

**OFFICE HYSTEROSCOPY VERSUS
TRANSVAGINAL ULTRASOUND IN THE
EVALUATION OF ABNORMAL UTERINE
BLEEDING IN PREMENOPAUSAL PERIOD**

Thesis

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ABSTRACT

Objectives: This study was done as a comparative study of the accuracy of T.V.S. and office hysteroscopy in evaluation of the uterine cavity in cases of abnormal uterine bleeding in premenopausal period.

Patients and methods: The study was included to 30 patients complaining of abnormal uterine bleeding in the age group between 36 -50 years old attending the gynaecology outpatient clinic in Kasr El-Aini Hospital, Cairo University in the period from February to August 2011. All patients were subjected to careful history, complete general, abdominal and vaginal examination and routine investigations. Then T.V.S. and office hysteroscopy was done.

Results: 12 cases (40%) had a normal uterine cavity by T.V.S., 7 cases (23.3%) had fibroid, 5 cases (16.7%) had an endometrial polyp, 2 cases (6.7%) had cervical polyp, 3 cases (10%) adenomyosis and 2 cases hyperplasia. While by office hysteroscopy, 12 cases (40%) was normal, 5 cases (16.7%) had fibroid, 8 cases (26.7%) had endometrial polyp, 1 case had (3.3%) cervical polyp, 2 cases (6.7%) hyperplasia and 2 cases picture of endometrities.

Conclusion: Office hysteroscopy offers an accurate method to investigate abnormal uterine bleeding and has an excellent guide for localization of pathology with high sensitivity and specificity in diagnosing polyp than T.V.S. while T.V.S. can be used as routine first step diagnostic technic.

Key words: T.V.S., Office hysteroscopy, Abnormal uterine bleeding.

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List of Abbreviations

CO2	Carbon dioxide
CVS	Cardiovascular system disease
Cx.	Cervical
DM	Diabeties melitus
End.	Endometrial
Exam	Examination
G0	Grade zero
G1	Grade one
G2	Grade two
HSG	Hysterosalpingography
HTN	Hypertention
No	Number
NPV	Negative predective value
PID	Pelvic inflamatory disease
PPV	Positive predective value
STDs	Sexually transmitted diseases
T V S	Transvaginal sonography
U/S	Ultrasound
UK	United kingdome

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Introduction

Up to 33% of women referred to gynaecological outpatient clinics have abnormal uterine bleeding and this proportion rises to 69% in a peri- or postmenopausal group (*Mencaglia et al., 1987*). Local causes include fibroids, endometrial polyps, chronic pelvic inflammatory disease, cervical polyps, atrophic vaginitis, endometrial carcinoma and cervical carcinoma.

Dilation and curettage under general anaesthesia used to be considered the gold standard for the investigation of abnormal uterine bleeding, (*Word, Wideman, 1958*) but it has been shown to be diagnostically inaccurate. *Grimes (Grimes, 1982)* concluded that dilation and curettage should not be the primary procedure for sampling the endometrium. *Stock and Kanbur (Stock and Kanbur, 1975)* reported that in 60% of patients who underwent dilation and curettage, less than half of the uterine cavity was curetted. *Stovall et al., (1989)* found that 15% of endometrial carcinomas were missed by dilation and curettage. False negative rates for the detection of pathology at dilation and curettage have been shown to be between 2% and 10% in other studies (*Grimes, 1982*). Although considered a routine, minor procedure, up to 5 per 1000 women proceed unexpectedly to a major operation as a result of complications arising from a dilation and curettage (*Grimes, 1982*).

Alternative procedures are available for sampling and/or visualising the endometrial cavity. These vary from endometrial biopsy, with or without vaginal ultrasound in an outpatient clinic at the time of initial consultation, outpatient hysteroscopy in a special clinic, or inpatient admission for hysteroscopy and curettage. The predictive value of hysteroscopy in the investigation of abnormal bleeding has been well



documented by several authors *De-Jong, et al., (1990) & Downes, (1993)* and it is considered by many to be the current gold standard investigation of choice. Recently, studies in the diagnostic value of transvaginal sonography in the evaluation of endometrial pathology have been published, claiming good results in appropriately trained hands (*Taipale et al., Cicinelli, 1995, Georgiev et al., 1994*). Some studies have suggested transvaginal sonography alone to have 100% accuracy of detecting malignancy in post-menopausal women *Pekka et al., (1994)*, but *Dorum et al., (1993)*, found that transvaginal ultrasound alone, using a cut off for normal of 5 mm, missed 6% of carcinomas.

