



Hysteroscopic Evaluation of Abnormal Uterine Bleeding- Vaginoscopic Approach

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Abstract

Introduction: Abnormal uterine bleeding, a common but complicated clinical presentation accounting for almost 20% of gynecologic outpatient visits¹, reported 25% of gynecologic surgeries.²Easily accomplished in an office setting with little or no analgesia or anesthesia, office hysteroscopy provides direct access to the uterine cavity giving an accurate diagnosis directing surgical or medical treatment for the specific pathology and may avoid the need for major surgery

Aims & Objectives: Hysteroscopic evaluation of the cervical canal & uterine cavity in women with AUB to evaluate various causes and to perform diagnostic or therapeutic intervention whenever possible to reach the actual diagnosis and relieve the symptoms in office setting.

Method: 100 cases diagnosed with various presentations of AUB in reproductive and postmenopausal group were evaluated prospectively by office hysteroscopy with vaginoscopy approach between Jan 2014 to Jun 2015 in tertiary care hosp of Pune (Maharashtra). Histopathology examination of endometrium and/or pelvic ultrasound was done in selective cases to reach a final diagnosis.

Results: Office hysteroscopy was successfully carried out in 98 of 100 women, 42 % of these had normal cavity, 13% had fibroid, 12% had polyp, 7% had hyperplastic endometrium, 7% had adenomyosis, 3% foreign bodies, 7% intrauterine adhesions, 2% tubercular endometritis, 1 % retained products, 1 case of endometrial CA and 2 cases of uterine anomalies.

Total 12 cases (12.24%) of AUB were treated in the same setting, including six cases of weak intrauterine adhesions, three cases each of small intrauterine polyps and three cases of foreign bodies, in two cases CuT thread was missing whereas the other woman having AUB was unaware about CuT inserted in her uterus long back.

Conclusion: Diagnostic hysteroscopy performed with vaginoscopy approach in an office setting with little discomfort to the patient, enabled the physician to search for organic intrauterine abnormalities and to select the proper form of therapy based on the findings reducing requirement of unnecessary surgical intervention in patients with normal cavity. A small proportion of patients were treated in the same setting for the underlying pathology to relieve the symptoms. With the invention of modern thin caliber, cordless and portable devices, office hysteroscopy will definitely be used as a first step in evaluation of AUB.

Keywords: Abnormal uterine bleeding, Office hysteroscopy, Vaginoscopy, Menorrhagia, Polyp, Fibroid.

Introduction

Abnormal uterine bleeding (AUB) is one of the commonest problems with which women present to gynecology outpatient department.¹ The problem can present in a wide variety of clinical types and can be due to multiple unrelated etiologies.

The prevalence of abnormal uterine bleeding, the difficulties in identifying its causes, and the cost of management prompts for reliable diagnostic techniques and treatment strategies as it often leads to medical and surgical strategies that focus on correcting symptoms or providing treatment without first making a definitive diagnosis. An ideal approach would promptly identify patients with organic disease, facilitate patient comprehension and choice of treatment options, improve treatment efficacy, and reduce overall cost of care.

Easily accomplished in an office or outpatient setting with little or no analgesia or anesthesia, hysteroscopy provides direct access to the uterine cavity. Intrauterine magnified visualization when displayed on a video screen encouraged and facilitates patient-physician dialogue, allowing thorough informed consent regarding subsequent medical or surgical interventions. Moving the procedure from hospital operation theatre setting to physician's office significantly reduces the cost too.²

Diagnostic hysteroscopy and simple operative hysteroscopy can usually be done in an office setting.³ An accurate diagnosis may result in surgical or medical treatment directed at the specific pathology and may avoid the need for major surgery. This article reviews the history, instrumentation, diagnostic and operative techniques, and potential complications of hysteroscopy in the management of abnormal uterine bleeding.

Material and Methods

This is a prospective study carried out in outpatient department of Command Hospital (Southern Command), associated with Armed

Forces Medical College, Pune between Jan 2014 to Jun 2015.

Ethical approval for the study was obtained from College research ethics committee prior to embarking on the study.

Total 1188 of 17054 women attending gynecology OPD presented with complaints of menstrual irregularity making an incidence of 7 % of AUB in the study population.

