Ethical Practices by Nurses in Maternal and Child Health Centers in Selected Rural Areas- in Itay-Elbaroud City

Thesis

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Amany Ibrahim Ali Kamar

Dedication

This work is dedicated to the most important

Persons in my life......

***To** My Mother, My Father, My Husband,*

*My Kids and All My Family Members **for their:***

Effort,

Encouragement,

Cooperation

&

Support

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INTRODUCTION

IVF is an expensive treatment but results in a successful outcome in only a third of treatment cycles **(Bouwmans et al., 15 2008).**Implantation` failure could be due to a variety of reasons, including embryo quality and uterine receptivity, but remains unexplained in many cases **(Margaliothet al.,2006).**

The presence of uterine pathology may negatively affect the chance of implantation **(Cenksoy et al., 2013).**The prevalence of unsuspected uterine pathology in asymptomatic women with implantation failure has been reported to be as high as 50% **(Sugihara et al., 2010).**

Therefore, one of the common investigations proposed for women undergoing IVF treatment is to evaluate the uterine cavity via hysteroscopy **(De Placido et al., 2007).**

Hysteroscopy is the gold standard test for assessing the uterine cavity **(Pundir and El Toukhy, 2010)**. It is generally performed as a definitive diagnostic tool to evaluate abnormal findings on hysterosalpingogram or saline hysterosonography performed during the course of investigation of subfertile women **(Romaet al., 2004).**

Hysteroscopy not only provides accurate visual assessment of the uterine cavity, but also provides a chance to treat any pathology detected during the examination.The availability of hysteroscopes with smaller diameter has made the use of outpatient or office hysteroscopy feasible as a routine examination **(De Placido et al., 2007**).

Currently, there is evidence that performing hysteroscopy before starting IVF treatment could increase the chance of pregnancy in the subsequent IVF cycle in women who had one or more failed IVF cycles **(Bosteels et al., 2010; El-Toukhy et al., 2008).**

However, recommendations regarding the efficacy of routine use of hysteroscopy prior to starting the first IVF treatment cycle are lacking **(Amirova, A.F., Aliyeva, F.K., 2009)**

This study is sought to systematically review and summarize existing evidence related to the impact of routine hysteroscopy prior to starting the first IVF cycle on treatment outcome.

AIM OF THE WORK

Aim of this work is to evaluate the value of routine hysteroscopy prior to first intra cytoplasmic sperm injection cycle in successful implantation and occurrence of pregnancy.

HYSTEROSCOPY

Although operative hysteroscopy has progressively been accepted for the treatment of intrauterine pathologies, diagnostic hysteroscopy is still not widely and routinely used. Whereas almost all urologists utilize office cystoscopy to evaluate bladder pathology, it is estimated that less than 20% of gynecologists utilize office hysteroscopy to evaluate uterine pathology (**Isaacson, 2002).**

Type of diagnostic hysteroscopy:

1- Conventional hysteroscopy: It is the hysteroscopy in which the procedure is performedwith an instrument of 5.0 mm total diameter and with CO2 or normal saline as a distention medium and the insertion of the hysteroscope is facilitated by the use of a speculum and a tenaculum. It was the standard hysteroscopy for decades **(Campo R. and Molinas CR,2007).**

2- Office hysteroscopy(vaginoscopic or no-touch technique) It was developed by Bettocchiand Selvaggi in 1995 to reduce patients' pain anddiscomfort. **(Bettocchi and Selvaggi, 1997).** This technique avoids the need to introduce a vaginal speculum to visualize the cervix and a cervical tenaculum to grasp the cervix. The vagina can be distended by introducing the watery distention medium through the hysteroscope placed in the lower vagina,,the telescope is then driven to the posterior fornix, the external uterine orifice (EUO). When the EUO is visible, the scope is introduced into the cervical canal, and after distending it, the scope is carefully moved forward to the internal uterine orifice (IUO) and then into the uterine cavity with the least possible trauma**(Bettocchi et al., 2009).**

The Office Diagnostic Hysteroscopy:

In order to propose the systematic use of diagnostic hysteroscopy and toavoid the still well established delay in indication, it is mandatory to perform the technique in the office, ideally at the same time as transvaginal sonography (TVS). The most important challenge for the office approach is to be able to perform the procedure with an acceptable patient compliance. This should not be underestimated, since many patients still prefer the inpatient approach, believing that it will be pain-free **(Kremer et al., 2000)**. Several alternatives have been proposed for pain reduction during conventional office diagnostic hysteroscopy, but the results are inconclusive. **(Davies et al., 1997; De Angelis et al.b,2003)**.

