Middle East Fertility Society Journal (2014) **19**, 239–242

Middle East Fertility Society

Middle East Fertility Society Journal

www.mefsjournal.org
www.sciencedirect.com

ORIGINAL ARTICLE

Role of office hysteroscopy in the evaluation of infertile women after controlled ovarian stimulation/intra uterine insemination failure

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Received 11 March 2013; accepted 9 May 2013
Available online 5 July 2013

KEYWORDS

Office hysteroscopy;
HSG;
Infertility;
IUI

Abstract *Objective:* To assess the role of office hysteroscopy (OH) in the evaluation of infertile women with normal HSG who fail to conceive after undergoing controlled ovarian stimulation/intrauterine insemination (COS/IUI).

Design: Prospective cohort study.

Materials and methods: The study included 141 patients with absent pelvic pathology on trans vaginal sonography and HSG and history of failed three or more trials of COS/IUI. Office hysteroscopy was then done and any detected intrauterine pathology was recorded.

Results: A total of 141 patients were examined by OH of which 26 patients proved to have uterine pathology, giving a false negative rate of (18.4%) of HSG. The overall agreement between HSG and OH was 81.6%.

Conclusion: Significant uterine pathology was proved in 18.4% infertile women in spite of normal HSG results. OH has a role in infertile women with no obvious abnormality on HSG before they proceed to more aggressive treatment.

1. Introduction

Abnormal uterine findings are encountered in about 50% of women with reproductive failure. These high percentages of benign abnormalities are thought to be associated with poor endometrial receptivity and necessitate evaluation of the uterine cavity. The assessment of intrauterine structure can be accomplished by several techniques, including ultrasonography, sonohysterography, hysterosalpingography (HSG), and hysteroscopy (1–4).

HSG has been acting as a first-line diagnostic test to evaluate both the uterine cavity and tubal patency. HSG is relatively easy to perform, is low cost, and can be completed as an outpatient procedure. However, several studies have shown unsatisfactory results of HSG in the detection of intrauterine abnormalities (3,5).

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Peer review under responsibility of Middle East Fertility Society.

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http://dx.doi.org/10.1016/j.mefs.2013.05.008

In addition, the risk of reproductive organs' exposure to ionizing radiation cannot be guaranteed (6).

Cases of spontaneous pregnancy without tubal or uterine surgery have been noticed following HSG, which suggests a therapeutic effect of the HSG procedure. This could be explained by improved patency of the fallopian tube due to flushing during the procedure (7). As HSG, is usually scheduled between the 7th and 12th day of the menstrual cycle (8), potential hazards of exposing spontaneous pregnancy to ionizing radiation are present.

Hysteroscopy is the gold standard procedure for uterine cavity exploration through direct visualization in patients with recurrent implantation failure (9). However, the World Health Organization (WHO) recommends HSG alone for the management of infertile women (10). Office hysteroscopy (OH) is only recommended by the WHO when clinical or complementary exams (ultrasound, HSG) suggest intrauterine abnormality (11) or after in vitro fertilization (IVF) failure (12).

There is a lack of high-quality guidelines for the treatment of infertile women with no obvious pelvic pathology and normal semen parameters; and management is often empirical. This involves few cycles of controlled ovarian stimulation which is often combined with intrauterine insemination (COS/IUI). IUI is less invasive, stressful or expensive than other assisted reproductive technologies (13).

If treatment fails, both clinicians and patients face clinical impasse. Further management options include either laparoscopy or progression to IVF (14).Some authors advised to directly proceed to IVF and considered laparoscopy as a waste of time (15). OH is associated with improved IVF/ET outcome when performed immediately before IVF/ET cycles (16).

The aim of this study was to assess the role of office hysteroscopy in infertile women with normal HSG who fail to conceive after undergoing COS/IUI.

2. Materials and methods

This study was conducted at Cytogenetic and Endoscopy unit, Zagazig University hospitals, Egypt, between September 2010 and November 2012. The study was approved by the local ethics committee. All patients who met the following criteria were included in the study: (1) Women with either primary or secondary infertility aged 20–37 years. (2) Normal baseline hormonal profile (Day2 FSH, LH, TSH, PRL). (3) No detectable pelvic pathology on TVS; done within the previous 6 months. (4) Normal HSG done within the previous 6 months, including patent both fallopian tubes, normal uterine cavity, normal spill of dye on delayed film suggesting absent pelvic adhesions. (5) History of received treatment in the form of three or more cycles of COS/IUI within the previous 12 months. Exclusion criteria included history of pelvic inflammatory disease, chronic pelvic pain, pelvic surgery and severe dysmenorrhea, dyspareunia, and patients with PCOs. Couples with moderate and severe male factor infertility were also excluded. Informed consent was obtained from all patients.

For all patients complete history taking and physical examination were done. For male partner, evaluation was also done and included medical history and clinical examination. Semen analysis included two separate samples with at least a 2-week interval and an interpretation according to WHO criteria (17).

143 infertile women who fulfilled the inclusion criteria were sent for hysteroscopy examination. A 2.9 mm 30° rigid telescope (Karl Storz, Germany) was used. The hysteroscopy procedures were carried out during the proliferative phase of the patients' menstrual cycle. No anesthesia was used for diagnostic purpose. Glycine 1.5% was used as distension medium.

With the patient in lithotomy position, bimanual pelvic examination was done. The cervix was exposed with vaginal speculum and the hysteroscopy was introduced through the cervix without dilatation. Upon access to the uterine cavity, the tubal ostia were identified and the endometrial surface was systematically inspected .The cervical canal was then viewed in its entire length during withdrawal of the hysteroscopy. The procedure was defined as complete (complete examination of the entire uterine cavity including both tubal ostia), or failed hysteroscopy when access into the uterine cavity was not possible.

3. Statistical analysis

All statistical analyses were performed using Statistical Package for Social Sciences for Windows 15.0 (SPSS; Chicago, IL, USA). Descriptive statistics are presented as numbers and percentages for qualitative data, mean and standard deviation for quantitative data. False-negative rate and overall agreement were used to demonstrate differences between both techniques i.e., HSG and OH.

4. Results

Total of 143 infertile women were sent for OH examination. The procedure was complete in 141 cases (98.6%) and failed in 2 cases (1.39%). The demographic data of the studied group are shown in Table 1.

The mean age of women included in the study was (25.2 ± 3.9), BMI (23.3 ± 3.2), and duration of infertility was (5.1 ± 3.4). 108 patients (76.5%) presented with primary infertility and 33 (23.4%) with secondary infertility.

Among the 141 successful OH procedures, 26 patients were diagnosed with evident of uterine cavity abnormalities. All these 141 women had normal HSG, giving a false-negative rate of (18.4%) for HSG. The overall agreement of both methods was (81.6%) Table 2.

The pathologic varieties which were diagnosed on OH examination included; intrauterine adhesions (IUA) (9 cases) followed by endometrial polyps (7 cases), submucous myoma (6 cases), endometrial hyperplasia (3 cases) and arcuate uterus (one case) as shown in Table 3.

5. Discussion

HSG and OH are two different modalities to evaluate the uterine cavity. The accuracy of both procedures to identify uterine

Table 1 Demographic data of the studied group.

Age (years) Mean ± SD	25.2 ± 3.9
BMI mean ± SD	23.3 ± 3.2
Duration of infertility (years) mean ± S	5.1 ± 3.4
Type of infertility (n. & %)	
Primary	108 (76.5%)
Secondary	33 (23.4%)