Assessment of the Prevalence of Uterine Anomalies by Hysteroscope in Women with Recurrent Miscarriage

Thesis

Submitted for Partial Fulfillment of Master Degree

In Obstetrics and Gynecology

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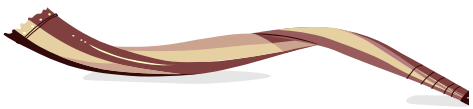

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List of Abbreviations

Abb.	Meaning
ACOG	American College of Obstetricians and Gynecologists
ART	Assisted reproductive technology
ASRM	American Society of Reproductive Medicine
AUB	Abnormal uterine bleeding
BMI	Body mass index
CD	Cluster of differentiation
CO_2	Carbon dioxide
CS	Cesarean section
D&C	Dilatation and curettage
DES	diethylstilbestrol
DNA	Deoxyribonucleic acid
DVT	Deep venous thrombosis
FSH	Follicular stimulating hormone
GA	General anesthesia
GIFT	Gamete intrafallopian transfer
GRIN	Grade index lens system
HCG	Human chorionic gonadotropin
HLA	Human leukocyte antigen
HRT	Hormone replacement therapy
HSG	Hysterosalpingography
ICSI	Intracytoplasmic sperm injection
IUDS	Intrauterine devices
IUI	Intrauterine insemination

Abb.	Meaning
IVF	In vitro Fertilization
IVF-ET	In vitro fertilization and embryo transfer
LAC	Lupus anticoagulant
LH	Leuteinizing hormone
LPD	Luteal phase defect
NVD	Normal vaginal delivery
PAI	Plasminogen activator inhibitor
PCOS	Polycystic ovary syndrome
PID	Pelvic inflammatory diseases
RAFS	Reproductive autoimmune failure syndrome
RCOG	Royal College of Obstetrics and Gynecology
RM	Recurrent miscarriage
RVF	Retroverted-retroflexed uterus
SUAS	Structural uterine abnormalities
THB	Targeted hysteroscopic biopsies
UAE	Uterine artry embolization
UK	United Kingdom
WHO	World Health Organization
ZEFT	Zygote intrafallopian transfer

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Protocol of Thesis
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Introduction

Miscarriage is the spontaneous loss of the conceptus before 20 weeks' gestation. In 10% of pregnancies, miscarriage is a clinically recognized event, and in another 20% of pregnancies, it is manifested only as a transient elevation of the level of human chorionic gonadotropin before or near menses **(Wilcox, Weinberg, O'Connor, et al, 1988).**

Recurrent miscarriage, defined as the loss of three or more consecutive pregnancies, occurs in approximately 1% of couples attempting to bear children **(Rai and Regan, 2006).**

Many experts consider two consecutive losses as sufficient for the diagnosis of recurrent miscarriage, because the recurrence rate is similar to that after three losses occur in up to 5% of reproductively active couples **(ACOG, 2000; ASRM, 2008) .**

Most experts recommend hysteroscopic resection of a uterine septum in women with recurrent Miscarriage **(Heinonen, 1997; Valli *and* Vaquero, 2004) .**

The true incidence of congenital uterine anomalies in the general population and among women with recurrent pregnancy lose is not known accurately. Although incidences of 0.16 to 10% have been reported, the overall data suggest an incidence of 1% in the general population and 3% in women with recurrent pregnancy lose and poor reproductive outcomes **(Raga et al, 1997; Byrne et al., 2000 ;Homer et al., 2000).**

The American Society for Reproductive Medicine classification of müllerian anomalies **(FertilSteril, 1988)**

Class I: Müllerian agenesis or hypoplasia

Class II: Unicornuate uterus

Class III: Didelphys uterus

Class IV: Bicornuate uterus

Class V: Septate uterus

Class VI: Arcuate uterus

Class VII: Diethylstilbestrol (DES)-exposed uterus

The septateuterus, It is the most common congenital anomaly of the uterus, comprising approximately 55% of all anomalies **(Troiano, 2003).**

