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Advances in Outpatient Hysteroscopy

Ayesha Ajmi

Abstract

Hysteroscopy is a gynaecological procedure that has developed into an important tool to identify endometrial abnormality. It offers direct examination of the uterine cavity and tubal ostia and offers the option of performing targeted biopsy of suspected lesions that can be missed by blind procedures. In a large number of cases, the intrauterine lesions can be diagnosed and treated at the same setting as one step approach (“see and treat”). For example, endometrial polyps can be identified and removed; intrauterine adhesions may be divided in the office owing to the practicability of operative saline hysteroscopy, vaginoscopic approach and the convenience of miniature hysteroscopes. There is decent evidence that hysteroscopy in the outpatient clinic setting is preferred by the patients, associated with low risk of complications, quicker recovery time and reduced cost. Technological advances have led to development of high definition miniature hysteroscopes without negotiating optical performance, and hence making hysteroscopy an ingenuous, safe and trusted office procedure. Recent advances such as bipolar electrosurgery, endometrial ablation devices, morcellators and tissue retrieval system has transformed the surgical technique. This modernization of hysteroscopy completely revolutionised the approach to the management of intrauterine pathologies, moving from a blind procedure under general anaesthesia to directly visualised procedure under no or local anaesthesia, offering diagnostic as well as therapeutic procedures that should be at the disposal of every modern gynaecologist.

Keywords: outpatient hysteroscopy, office hysteroscopy, ambulatory hysteroscopy, vaginoscopy, polypectomy

1. Introduction

Hysteroscopy represents the endoscopic gynaecological examination of the endometrial cavity and denotes one of the most frequent investigations in gynaecology today, used in the diagnostic work up of abnormal uterine bleeding, postmenopausal bleeding and subfertility. The National Institute for Health and Care Excellence recommends an enhanced role of outpatient hysteroscopy in the diagnostic workup of heavy menstrual bleeding, leading to increase in the number of hysteroscopies being performed each year [1, 2]. Abnormal uterine bleeding in both the premenopausal and postmenopausal women is the commonest indication for diagnostic hysteroscopy. Similarly endometrial polyp is the most frequent pre-operative indication for operative hysteroscopy followed by submucosal leiomyoma [3]. In a retrospective clinical study of 397 patients, dilatation and curettage failed to identify pathology in 62.5% cases subsequently found at hysterectomy within

2 months [4]. A large clinical observational study demonstrated that up to 3.7 cm pathology could be safely treated by office hysteroscopy without anaesthesia [5]. Paracervical block is however commonly used for operative hysteroscopy where cervical dilatation is required [6].

During hysteroscopy it is recommended to provide the patient with emotional support (“local-vocal”), by chatting to her and offering her to look at the monitor while explaining the findings to her in order to avoid feeling of exclusion. Dedicated nursing and healthcare assistant staff is crucial in ambulatory setting. It is recommended for patients to take 400 mg of ibuprofen or another NSAID approximately 1 hour before the procedure.

2. Vaginoscopy

The traditional approach to hysteroscopy is by utilising a vaginal speculum with or without manipulation of the cervix.

Vaginoscopy refers to a method where the hysteroscope is guided into the uterus without having to use the potentially painful vaginal instruments. The availability of miniature hysteroscopes has facilitated this development. A randomised controlled multicentre trial in the UK concluded that vaginoscopy is quicker to perform, less painful, and more successful than standard hysteroscopy and therefore should be regarded as the technique of choice for outpatient hysteroscopy [7, 8].