Women in Reproductive & Postmenopausal age with AUB who attended the Gynecology OPD on Thursdays were subjected to a thorough physical examination and routine investigations like Hb%, blood sugar, urine routine & microscopy, HIV, HBSAg, Anti HCV followed by hysteroscopy after obtaining post counseling informed consent.

The procedure was performed in office hysteroscopy room. No preprocedure medication or analgesia/anesthesia was given though tab misoprostol 200 microgram was applied by the women 3 to 4 hrs prior to undergoing this procedure. Vaginoscopy approach was adapted by avoiding primary instrumentation before inserting the scope into vagina. Instruments were used only in cases requiring some diagnostic/therapeutic intervention. Histopathology examination of endometrium was done in selective cases to reach a final diagnosis. Following women were excluded from the study:

- Pregnancy/Abortions/Ectopic pregnancy
- Uterine and cervical infections and PID
- STD's and vaginitis
- Lower genital tract malignancies
- Medical contraindications to any invasive procedures

Observation

A total 100 patients were included in the study. Mean age of presentation was 42 years, 96 were premenopausal and 04 were postmenopausal. 09 women among the premenopausal age group were nulligravida. (Table 1)

Table-1 Age Distribution of Patients with AUB (n=100)

| Age Distribution | % of Patients | | Nulligravida |
|------------------|---------------|----------------|--------------|
| | Premenopausal | Postmenopausal | |
| 20-25 | 3 | - | 2 |
| 25-30 | 8 | - | 4 |
| 30-35 | 11 | - | 1 |
| 35-40 | 14 | - | 1 |
| 40-45 | 30 | - | 1 |
| 45-50 | 24 | - | - |
| 50-55 | 6 | 1 | - |
| 55-60 | - | 2 | - |
| 60-65 | - | 1 | - |

Out of 100 hysteroscopies carried out, 98 were successful. The unsuccessful hysteroscopy were due to excessive bleeding which clouded the field and hence impaired visibility in one case and another case was abandoned because of excessive pain experienced by the patient.

In the study population, menorrhagia was the most common presenting complaint in 72 women (70.56%) followed by dysmenorrhea in 23

(22.54%), Hypomenorrhea, oligomenorrhea and polymenorrhea were present in 21 women (20.74%), metrorrhagia in 06 (5.88%), metropathica hemorrhagica in 02 whereas only 04 women presented with postmenopausal bleeding. Many of the patients had more than one type of bleeding which gave a multifaceted presentation. (Table-2)

Table-2 Type of Complaint (Presentation)

| Sr No | Type of Bleeding | Total No(n=100) | % |
|-------|---------------------------|-----------------|-------|
| 1 | Menorrhagia | 72 | 70.56 |
| 2 | Dysmenorrhoea | 23 | 22.54 |
| 3 | Hypomenorrhoea | 09 | 8.82 |
| 4 | Oligomenorrhoea | 08 | 7.84 |
| 5 | Polymenorrhoea | 04 | 4.08 |
| 6 | Metrorrhagia | 06 | 5.88 |
| 7 | Metroapathia hemorrhagica | 02 | 2.04 |
| 8 | Post menopausal bleeding | 04 | 4.08 |

Many of the patients had more than one type of bleeding

In our study, 42 % of these women had normal cavity, 13% had fibroid, 12% had polyp, 7% had hyperplastic endometrium, 8% had adenomyosis, 2% had foreign bodies, 7% had intrauterine adhesions, 2% tubercular endometritis, 1 % retained products, 1 case of endometrial CA and 2 cases of uterine anomalies (Table-3). Histopathology examination of endometrium was done in selective cases to reach final diagnosis.

