamine and propofol) by using rigid hysteroscope (7 mm) after dilating the cervix by serial dilatation with Hegar's dilators. Normal saline was used as distending medium.

Endometrial biopsy was performed using scissors/ biopsy forceps and the samples were sent for histological examination. Focal intrauterine lesions viz. polyps and myomas were removed in the same sitting and directed to histological examination.

All the patients were discharged 6 hours after the surgery from the hospital. There was no complication reported in any of these patients.

RESULTS

AUB is more common in multipara between 51-60 years of age (Table 1).

Table 1: Age and parity incidence.

Age	Parity			No. of patients	Percentage
	Nullipara	Multipara	Grand multipara		
21-30 years	5	5	4	14	14.28
31-40 years	7	10	2	19	19.37
41-50 years	5	14	9	28	28.57
51-60 years	10	15	12	37	37.77
Total	27	44	27	98	

Menorrhagia is the most common symptom seen in 39.79% of patients, followed by metrorrhagia seen in 19.37% (Table 2).

30.61% of women had normal hysteroscopic findings (Table 3).

Endometrial hyperplasia is the most common abnormal hysteroscopic finding in patients with AUB (Table 3).

Table 2: Clinical presentation.

Symptom	No. of patients	Percentage
Menorrhagia	39	39.79
Metrorrhagia	19	19.37
Menometrorrhagia	15	15.30
Polymenorrhea	15	15.30
Postmenopausal bleeding	10	10.20
Total	98	

Table 3: Hysteroscopic findings.

Type of AUB	Hysteroscopic findings						No. of abnormalities detected	Total no. of patients	%
	Normal	Hyperplasia	Polyp	Myoma	Atrophic	Malignancy			
Menorrhagia	05	18	10	06	-	-	34	39	39.79
Metrorrhagia	08	03	04	04	-	-	11	19	19.37
Menometrorrhagia	02	06	03	04	-	-	13	15	15.30
Polymenorrhea	15	-	-	-	-	-	-	15	15.30
Postmenopausal bleeding	-	02	-	02	02	04	10	10	10.20
Total	30	29	17	16	02	04	68	98	

Hysteroscopic findings and histopathology findings correlate well in cases of endometrial hyperplasia (29.49% in hysteroscopy and 28.57% in histopathology) (Table 4).

Table 4: Comparison between hysteroscopic & histopathological finding.

Findings	Hysteroscopic	Histopathology
Normal	30	36
Endometrial hyperplasia	29	28
Endometrial polyp	16	15
Fibroid	14	12
Endometrial atrophy	5	3
Endometrial malignancy	4	4
Total	30+68=98	36+62=98

Out of 68 (69.37%) abnormal hysteroscopic findings 61 (62.24%) pts had abnormal histopathological reports (Table 5).

Table 5: Accuracy of hysteroscopy in diagnosis of intra uterine pathology.

Hysteroscopy	Histopath abnormal	Histopath normal	Total	%
Abnormal	61	7	68	69.37
Normal	1	29	30	30.62
Total	62	36	98	

Sensitivity of hysteroscopy is 98.3% and negative predictive value is 96.7% for diagnosis of intra uterine pathologies (Table 6).

Table 6: Different statistical values of hysteroscopy in diagnosis of intra-uterine pathologies.

Parameters	Percentage
Sensitivity	98.3%
Specificity	80.5%
Positive predictive value	89.7%
Negative predictive value	96.7%
Accuracy of hysteroscopy	91.8%

Table 7: Different statistical values of hysteroscopy in diagnosis of intra-uterine pathologies.

	Sensitivity	Specificity	PPV	NPV	Accuracy
Endometrial hyperplasia	92	92	89	94	92
Polyp	94	96	87	98	95
Myoma	91	95	78	98	94
Atrophy	66	95	60	98	94
Malignancy	75	98	75	98	97

Hysteroscopic view of endometrial pathologies

Figure 1-4 shows hysteroscopic view of endometrial pathologies.

Figure 1: Simple hyperplasia without atypia.

Figure 2: Submucous polyp.

Figure 3: Ca endometrium.

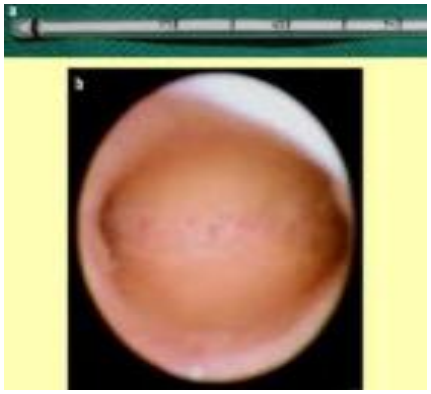

Figure 4: Atrophic endometrium.