Septate uteri have some of the poorest reproductive outcomes of müllerian duct anomalies. The spontaneous abortion rate is high, averaging approximately 65% of pregnancies in some studies **(Raga et al 1997; Salim et al, 2003), (Propst and Hill, 2000).**

Agenesis or hypoplasia of one of the müllerian ducts 20% of uterine anomalies. Spontaneous abortion rates in these women approach 51 % **(Troiano, 2003) and (Propst and Hill, 2000).**

Intrauterine trauma resulting from vigorous endometrial curettage or postabortal endometritis is a common instigator for the development of adhesions that has been associated with recurrent pregnancy lose , to decrease the volume of the uterine cavity, and may interfere with the normal placentation and lead to pregnancy loss. ltrauterine cavity abnormalities, such as leiomyomas and polyps, can contribute to pregnancy loss **(Manyondaetal, 2004).**

There are several hypotheses regarding how fibroids may be associated with recurrent pregnancy lose They may. partially obliterate or alter the contour of the intrauterine cavity. It may also provide a poorly vascularized endometrium for implantation or compromise placental development. Uterine fibroids and polyps may also act like an intrauterine device, causing subacute endometritis, and therefore, impair the migration of sperm, ovum, or embryo **(Liet al, 1999).**

Diagnostic hysteroscopy is a commonly performed gynecologic procedure to evaluate the endometrial cavity ***(Barbot et al., 1980).***

Diagnostic hysteroscopy is used to evaluate the endocervical canal, endometrial cavity, and tubal ostia. The procedure is often coupled with sight-directed biopsy or followed by endometrial curettage to evaluate for endometrial pathology ***(Makris et al., 2006).***

The following conditions can be evaluated with diagnostic hysteroscopy and further treated with operative hysteroscopic techniques. Indications for diagnostic hysteroscopy include:

- Abnormal premenopausal or postmenopausal uterine bleeding
- Removal of foreign body (intrauterine device)
- Confirmation of abnormal test findings (abnormal HSG or thickened endometrial lining on sonography)
- Suspected Müllerian anomalies

(Makris et al., 2006)

Aim of Work

To assess the prevalence of uterine anatomical abnormalities found by office diagnostic hysteroscopy in a population of patients experiencing two or more than two consecutive miscarriages.

Research Question:

In patient with recurrent miscarriage uterine anatomical abnormalities could be an important cause.

Research Hypothesis:

In recurrent miscarriage uterine anatomical abnormalities can be an important cause.

Clinical Use:

Correction of this anatomical abnormalities can improve pregnancy outcome .

Patient and Methods

• *Study Design*

This obsorvational study will be conducted at the Ain Shams university Early cancer detection unit in the one year period starting from May 2014.

Informed consent will be obtained from all patients after adequate explanation and ethical committee approval.

• *Sample Size Calculation*

Data from a recent similar study **(Souza et al., 2011)** showed that the risk of hysteroscopically-detectable uterine etiology (whether congenital anomaly or acquired disorder) of recurrent consecutive miscarriage was 33.3%. Calculation according to this result to reach the least statistically-acceptable figure produced a minimal sample size of 66 cases. Therefore, 120 women with two or more consecutive miscarriages are to be recruited in the current study.

Statistical Methods

Statistical analysis is to be performed using Microsoft® Excel® version 2010 and Statistical Package for Social Sciences (SPSS®) for Windows® version 15.0. Data are to be expressed as range, mean and standard deviation (for numeric variables), or number and percentage (for categorical variables). Difference between the two independent groups is to be estimated using independent student's t-test and mean difference with its 95% CI (for numeric variables) or chi-squared test and the risk ratio with its 95% CI (for categorical variables). Significance level is set at 0.05.

Population Of Study

One hundred and twenty patients with repeated miscarriages (Two or more pregnancy losses before 20 weeks).

A full history, examination and sonography assessment will be taken to ensure that patients confirm to the Inclusion and exclusion Criteria**.**

Inclusion Criteria

1. Normal complete Blood Count.
2. Normal Progesterone level in luteal phase