The scientific evidence gathered over the last years and the major technical improvements in the manufacturing of high-quality small-bored scopes (mini-hysteroscopes) have provided an answer to the question of how diagnostic hysteroscopy should be implemented successfully in an office environment **(Nagele et al., 1996; Shankar et al., 2004) (Table 1).**

Instruments for office diagnostic hysteroscopy:

1- Hysteroscope:

While the diagnostic hysteroscopes used in the past had a total outer diameter of 5.0 mm, recent technical advances have allowed miniaturizing the instruments without compromising the quality of visualization. Today, two systems are suitable for performing hysteroscopy in the office:

1- The first system consists of a 2.0 mm 30° forward-oblique rigid telescope, which fits, in a single-flow examination sheath, leading to aninstrument with a total outer diameter of 2.8 mm **(Fig. 1).**

2- The second system consists of a 2.9 mm 30° forward-oblique rigid telescope, assembled in a single-flow diagnostic sheath for a total instrument diameter of 3.7 mm **(Fig.1)(Endoworld, 2010)**.

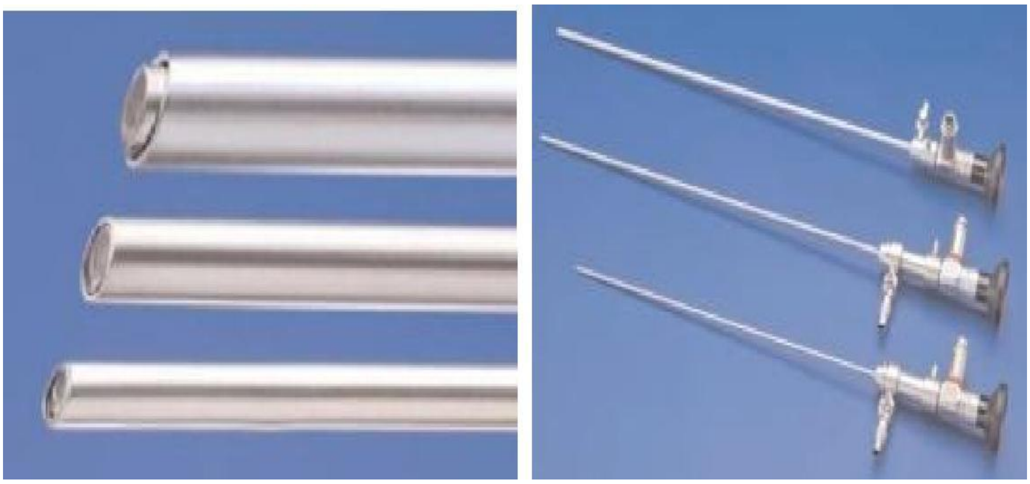

Fig. 1: Comparison of diagnostic hysteroscopes of different diameter **(Endoworld, 2010)**.

Table 1: Diagnostic office hysteroscopy instrumentation **(Endoworld, 2010)**

30° rod lens optic	**2.0 mm**	**2.9 mm**
Diagnostic single-flow sheath	**2.8 mm**	**3.7 mm**
Operative single-flow sheath	**3.6 mm**	**4.3 mm**
Operative continuous-flow sheath	**4.2 mm**	**5.0 mm**
Additional instruments and maneuvers		
Vaginal Speculum	**Not required**	
Tenaculum	**Not required**	
Analgesia / Anesthesia	**Not required**	
Distention medium: low viscosity fluids (e.g. saline) with pressure cuff between 80 and 120 mmHg		

Both telescopes can be inserted in a single- or double-flow operative sheet to transform purely diagnostic procedures to operative procedures. The total maximal instrument diameter increases for the 2.0 mm optic to 4.2 mm and for the 2.9 mm optic to 5.0 mm. In contrary to the diagnostic sheath the operative ones have an oval shape to reduce the instrument diameter as much as possible **(Fig. 2).** The operative channel has an access for 5 Fr instruments, either mechanical (e.g. crocodile grasping forceps, spoon and punch biopsy forceps, sharp and blunt scissors**, (Fig. 3)** or electrical (e.g. bipolar needle, bipolar coagulation probe, **(Fig. 3).** This allows performing operative procedures in the office, such as visual guided biopsy, removal of small polyps, myomas or lost intrauterine devices (IUDs), and lysis of simple adhesions. The same instrumentation is used to perform the treatment of Asherman syndrome and the correction of congenital anomalies, but in those cases some form of pain relief is necessary **(Endoworld, 2010)**.