Polyps and submucous fibroids can commonly be detected by transvaginal ultrasound (*Fleisher et al., 1988*).

Since the beginning of the 1980s, hysteroscopy has proved to be a powerful diagnostic tool for visualizing the cervical canal and the uterine cavity. As an operative tool, it yields better results than dilation and curettage or other blind procedures, it can also be considered as an excellent surgical aid in the treatment of endouterine pathologies (*Gimpelson-Rappold et al., 1988*).

However, the two procedures, diagnostic and operative, have long been considered separate entities, as they require different instruments and a different approach to the patient (*Bettocchi-Ceci et al., 2002*).

Diagnostic procedures are based on the examination of the cervix and uterine cavity through the scope, the reliability of the diagnosis is related to the physician s experience and is therefore extremely variable.



Office hysteroscopy offers several advantages over present methods of diagnosis and it has developed into an easy, safe, quick, and effective method of intrauterine evaluation that provides immediate results, offers the capacity of direct targeted biopsies of suspicious focal lesions, and offers the direct treatment of some intrauterine condition with a high detection rate for intrauterine pathology without need for cervical dilation or anasthesia ,so it has been considered as being the gold standard for the investigation of the uterine cavity (*Valle, 1999*).



Aim of the Work

To compare office hysteroscopy with transvaginal ultrasonography for evaluation of intrauterine cavity in patients with abnormal uterine bleeding in premenopausal period.

Menstrual Cycle

The menstrual cycle is a series of physiological changes that can occur in fertile females.