3. Outpatient diagnostic hysteroscopy

3.1 Abnormal uterine bleeding (AUB) in women of reproductive age group

The hysteroscopy has been gold standard in the examination of the endometrial cavity in ladies with abnormal uterine bleeding for several years. In the UK, the national best practice recommendation is that all gynaecology departments should offer dedicated outpatient hysteroscopy facility to support the diagnosis and treatment of ladies with abnormal uterine bleeding. The advances in outpatient hysteroscopy have further powered the use of this facility, and it is not required any more to put patients through general anaesthesia for this purpose [9]. In most women, the diagnosis for abnormal uterine bleeding can be made in the outpatient clinic with one-stop approach with a host of other investigations, including blood tests, pelvic ultrasound, outpatient hysteroscopy and endometrial biopsy. The prompt diagnosis permits timely treatment, avoiding unnecessary delays and patient anxiety [10].

A large number of women presenting with AUB belong to the reproductive age group. The causative factors may be structural abnormalities such as endometrial polyps or fibroids or ovulatory dysfunction and primary disorder of endometrium as described in the PALM-COEIN classification (**Figure 1**). These abnormalities can be readily diagnosed in outpatient setting by ambulatory hysteroscopy with or without endometrial biopsy [11–13]. **Figure 2** shows office hysteroscope with different channels for diagnosis as well as removal of pathology.

3.2 Perimenopausal bleeding

For women in this age group presenting with new onset abnormal uterine bleeding, organic pathology, such as atypical hyperplasia or endometrial cancer, must be ruled out as anovulatory cycles and sinister pathology can coexist, in this cohort of women (**Figure 3**).

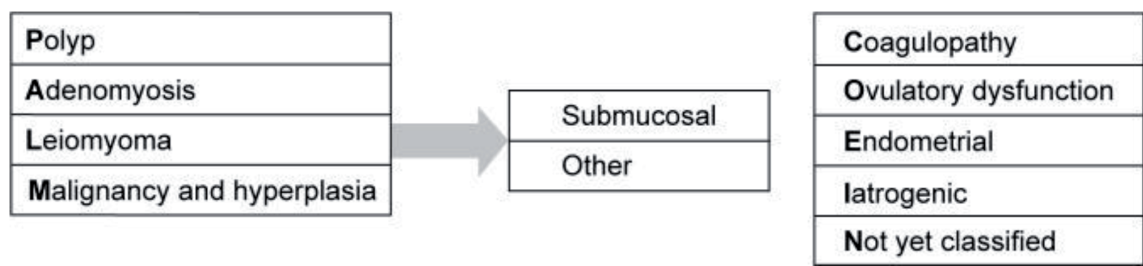


Figure 1.
FIGO classification of PALM-COEIN system. Abbreviation: FIGO, International Federation of Gynaecology and Obstetrics.



Figure 2.
Omni-myosure (HOLOGIC).

Endorsed pelvic ultrasound scan as the first-line tool for identifying structural abnormalities. Hysteroscopy remains the gold standard for precise evaluation of endometrial cavity. Indications for endometrial biopsy include women ≥ 45 years of age, failed or ineffective treatment, persistent intermenstrual bleeding and co-existence of risk factors demonstrated in **Figure 2**.

3.3 Postmenopausal bleeding

Hysteroscopy is established as the gold standard in the evaluation of AUB in postmenopausal women, eliminating the false-negative results of blind biopsy by direct visualisation of the endometrial cavity and enabling targeted biopsy if warranted [14]. It allows full visualisation of the endocervix, endometrial cavity and tubal ostia, permitting diagnosis of endometrial lesions that may be missed with blind endometrial sampling, TVS or even saline infusion sonography (SIS). Moreover, vaginoscopic technique to perform office hysteroscopy can also be employed for careful examination of possible vaginal and cervical lesion that may be responsible for abnormal uterine bleeding. This approach also reduces discomfort in women, including virgins, older women and those with moderate stenosis of the cervical os who would have required general anaesthesia otherwise.