Table-3 Total Hysteroscopic Findings

| Sr No | Findings | Total No(n=98) | % |
|-------|-----------------------------------|----------------|-------|
| 1 | Normal cavity | 42 | 42.86 |
| 2 | Fibroid | 13 | 13.27 |
| 3 | Polyps | 12 | 12.24 |
| 4 | Fibroid+ Polyp | 1 | 1.02 |
| 5 | Hyperplastic Endometrium** | 7 | 7.14 |
| 6 | Adenomyosis* | 7 | 7.14 |
| 7 | Foreign Bodies | 3 | 3.06 |
| 8 | Intrauterine adhesions | 7 | 7.14 |
| 9 | Tubercular Endometritis** | 2 | 2.04 |
| 10 | Retained products of conception** | 1 | 1.02 |
| 11 | Endometrial CA** | 1 | 1.02 |
| 12 | Uterine Abnormalities | 2 | 2.04 |

*Confirmed with ultrasound as an adjunctive method

**Confirmed with histopath report of biopsy specimen

Findings as per FIGO classification system for causes of AUB

As per new FIGO nomenclature 84 of these 100 women presented with heavy menstrual bleeding (HMB), 9 had light bleeding (less than 5ml/day), 8 infrequent bleeding (cycle > 38 days), 4 had frequent bleeding (cycle <24 days)

Table-4: AUB Presentation as per FIGO (2011)

| Sr No | Presentation | Total No (n=100) | % |
|-------|---------------------|------------------|----|
| 1 | HMB | 84 | 84 |
| 2 | Light bleeding | 09 | 09 |
| 3 | Frequent bleeding | 04 | 04 |
| 4 | Infrequent bleeding | 08 | 08 |

The causes of AUB as per new FIGO classification can be tabulated as below

Table-5: Findings in AUB as per FIGO (2011)

| Cause of AUB | Total No (n=98) |
|-----------------------------|---|
| <u>Structural</u> | |
| AUB-P | 12 |
| AUB-A | 07 |
| AUB-L | 13 |
| AUB-M | 08 |
| <u>Nonstructural</u> | |
| AUB-C | Normal cavity-42 |
| AUB-O | |
| AUB-E | |
| AUB-I | 03(CuT) |
| AUB-N | Anomalies-2, Endometritis-2 Adhesions-7 |

Interventions/procedure done

Total 12 cases (12.24%) with benign intrauterine pathologies like small polyps, CuT and flimsy adhesions were successfully treated in the same setting with the help of few instruments like small

artery forcep, karman's cannula and the tip of the endoscope itself to break the thin adhesions, without subjecting the individuals to the risk of anesthesia avoiding hospital stay and additional expenditure for treatment.

Table-6 : Interventions/Procedures

| Sr No | Interventions/Procedures | Total (n=98) |
|-------|--------------------------|--------------|
| 1 | Small endometrial polyps | 03 |
| 2 | Foreign bodies(CuT) | 03 |
| 3 | Adhesiolysis | 06 |
| Total | | 12 (12.24%) |

The complications noted were on minor scale, cases of vasovagal attack (Post procedure), one case each of vomiting and intolerable pain, were managed conservatively either with oral NSAID or anti-emetics.

Discussion

A descriptive nonrandomized study for evaluation of abnormal uterine bleeding using office hysteroscopy with vaginoscopy approach was carried out at tertiary care teaching hospital and medical college. 100 consecutive patients with abnormal uterine bleeding attending gynecology OPD were selected after obtaining a basic history and investigations, and ruling out contraindications and cases with exclusion criteria. No specific method of randomization was used.

There has been a growing interest world over in carrying out the hysteroscopic examination of the uterine cavity as an outpatient procedure. Its sensitivity and specificity in detecting intrauterine abnormalities have been well recognized.^{19,20,21,25,26,29} A number of studies have been carried out to recognize the advantages of this procedure. In this study the main aspects studied were the various findings in the study population, visibility achieved during the procedure and the complications noted in addition to few cases which could be managed in the same office setup without taking the patient to OT.

In the study population, mean age of the women with AUB was 42 years as compared to other studies, like Moawad et al (2014)² with an average age of 47 years, Guin et al (2011)⁵⁴ with 40 years and Chaudhari et al (2014)⁵¹ with 44 years. Our study included 4% postmenopausal and 96% premenopausal women, which included 09

nulligravidas, where as Moawad et al (2014) included 18% postmenopausal, 82% premenopausal and 15% nulligravid women. The other similar study by Guin et al (2011) has 2% postmenopausal, 98% premenopausal including 4% nulligravid women. Chaudhary et al(2014) included 27 nullipara, 44 multipara and 27 grand multipara women including 10 postmenopausal women.