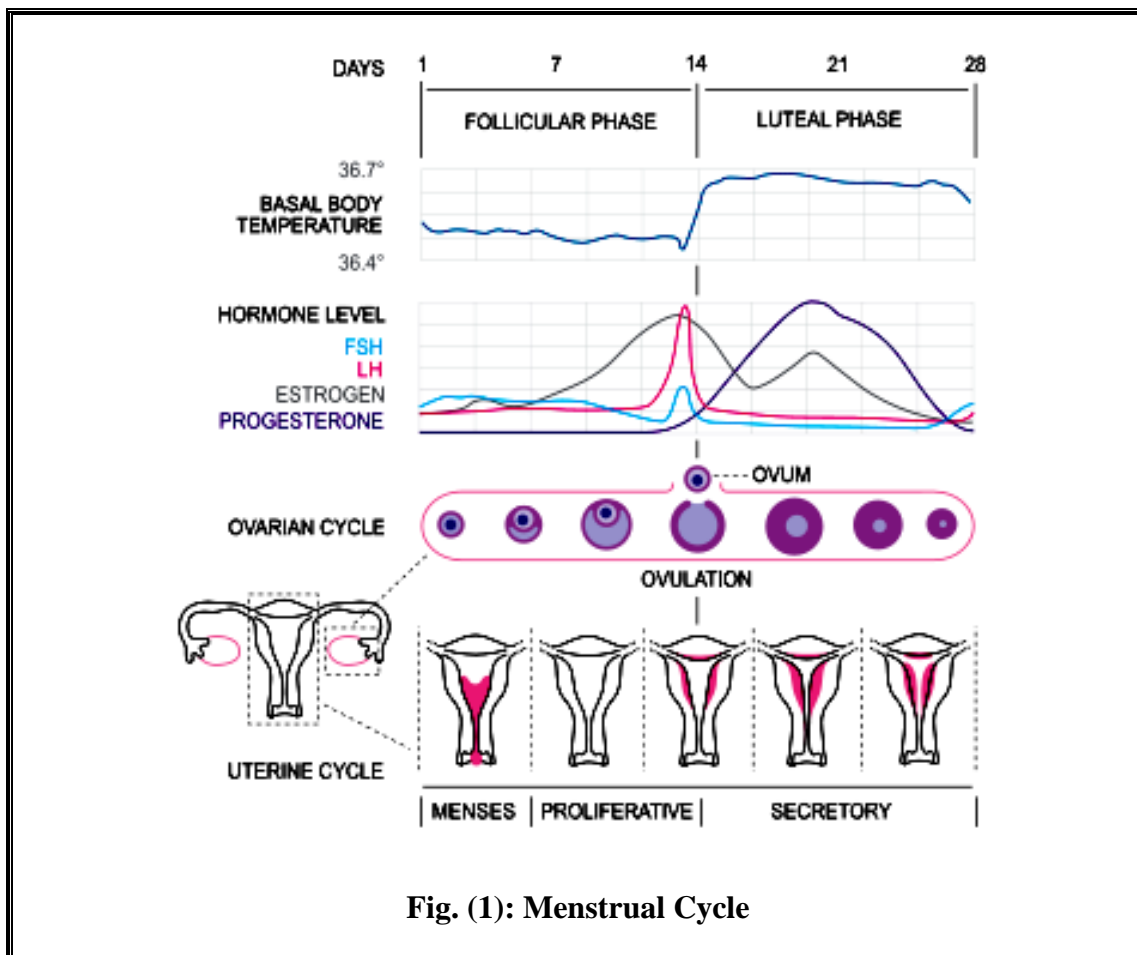


Fig. (1): Menstrual Cycle

The menstrual cycle, under the control of the endocrine system, is necessary for reproduction. It is commonly divided into three phases: the follicular phase, ovulation, and the luteal phase; although some sources use a different set of phases: menstruation, proliferative phase, and secretory phase (*Anderson et al., 2003*). The length of each phase varies from woman to woman and cycle to cycle, though the average menstrual cycle is 28 days. Menstrual cycles are counted from the first day of

menstrual bleeding. Hormonal contraception interferes with the normal hormonal changes with the aim of preventing reproduction.

Stimulated by gradually increasing amounts of estrogen in the follicular phase, discharges of blood (menses) slow then stop, and the lining of the uterus thickens. Follicles in the ovary begin developing under the influence of a complex interplay of hormones, and after several days one or occasionally two become dominant (non-dominant follicles atrophy). Approximately mid-cycle, 24-36 hours after the Luteinizing Hormone (LH) surges, the dominant follicle releases an ovum, or egg in an event called ovulation. After ovulation, the egg only lives for 24 hours or less without fertilization while the remains of the dominant follicle in the ovary become a corpus luteum; this body has a primary function of producing large amounts of progesterone. Under the influence of progesterone, the endometrium (uterine lining) changes to prepare for potential implantation of an embryo to establish a pregnancy. If implantation does not occur within approximately two weeks, the corpus luteum will involute, causing sharp drops in levels of both progesterone and estrogen. These hormonal drop cause the uterus to shed its lining and egg in a process termed menstruation.

In the menstrual cycle, changes occur in the female reproductive system as well as other systems (which lead to breast tenderness or mood changes, for example). A woman's first menstruation is termed menarche, and occurs typically around age 12. The end of a woman's reproductive phase is called the menopause, which commonly occurs somewhere between the ages of 45 and 55.

Terminology

The menarche is one of the later stages of puberty in girls. The average age of menarche in humans is 12 years, but is normal anywhere between ages 8 and 16. Factors such as heredity, diet and overall health can accelerate or delay menarche. The cessation of menstrual cycles at the end of a woman's reproductive period is termed menopause. The average age of menopause in women is 52 years in industrialized countries such as the UK, with anywhere between 45 and 55 being common. Menopause before age 45 is considered premature in industrialized countries (*Magnusson, 1978*). The age of menopause is largely a result of genetics; however, illnesses, certain surgeries, or medical treatments may cause menopause to occur earlier (*National Women's Health Information Center, 2005*).

The length of a woman's menstrual cycle will typically vary, with some shorter cycles and some longer cycles. A woman who experiences variations of less than eight days between her longest cycles and shortest cycles is considered to have regular menstrual cycles. It is unusual for a woman to experience cycle length variations of less than four days. Length variation between eight and 20 days is considered as moderately irregular cycles. Variation of 21 days or more between a woman's shortest and longest cycle lengths is considered very irregular.

Phases:

The menstrual cycle can be divided into several different phases. The average length of each phase is shown below; the first three are related to changes in the lining of the uterus whereas the final three are related to processes occurring in the ovary: