Saline Infusion Sonohysterography, Office Hysteroscopy , and Transvaginal Ultrasonography in Evaluation of Abnormal Uterine Bleeding in Premenopausal And Postmenopausal Women

Thesis

Submitted for the partial fulfillment of master degree
in Obstetrics and Gynecology

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Ain Shams University
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2010

Acknowledgement

First and above all, my deepest gratitude and thanks to **God** *for achieving any work in my life.*

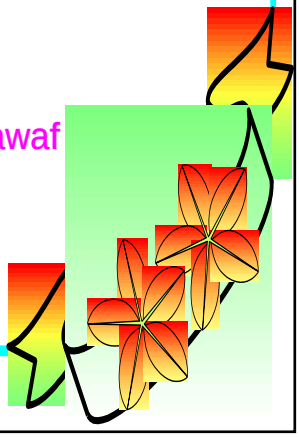
Words stand short when coming to express my deep gratitude and great thanks to **Prof. Dr. Sobhi Abou Louz** *Professor of Obstetrics and Gynecology, Faculty of Medicine Ain Shams University for his continuous encouragement, sincere advice, and co-operation in all steps of this work*

I am deeply grateful to **Dr. Ahmed Khairy Maklad** *Assistant Professor of Obstetrics and Gynecology, Faculty of Medicine Ain Shams University, who devoted his time, effort and experience to facilitate the production of this work.*

I would like to express my great thanks to **Dr. Ihab Fouad Serag El-Din Allam** *Assistant Professor of Obstetrics and Gynecology Faculty of Medicine, Ain Shams University for the tremendous effort he has done in the meticulous revision of this work.*

I am also delegated to express my deep gratitude and thanks to all my dear professors, my colleagues and my family.

Mohamed Elsayed Elsawaf



List of Abbreviations

C.S.	:	Cesarean section
CRE	:	Corticopin –releasing factor
EDC	:	Estimated date of confinement
FHR	:	Heat rate
IL	:	Interluekin.
ISMP	:	Institute for safe medication practices
M hz	:	Mega hertz .
mcg	:	Micrograms.
MIU	:	Milli international unit.
MMP	:	Matrix metalloproteinase
PG	:	Prostaglandins
PROM	:	Premature rupture of membranes
PTD	:	Preterm delivery
T.V.S	:	Transvaginal ultrasound.
TNF	:	Tumor necrosis factor

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Introduction

Abnormal uterine bleeding is frequently caused by pathologic processes that involve the endometrium and the myometrium until recently, evaluation of this problem places paramount importance on the exclusion of endometrial carcinoma, although a malignancy is found in less than 10% of the time. ***(Robert et al.,2000)***

Routine office endometrial biopsy and transvaginal ultrasonography performed to evaluate double- layer thickness of the endometrium were the only tests available for work-up of patient with postmenopausal bleeding and dysfunctional uterine bleeding, these procedures were often inadequate for evaluation because approximately 50% of cases of abnormal uterine bleeding are caused by focal lesion such as polyps, submucosal fibroids, and focal endometrial hyperplasia**. (*Patricia et al., 2002)***

These lesions are underdiagnosed at transvaginal ultrasonography because of limitation of the double-layer thickness evaluation, and in endometrial biopsy because of sampling error, office hysteroscopy significantly increase the sensitivity for detection of sessile and pedunculated intraluminal masses, however, the most common finding include atrophic and proliferative changes in such patient.***(Bree et al., 2000).***

For these reasons, numerous studies has been done found that ultrasonography technique in which endometrial

cavity is distended with saline, allows evaluation of the single layer of the endometrial lining and reliably distinguish focal from diffuse endometrial pathologic conditions, focal lesion are defined as lesion occupying less than 25% of the endometrial surface area , and diffuse lesions involve a larger percentage of the endometrial surface area ***(Valenzano et al., 2006***).

Sonohysterography enables triage of symptomatic postmenopausal patient to the appropriate means of endometrial sampling, in premenopausal patient population, Sonohysterography is a valuable tool for assessing endometrial cavity in patient with dysfunctional uterine bleeding, recurrent pregnancy loss, and retained products of conception, in patient with focal endometrial abnormalities, the biopsy must be performed with hysterscopic assistance to obtaine representative tissue for diagnosis, the finding at Sonohysterography determine weather a blind biopsy, hysterscopically guided biopsy, or hysterscopically guided dilatation and curettage is the appropriate diagnostic procedure ***(Psarija et al., 2004)***

Sonohysterography is easily performed, well tolerated, and a cost effective means of directing the work-up for patient with pre- and postmenopausal bleeding, in premenopausal patient Sonohysterography is preferably performed during the early proliferative phase (day 4-6) of the patient menstrual cycle, when the endometium is at its thinnest, in woman with irregular bleeding Sonohysterography is well performed after

cessation of bleeding never performed in the secreatory phase. ***(Sohaey et al.,1999)***.

In this study, we compare Sonohysterography, in the exploration of the uterine cavity, with classical transvaginal Sonography, and office hysterography.

Aim of the work

Prospective observational study To compare saline infusion sonohysterography, with hysterscopy, and transvaginal ultrasonography as an investigative modality in abnormal uterine bleeding in pre. and postmenopausal patient.

Historical Background

Hysteroscopy evolved over the last two centuries the early large, crude optical light conducting tubes have been replaced by small diameter endoscopes using cold light fiber optic technology .these microhysteroscopes can be rigid or flexible and provide high-resolution ,high-quality video images .the use of outer sheaths with additional instillation ports ,enables the continuous flow of distention media ,which facilitate the use of finally engineered surgical instrument and energy sources that can be employed down tiny operating channels.