58 % of women in this study had hemoglobin >10 gm%, 42 % had Hb between 7 to 10 gm%, 7 had Hb less than 7 gm% and 4 of them required blood transfusion because of very severe anemia.

In this study menorrhagia was the most common presenting complaint in 72 women(70.56%) followed by dysmenorrhea in 23(22.54%), Hypomenorrhea, oligomenorrhea and polymenorrhea were present in 21 women (20.74%), metrorrhagia in 06(5.88%), metropathica hemorrhagica in 02 whereas only 04 women presented with postmenopausal bleeding. Many of the patients had more than one type of bleeding, which gave a multifaceted presentation. Other comparable studies by Jotsna et al (2004)⁵³ and Guin et al(2011) described menorrhagia as the predominant symptom in 56% and 46% of the study population, respectively whereas postmenpausal bleeding was present in 6% and 2% of the study population respectively. Chaudhari et al (2014) documented menorrhagia in 40% followed by metrorrhagia in 20% cases.

Hysteroscopic findings in patients with menorrhagia in our study included observations like normal cavity in 43%, fibroids in 18%, polyp in 16%, fibroid-polyp in 1%, hyperplastic endometrium in 8%, adenomyosis in 5% cases, 3 cases of foreign bodies (CuT) and 2 cases of the bicornuate uterus. In study by Jotsna(2004) 30 patients presented with this complaint and the various findings included polyp in 7 cases, myoma in 8, hyperplastic endometrium in 9 and subseptate uterus and forgotten IUCD in 1 case each. Guin et al(2011) recorded 12 cases each of hyperplastic endometrium and polyp, 2 had fibroids, 4 had CuT and 2 had normal cavity. Chaudhari et al (2014) documented hyperplasia in 18 cases, polyp in 10 and myoma in 6 cases.

Dysmenorrhea as a presentation had normal hysteroscopic finding in 35% cases, polyps in 9% cases, fibroid in 22%, adenomyosis in 26% and hyperplastic endometrium in 9% cases. Other major studies did not mention dysmenorrhea as a distinct presentation.

In our study 09 patients had hypomenorrhea as their presenting complaint. This abnormal bleeding was dominated by intrauterine adhesions as their principle abnormal finding. Guin et al (2011) recorded 12 cases of hypomenorrhea where 2 cases had hyperplastic endometrium, 6 had polyp and 6 had normal uterine cavity on hysteroscopy.

Oligomenorrhoea featured as a complaint in 8 patients, normal cavity was found in 8 of them. The rest mainly had adhesions and findings suggestive of tubercular endometritis. Guin et al (2011) had total 18 cases of oligomenorrhoea, 2 had adhesions, 10 had atrophic endometrium and 6 had normal cavity.

Polymenorrhea was the presenting feature in four cases. The only abnormal finding was that of a polyp in one case. The other three patients had normal findings. Jotsna (2004) recorded 12 cases of Polymenorrhea but no intrauterine pathologies were detected on hysteroscopic examination. Guin et al (2011), in this group had 2 CuT, 2 Polyp, 4 cases of fibroid and 4 had a normal uterine cavity.

Chaudhari et al (2014) documented 15 cases of polymenorrhea all of which had normal findings on hysteroscopy.

Metrorrhagia was found in 06 cases. Abnormal findings were demonstrated in 05 cases. Hyperplastic endometrium was seen in 02 of 06 cases while polyp, fibroid and foreign body was seen in remaining three while 28% showed a normal cavity. Jotsna (2004) recorded 15 cases of metrorrhagia out of which 3 had hyperplastic endometrium, 3 had polyp, myoma in 2 and intrauterine adhesions in 2 cases. Guin et al (2011) had 6 cases of hyperplastic endometrium, 6 had fibroid, 2 had polyp, 2 had atrophic endometrium and 1 had CuT. Chaudhari et al (2014) documented 19 cases with metrorrhagia out of which 8 had normal cavity, 3 had hyperplasia and 4 cases each of myoma and polyp.

Metropathica hemorrhagica was demonstrated in 02 cases, of which one showed normal findings, whereas other revealed findings suggestive of hyperplastic endometrium.