Fig.2: Operative office hysteroscopy **(Endoworld, 2010).**

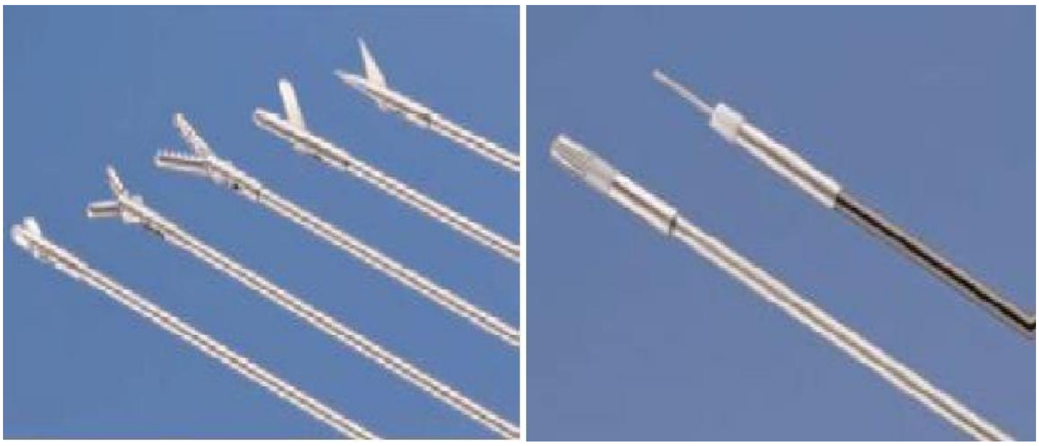

Fig.3: Mechanical and Electrical instruments for operative officehysteroscopy **(Endoworld, 2010)**

2. Distention media

Since a good distention of the uterine cavity is required for performing hysteroscopy, the distention medium and the system to deliver it under certain pressure and flow must be considered. For diagnostic hysteroscopy, either low-viscosity fluids with electrolytes (e.g. saline, Ringer's lactate, 5% glucose) or carbon dioxide (CO2) can be used. To control pressure and flow, a simple gravity fall system, a pressure cuff, or an electronic suction/irrigation pump **(Fig. 4)** can be used. As a result of the differences in refraction index, fluid and gaseous distention media lead to different optical conditions.

CO2 is the most common gaseous distention medium used for hysteroscopy. The advantages of this natural gas are the good optical quality and, as a dry medium, its facility for use in an office environment. However, it must be supplied through a special pressure/flow-controlled unit to eliminate the danger of gas embolism, **(Lindemann et al., 1976)** it is limited to diagnostic procedures, and the current scientific evidence indicates that CO2 is more painful and irritating than a fluid distention medium**(Nagele et al., 1996).**

Mainly for the last reason, it is rapidly being replaced by fluid distention medium and is no longer used in many centers. The advantages of fluids lie in their simplicity, better patient compliance, and the excellent visualization capacity due to the rinsing and the hydroflotation (i.e. lesions floating in the watery low-pressure environment) effects. There is no blind phase at entering the cavity and no irritation of the peritoneum when the fluid enters through the fallopian tubes into the abdominal cavity.

Fig.4: Electronic suction/irrigation pump**(Endoworld, 2010).**

For outpatient diagnostic hysteroscopy, an ionic, isotonic solution such as Ringer's lactate with a pressure cuff system is preferred owing to its cost effectiveness and comfortable handling. The pressure cuff is mostly preset at a pressure between 80 and 120 mmHg, bearing in mind that the aim is to use the lowest-needed pressure to distend the uterine cavity correctly. **(Endoworld, 2010).**

3- <u>Light source</u>

In 1960 Karl Storz discovered that it was possible to transmit light with fiberoptic light cables. This discovery marked the birth of cold light endoscopy. From a light source outside the body, light is transmitted via afiberoptic light cable through an endoscope to the examination site. Onlyspecific and particularly powerful halogen or xenon light sources are used in today's cold light projectors **(Karl Storz manual)**.

4- <u>Video camera</u>

The use of a video camera is essential for diagnostic hysteroscopic procedures. It is very instructive when the patient and the nursing personnel can see the diagnostic process on the screen and it is indispensable for correct documentation of the findings. Also, for the surgeon, the use of a camera facilitates the performance of the examination in a comfortable position**(Karl Storz manual)**.