History of the Procedure

The development of hysteroscopy is rooted in the work of **Pantaleoni**, who first reported uterine endoscopy in 1869 ***(Marlow, 1995)***. However, at that time, instrumentation was elementary, and expansion of the uterine cavity was insufficient. In 1925, **Rubin** first used CO_2 to distend the uterus **(Marlow, 1995).** Around the same time, **Gauss** was experimenting with the use of fluids to achieve uterine expansion. ***(Marlow, 1995)***.

Hysteroscopy did not become popular until the 1970s, when technology afforded more practical and usable instruments than before .The use of liquid distention media became routine by the 1980s, and many new hysteroscopic procedures, including endometrial ablation, were developed. ***(Marlow, 1995)***.

Initially used by urologists for transurethral resection of the prostate, the resectoscope was modified for hysteroscopic procedures, allowing for resection of intrauterine pathology with monopolar cautery. By the mid-1980s, hysteroscopic procedures had nearly replaced dilation and curettage (D&C) for diagnosing intrauterine pathology. ***(Jansen, 2000).***

Over the past few decades, refinements in optic and fiberoptic technology and inventions of new surgical accessories have dramatically improved visual resolution and surgical techniques in hysteroscopy. Many hysteroscopic procedures have replaced old, invasive techniques. Now, as instruments become smaller than before, office hysteroscopy is replacing operating-room procedures. One of the most recent hysteroscopic procedures approved by the US Food and Drug Administration (FDA) is female sterilization (Essure, Conceptus, Incorporated, Mountain View, Calif), which can be performed in the gynecologist's office. Novel instruments and techniques continue to emerge, and the prospects for improvement seem unlimited***.(John2006)***

Equipment

1-Hysteroscopes

The telescope consists of 3 parts: the eyepiece, the barrel, and the objective lens. The focal length and angle of the distal tip of the instrument are important for visualization (as are the fiberoptics of the light source). Angle options include 0°, 12°, 15°, 25°, 30°, and 70°. A 0° hysteroscope provides a panoramic view, whereas an angled one might improve the view of the ostia in an abnormally shaped cavity.

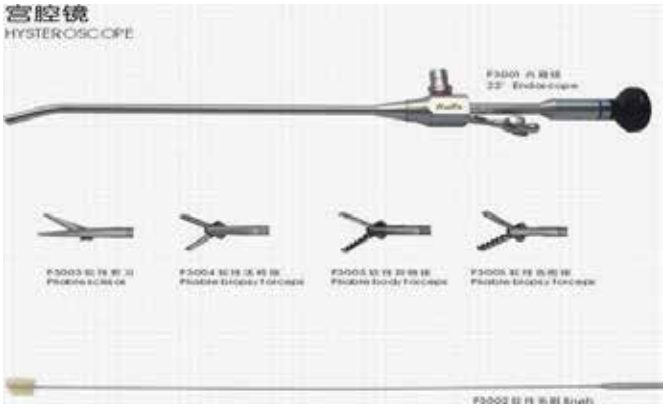

Fig.(1) Hysteroscope

Hysteroscopes are available in different styles, including rigid and flexible(used most commonly in clinical settings) hysteroscopes, contact hysteroscopes, and microhysteroscopes.

The diameter of each instrument varies and is an important consideration. The requirement of a sheath for input-outflow of distention media increases the size of the hysteroscope. **(*John2006).***

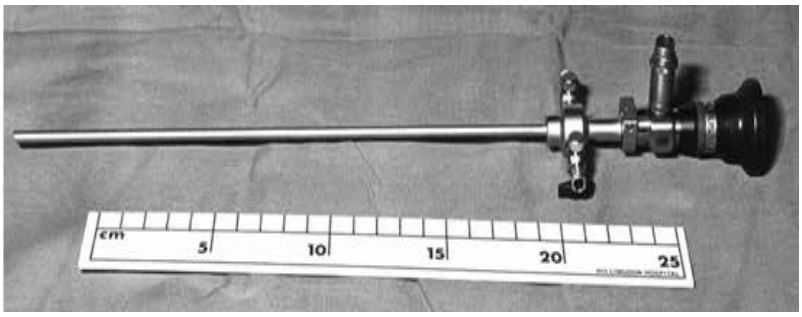

Fig.(2) Rigid hysteroscope

2-Rigid hysteroscope

Rigid hysteroscopes are the most commonly used instruments their wide range of diameters allows for in-office and complex operating-room procedures of the narrow options (3-5 mm in diameter), the 4-mm scope offers the sharpest and clearest view. It accommodates surgical instruments but is small enough to require minimal cervical dilation. In addition, patients tolerate this instrument well with only paracervical block anesthesia. ***(John2006)***.

Rigid scopes larger than 5 mm in diameter (commonly 8-10 mm) require increased cervical dilation for insertion. Therefore, they are most frequently used in the operating room with intravenous (IV) sedation or general anesthesia. Large instruments include an outer sheath to introduce and remove media and to provide ports to accommodate large and varied surgical instruments***. (John2006)***

3-Flexible hysteroscope

The flexible hysteroscope is most commonly used for office hysteroscopy. It is notable for its flexibility, with a tip that deflects over a range of 120-160°. Its most appropriate use is to accommodate the irregularly shaped uterus and to navigate around intrauterine lesions. It is also used for diagnostic and operative procedures. During insertion, the flexible contour accommodates to the cervix more easily than does a rigid scope of a similarly small diameter. The view is often described as having a ground-glass quality, which is markedly less desirable than the view obtained with rigid scopes ***(Corfman, 1988).*** New, digitally enhanced scopes improve image quality.