In our study 4 patients had presented with postmenopausal bleeding of which 01 had carcinoma endometrium whereas rest 03 had a normal cavity with atrophic/senile changes in our study. Jotsna (2004) had 6 cases of postmenopausal bleeding wherein 2 had hyperplastic endometrium, 2 had polyp, 1 case each of myoma and endometrial carcinoma. Guin et al (2011) recorded only 2 patients with postmenopausal bleeding and they had atrophic endometrium on evaluation. Chaudhari et al (2014) documented 10 cases of postmenopausal bleed where 2 had hyperplasia, 2 had myoma, 2 cases of atrophy and 4 cases of malignancy were detected.

In our study, 42 % of women had a normal cavity suggesting 58% pathology detection rate as compared to other studies with pathology detection rate of 47% by Van Dongen (2007)⁵⁵, 64% by Moawad (2014), 66% by Jotsna (2004), and 74% of Guin et al (2011), here it is important to mention that 18% of patients included by Guin in pathological finding group had atrophic

endometrium. Chaudhari et al (2014) documented pathology detection rate of 69% on hysteroscopy. This indicated that the findings in our study were more or less consistent with findings from other few similar studies.

While talking about specific pathologies, in our study, 13% women had fibroid, 12% had polyp, 7% had hyperplastic endometrium, 8% had adenomyosis, 2% had foreign bodies, 7% had asherman syndrome, 2% tuberculous endometritis, 1 % retained products, 1 case of endometrial CA and 2 cases of uterine anomalies. Other similar studies showed fibroids in 15% (Moawad, 2014), 24% (Van Dongen2007), 17% (Jotsna, 2004), 16% (Guin et al,2011), polyps in 32% (Moawad,2014), 30% (Van Dongen2007), 20% (Jotsna, 2004), 28% (Guin et al, 2011) and 14 % IN Chaudhari et al (2014).

Hyperplasia was described by Moawad in 8% patients, whereas Jotsna et al and Guin et al described it in 20% and 30 % of study population respectively, Chaudhari et al (2014) documented hyperplasia in 29 cases. Adenomyosis was described by Towbin in 11% and by Shwayder in 2% of the study population. Adhesions were detected in 7% by Guin et al. Misplaced/missing CuT causing menorrhagia/ dysmenorrhea was found in 2% by Moawad (2014). Retained products of conception were found in 1% by Guin et al whereas endometrial carcinoma was detected in 1.3% and 1.35% of study population by Jotsna (2004) and Motashaw respectively, Chaudhari et al (2014) documented malignancy in approximately 4% cases. Uterine anomalies were detected in 2% and 2.6% by Moawad and Jotsna respectively.

The possible difference in the percentage of findings is due to the fact that only excessive bleeding disorders were considered in other studies. Our study considered all types of abnormal uterine bleeding including hypomenorrhoea, oligomenorrhoea and dysmenorrhea. This could have led to the possible difference in the hysteroscopic findings.

Though the primary aim of this study was diagnostic evaluation of AUB, we also successfully attempted therapeutic interventions to relieve the symptoms of the patient 12 patients (12.24%) with benign pathologies by carrying out minor procedures in the same office setting without using resectoscopes, avoiding further operative intervention. Bettocchi et al(2002)⁵², managed 47 to 79% of patients with relatively smaller intrauterine pathology in outpatient operative hysteroscopy using a thin resectoscope with bipolar electrode.

In our study total two procedures were abandoned (2% Failure rate), first because of unbearable pain and the second because of clouding of vision because of hemorrhage in the field.. Other similar studies had a failure rate of 7% in study by Moawad et al (2014) where all the failures were because of inadequate visualization. Our study being unique in using vaginoscopy approach for hysteroscopy had very low failure rate as it caused significantly less pain due to less instrumentation. This study confirms the well known fact that outpatient hysteroscopy offers an acceptable alternative to procedures under general anesthesia. The patients included in this study were not randomly selected but represents a vast majority of women requiring evaluation for abnormal uterine bleeding. Elderly and infirm patients appeared to tolerate the procedure with ease.

An attempt was also made to study the complications caused by the procedure. Though literature identified a long possible list of complications that could be caused by the procedure, the main ones being Trauma, Perforation, Infection and Distension media complications, no major complications were encountered in our study of 100 cases. However, three cases experienced minor complications.