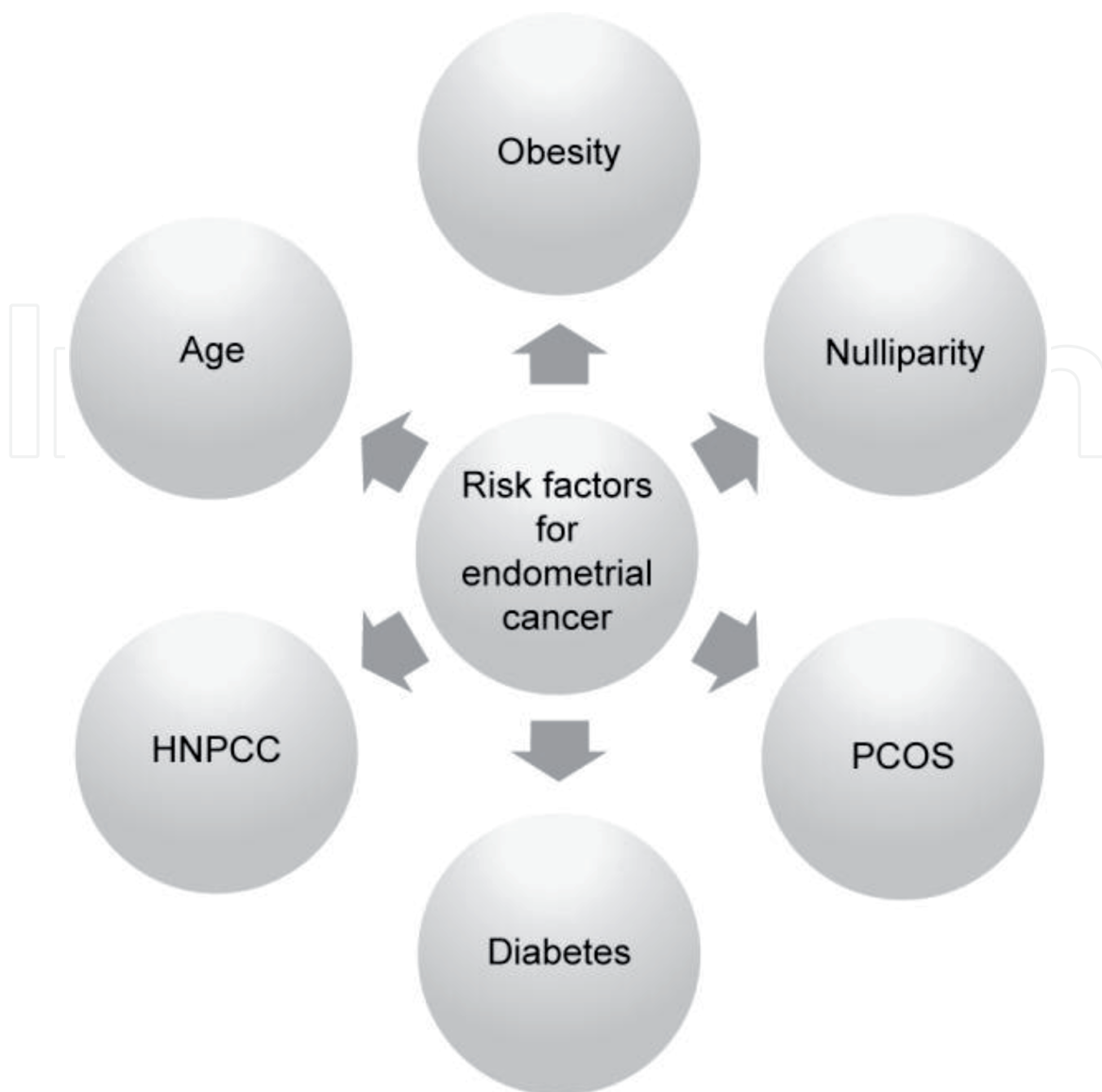


Figure 3.
Risk factors for endometrial cancer. Abbreviations: PCOS, polycystic ovarian syndrome; HNPCC, hereditary non-polyposis colorectal cancer.