5- <u>Documentation system</u>

The digital documentation systems Advanced Image and Data Archiving (AIDA) provide convenient image, video and audio data archiving of the procedure for academic and legal purposes **(Campo R. and Molinas CR, 2007)**.

Special office all in one solution, the TELE PACK system Tele-pack is a comprehensive,multifunctional and compact documentation terminal that can be used as a compact system in the doctor's office, or as a secondary system in the operating room **(Fig. 5).** It consists of the following components:

- Input unit: inbuilt, high-quality membrane keyboard and text generator for entering patient data.
- Documentation: flexible, all-purpose Personal Computer Memory Card

International Association **(**PCMCIA) memory card for recording still images; easy transfer of data to AIDA and personal computer (PC).

- Camera control unit
- Illumination: HiLux high-performance light source.
- Image display: foldaway Liquid Crystal Display (LCD) color monitor

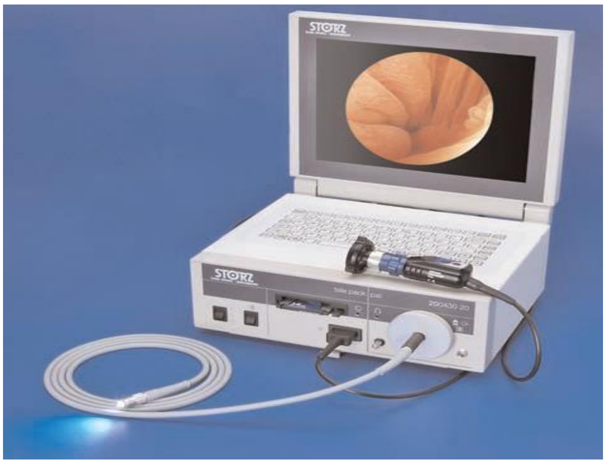

Fig.5: The TELE PACK system **(Campo R. and Molinas CR, 2007).**

Technique

The use of mini-hysteroscopes and saline as a distention medium still allows approaching the uterus either with the classic technique, in which a speculum is used to visualize the portio and the external cervical os, or with the vaginoscopical approach. Because a speculum impairs the liberal scope movement, frequently leading to the necessity of using a tenaculum, we have adopted the vagino-cervico-hysteroscopy technique since the early 1990s.

The examination is started with a TVS to evaluate uterus characteristics. A vaginal disinfection with a non-irritating watery disinfection solution is performed without placing a speculum. The tip of the hysteroscope is positioned in the vaginal introit, slightly separating the labia with the fingers. The vagina is distended with the same medium used for the uterine cavity. In contrary to the distention of the uterine cavity, the distention of the vagina does not provoke pain, even if the technique is not correctly performed.

This approach requires a good knowledge of the physics and instrumentation as well as dexterity on the part of the operator (i.e. the correlation between what is seen on the screen and the actual position of the 30° fore-oblique scope). The scope is driven to the posterior fornix to readily visualize the portio, and slowly backwards to identify the external cervical os. When this is visible, the scope is introduced into the cervical canal and, after achieving its distention, the scope is carefully moved forward to the internal cervical os **(Fig. 6)** and then to the uterine cavity with the least-possible trauma.

The uterine cavity is systematically explored by rotating the 30° fore-oblique scope and, after identification of the anatomical landmarks (i.e. the tubal ostia), any anomaly in the fundus, the laterals, anterior, or posterior uterine walls **(Fig.6)** or in the right **(Fig.7a)** and left **(Fig.7b)** tubal ostium can be detected. At this stage it is crucially important to avoid lateral movements as much as possible to reduce patient discomfort to a minimum. Immediately after the hysteroscopy, a second TVS is performed, taking advantage of the intracavitary fluid for a contrast image of the uterus **(Campo R. and Molinas CR, 2007).**

Fig,6: Internal cervical os

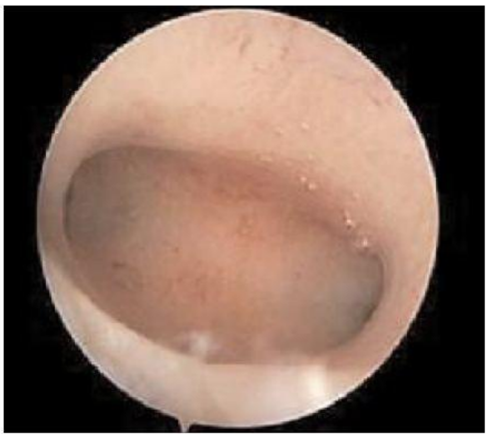

Fig. 7: Uterine cavity overview