- Vaso-vagal attack: this complication was seen in solitary case and was seen immediately after the end of the procedure. The patient responded satisfactorily to symptomatic treatment.

- Vomiting: solitary case responded satisfactorily to IV antiemetic.
- Acute pain: this was seen in a patient of oligomenorrhea who also was a case of infertility. The patient reported to the nearby private clinic the same late night with complaints of pain abdomen and fever and was sent back after conservative management. The patient followed up in OPD the next morning and managed with NAIDS and antibiotics to treat the acute PID.

A similar study by Guin (2011) showed only three minor complications which were managed

conservatively whereas Moawad (2014) had one minor and one major (Uterine perforation) complication during their study, the perforation was subsequently managed in the OT setting.

Hysteroscopy plays an undoubted role in detection of intrauterine abnormalities. The simplicity of this procedure in reaching a conclusive diagnosis in a single OPD visit has probably led to its popularity. The researchers in the past had noted, many interesting findings and these are tabulated as follows. Our study does not differ significantly in the findings when compared to other similar studies.

Table-7: Hysteroscopic findings in various studies

| Study (%/No) | Findings | Normal | Myoma | Polyp | Myoma + Polyp | Hyperplasia | Cancer | Adenomy -osis | Others |
|--|----------|------------|------------|------------|---------------|-------------|---------|---------------|-----------|
| Indman n= 243 | | 41(97) | 31 (75) | 20 (47) | 3 (8) | 2(5) | 1(2) | 0(0) | 2(4) |
| Shwayder n=50 | | 46(23) | 28(14) | 16(8) | 0(0) | 6(3) | 0(0) | 2(1) | 2(4) |
| Towbin n=149 | | 24(35) | 33(49) | 22(33) | 5(7) | 4(6) | 0(0) | 11(17) | 1(2) |
| Loffer n=187 | | 59.4 (111) | 11.2 (21) | 16(30) | - | 8.6(16) | 3.2(6) | - | 1.6(3) |
| Jotsna (2004) ⁵³ | | 34(25) | 17(12) | 20(15) | | 22(16) | 1.3(1) | | |
| Motashaw | | 33 | 11.3 | 21.5 | - | 23 | 1.35 | - | 7.3 |
| Guin G (2011) ⁵⁴ n=100 | | 26 | 16 | 28 | - | 30 | - | - | 30 |
| Chaudhary (2014) ⁵¹ N=98 | | 31 | 16 | 17 | | 29 | 4 | | |
| Moawad (2014) ² N=130 | | 36(47) | 15(20) | 32(42) | 5(7) | 8(10) | | | |
| Our study N=100 | | 42.87 (42) | 13.26 (13) | 12.24 (12) | 1.2(1) | 7.14(7) | 1.02(1) | 8.16(8) | 14.28(14) |

Conclusion

Abnormal uterine bleeding is a common but complicated clinical presentation accounting for almost 20 % of visits to physician offices for gynecologic conditions¹ and reported 25 % of gynecologic surgeries.²

Gynecologic endoscopy (laparoscopy and hysteroscopy) has become an indispensable aid in the diagnosis of abnormal uterine bleeding since it was introduced four decades ago. During last 20 years, endoscopic procedures have been used with increasing frequency as they offer numerous advantages.

Hysteroscopy provides a simple & an easy method for visualization of the cervical canal & uterine

cavity. It can also be used for treating different kinds of benign pathologies. Contemporary instrumentation permits the gynecologist to acquire quickly the basic skills necessary for routine performance of office-based hysteroscopy. Diagnostic, panoramic hysteroscopy performed in an office setting, with vaginoscopy approach, causes little discomfort to the patient. The procedure enables the physician to search for organic intrauterine abnormalities and to select the proper form of therapy based on the observations. Often no pathology is seen and further surgical interventions are not needed. Few benign pathologies can be treated in the same setting reducing cost, time and anesthetic complications

to the patient. This procedure currently represents the state of art for investigation of the endometrial cavity. In the future, with the invention of portable, cordless hysteroscopes with disposable sheaths, it will surely become standard of care as the first step for evaluation of causes of abnormal uterine bleeding in selected patients.

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