DISCUSSION

AUB is an important and common problem encountered in gynaecological practice. Endometrial and uterine abnormalities such as leiomyoma, polyps and hyperplasia are more common than previously thought. With the aim of solving the problem, a precise diagnostics is required. Diagnostic curettage has been the method of choice to diagnose endometrial abnormalities[2] for many years but hysteroscopy combined with histologic examination subsequently became the "gold standard" for such evaluation.[5]

Hysteroscopy is a superior method that has high sensitivity and specificity in diagnosing the cause of AUB due to the fact that the uterine cavity and intrauterine pathology are directly visualized.

In this study 98 cases with AUB were included. It was observed that most of the patients were in the age group of 51-60 years with an average age of 44.2 years. This is consistent with findings in Trajkovic's study[6] and Paulo Vercillini et al., Luigi Mangiuzulli University, Italy in which mean age of patients with AUB was 41.5+7.8 years.

The most common indication of hysteroscopy in the study was menorrhagia which was present in 39 (38.22%) patients and least common indication was postmenopausal bleeding that was observed in 10 (9.8%) patients. The most common cause of AUB in this study was endometrial hyperplasia (27.44%) followed by endometrial polyp (14.7%). These results were similar in the study conducted by Aisha Razzaq et al.[3] in which 39% women presented with menorrhagia and 7.5% had postmenopausal bleeding.

In our study sensitivity, specificity, positive predictive value, negative predictive value and accuracy for hysteroscopy were 98.3%, 80.5%, 89.7%, 96.7% and 91.8% respectively. Following is the table comparing these values for hysteroscopy in AUB in other studies.

Table 8: A comparison of various parameters for detection of endometrial polyp in various studies.

Parameters	A. Razzaq et al.[3]	Allamah et al.[4]	Our study
Sensitivity	93.3%	93%	94%
Specificity	98.5%	100%	96%
Positive predictive value	93.3%	100%	87%
Negative predictive value	98.5%	95.4%	98%
Accuracy	97.5%	-	95%

Table 9: A comparison of various parameters for detection of endometrial hyperplasia in various studies.

Parameters	A. Razzaq et al.[3]	Allamah et al.[4]	Our study
Sensitivity	75%	75%	92%
Specificity	96.9%	89.7%	92%
Positive predictive value	85.7%	82.5%	89%
Negative predictive value	93.5%	93.3%	94%
Accuracy	92.5%	-	92%

Table 10: Comparison of various parameters in diagnosing intra-uterine pathologies by hysteroscopy.

Parameters	Allamah et al.[4]	Barati et al.[7]	A. Razzaq et al.[3]	Jakab et al.	Paschopaulos et al.	Our study
Sensitivity	100%	97.8%	97.95%	97%	92%	98.3%
Specificity	80.5%	99%	90.6%		95%	80.5%
Positive predictive value	88.9%	94%	94%	-	-	89.7%
Negative predictive value	100%	99%	96.7%	-	-	96.7%
Accuracy	-	-	-	-	-	91.8%

Hysteroscopy is safe, highly sensitive diagnostic procedure. It ensures speed and safety of diagnosis & treatment. However endometrial biopsy improves the diagnostic accuracy of hysteroscopy.

ACKNOWLEDGEMENTS

We would like to thank Dr. Geeta Niyogi, Dean of K.J. Somaiya Medical College & Research Centre, who has allowed us to conduct this study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Luigi Man, Paulo Vercellini. Role of TVS and outpatient diagnostic hysteroscopy in evaluation of AUB. Clinics of Obstetrics and Gynecology, 2014. Available at: http://endometriosis.org/.
2. Grimes DA. Diagnostic dilatation and curettage: a re-appraisal. Am J Obstet Gynecol. 1982;142:1-6.
3. Aisha Razzaq, S. Shankar-ud-Din, N. Soomro. Role of diagnostic hysteroscopy in case of abnormal uterine bleeding. Pak J Surg. 2011;27(4):309-15.
4. Allamah T, Mohammadizadeh F. diagnostic value of hysteroscopy in abnormal uterine bleeding compared to pathology reports. Iranian J Reprod Med. 2007;5:61-4.
5. Clark TJ, Mann CH, Shah N, Song F, Khan KS, Gupta JK. Accuracy of outpatient endometrial biopsy in the diagnosis of endometrial cancer: a systematic quantitative review. Br J Obstet Gynecol. 2002;109:313-21.
6. Sonja Pop Trajkovic. Role of hysteroscopy in evaluation of patients with AUB. Clinic for gynecology and obstetrics, clinic centre Serbia. Sci J Faculty Med. 2011;28(3):177-81.
7. Barati Mojgan, Masihi S, Moramezi F, Salemi S. Office hysteroscopy in patients with abnormal uterine bleeding and normal transvaginal-sonography. Int J Fertil Steril. 2008;4:175-8.

DOI: 10.5455/2320-1770.ijrcog20140958
Cite this article as: Chaudhari KR, Sathe P. Role of diagnostic hysteroscopy in evaluation of abnormal uterine bleeding and its histopathological correlation. Int J Reprod Contracept Obstet Gynecol 2014;3:666-70.