The sensitivity, specificity and high precision of hysteroscopy are well established. With miniaturisation of hysteroscopes and newer treatment techniques such as bipolar devices and hysteroscopic tissue removal systems, outpatient hysteroscopy is no longer just a diagnostic test but can offer one stop treatment to women presenting with AUB [15–17].

4. Outpatient operative hysteroscopy

4.1 Hysteroscopic polypectomy

Uterine polyps are focal endometrial outgrowths that may appear anywhere in the uterine cavity (**Figure 4**). They comprise of a variable amount of glands, stroma and blood vessels. Endometrial polyps are commonly found in combination with AUB. They affect women of reproductive age as well as postmenopausal women. Their underlying aetiology is unsure, but most are benign. Hysteroscopy is the gold standard diagnostic test. Diagnosis at outpatient hysteroscopy allows for simultaneous surgical removal, which is convenient for most women. Polyps should

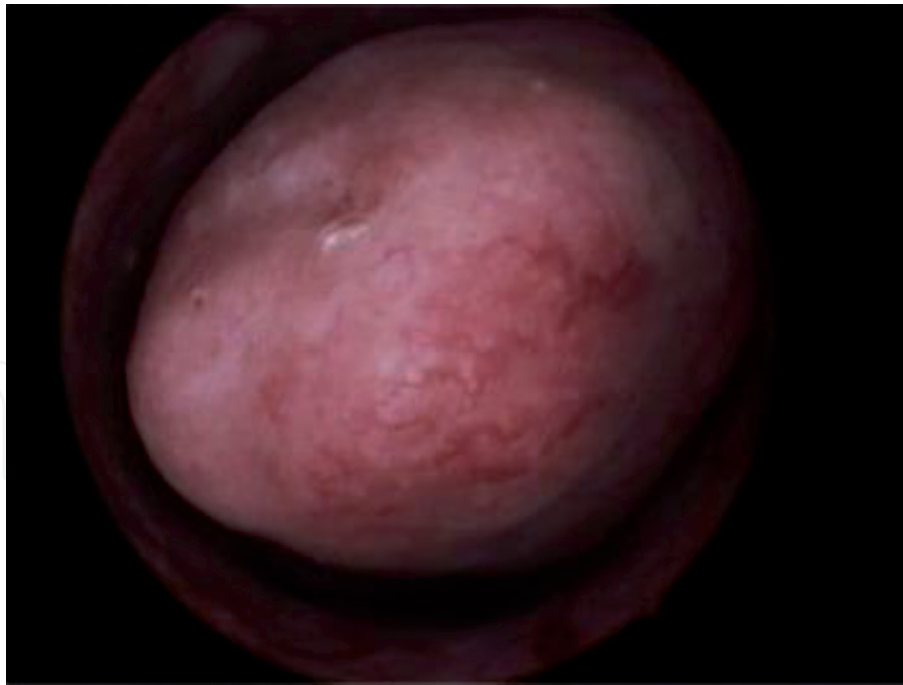


Figure 4.
Hysteroscopic appearance of an endometrial polyp.

be removed in entirety in women with post-menopausal bleeding because 6% of the polyps harbour atypical endometrial hyperplasia or cancer particularly at the base [18–21].

Video 1 <https://youtu.be/HkbCZ318vJ8> outpatient hysteroscopic polypectomy procedure.

Outpatient polypectomy has been shown to be non-inferior to the inpatient procedure [22].

Uterine polypectomy could only be performed in the past using blind procedures, such as curettage and blind avulsion with forceps. To introduce such instruments required dilatation of the cervix and manipulation within the uterine cavity, that necessitated general anaesthesia. Developments in hysteroscopic equipment have enabled polyps to be removed using fine mechanical and electrosurgical tools, which are introduced down a 5- or 7-French rigid operating hysteroscope, and lately, the development of bespoke tissue removal systems. These techniques involve hysteroscopic assessment of uterine cavity, removal of the polyp from the uterine wall and retrieval using the same kit.

The enhanced fastidiousness of surgery and bypassing the requisite for routine significant cervical dilatation have empowered this to become a useful procedure, which can be performed in the office. Often local anaesthesia is not required, especially when using miniature hysteroscopes and employing vaginoscopic technique. Intracervical or paracervical injection of local anaesthesia may be used if cervical dilatation is required [23].

The results of the OPT trial exhibited that outpatient polypectomy was comparable to inpatient polypectomy for the effective mitigation of uterine bleeding due to uterine polyps. At 6 months, 73% of women in the outpatient treatment group and 80% in the inpatient treatment group were effectively cured, and the treatment effects were sustained at 12 and 24 months.

A patient preference study was conducted alongside this RCT which demonstrated a strong treatment setting preference. Nearly, 81% women in this study expressed an inclination for outpatient treatment, and a formal structured interview and thematic analysis established that the overall convenience and feasibility

of the outpatient procedure, precluding hospital admission and time off work was highly valued by the women and outweighed the discomfort of the procedure [24].

4.2 Outpatient endometrial ablation

Heavy menstrual bleeding affects one in five premenopausal women and significantly impairs quality of life. There is evidence to offer endometrial ablation as a first line surgical option for the management of heavy menstrual bleeding. Hysteroscopy and endometrial biopsy should be performed prior to the procedure to rule out any organic pathology and after the procedure to rule out uterine perforation. Endometrial ablation in outpatient setting is associated with shorter hospital stay and quicker recovery. The development of newer (second generation) endometrial ablation techniques has empowered clinicians to set up a comprehensive outpatient service to treat heavy menstrual bleeding effectively without the need for general anaesthetic or conscious sedation. An observational study was performed in ladies with heavy menstrual bleeding who consented to have endometrial ablation in the outpatient setting under local anaesthetic. Once started, the ablation procedure did not have to be abandoned. Eighty-nine percent women went home immediately. Ninety percent expressed that they would have ambulatory hysteroscopic procedure if required in future. Endometrial ablation has conventionally been performed under general anaesthesia as a day case procedure. With new second-generation devices, which enable shorter treatment times, it has become more practical to perform the procedure in outpatient setting. Gynaecologists should continue to offer outpatient endometrial ablation to appropriately selected patients with abnormal uterine bleeding, with adequate counselling regarding possible pain and discomfort and alternative options [25].

Video 2 Novasure® Endometrial Ablation <https://youtu.be/I2NOI9xb1os>.

5. Conclusions

Hysteroscopy under direct vision can be considered as the gold standard for examination of the uterine cavity, bypassing the significant limitations and possible complications of blind procedures. Modern technological advancements have brought ambulatory hysteroscopy to a mainstay in modern gynaecological practice.

The “see & treat hysteroscopy”, has revolutionised the management of abnormal uterine bleeding in all age groups. It has reduced the distinction between diagnostic and operative procedure, introducing the concept of a one step procedure perfectly amalgamating the treatment side with the diagnostic work-up. The use of miniaturised mechanical instruments together with the use of small diameter scopes with working channels and continuous flow systems, has enabled “see & treat” hysteroscopy in the office setting [26].

Outpatient hysteroscopy with direct visualisation represents the optimal diagnostic modality for abnormal uterine bleeding in premenopausal and postmenopausal women as well as treatment option for heavy menstrual bleeding, endometrial polyp, submucosal fibroid type 0 to 2, intrauterine adhesions and uterine septum. It provides cavity assessment in patients with subfertility as well [27]. Most women believe that the overall convenience of the office based procedure outweighs the pain and discomfort experienced and opt for the office procedure if required in future [28]. Hysteroscopy is generally a safe procedure and the uncommon complications such as infection, uterine perforation and fluid overload can be minimised by training, meticulous technique and modern equipment [29, 30].

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Conflict of interest

The author declares no conflict of interest.

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