

Assessment of Tubal Patency after Laparoscopic Ovarian Drilling in Patients with PCOs

Thesis

*Submitted for the Partial Fulfillment for the Master Degree
in Obstetrics and Gynecology*

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2016**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة الآية (٣٢)



Acknowledgement

*Before all, Thanks to **Allah**, The Most Kind
and The Most Merciful.*

I would like to express my profound gratitude to **Prof. Dr. Magdy Mohamed Kamal**, Professor of Obstetrics and Gynecology, Faculty of Medicine- Ain Shams University, for his most valuable advices and support all through the whole work and for dedicating much of his precious time to accomplish this work. I really have the honor to complete this work under her generous supervision.

Also I'm deeply grateful to **Assist. Prof. Hosam Mohamed Hemeda**, Assistant Professor of Obstetrics and Gynecology, Faculty of Medicine- Ain Shams University for her valuable help, assistance, encouragement and supporting me through devoting her time to facilitate the production of this work.

My special thanks to **Prof. Dr. Mahmoud Osela**, for his assistant me in this work.

My special thanks to all my patients without them, this work could not have been completed.

Last but not least, I can't forget to thank all members of my **Family especially my husband**, for pushing me forward in every step in the journey of my life.

 **Wafa Saleh**

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List of Abbreviations

Abb.	Full term
17-OH	17 hydroxyprogesterone
ART	Assistant reproductive technique
CAT	Chlamydia antibody tests
CC	Clomiphene citrate
DHEAS	Dehydroepiandrosterone sulfate
DHEA-S	Dihydroepiandrosterone sulfate
DHT	Dihydro testosterone
DL	Diagnostic laparoscopy
DM2	Type 2 diabetes mellitus
DOR	Dimensioned ovarian reserve
FDA	Food drug administration
FFA	Free fatty acids
FSH	Follicular stimulating hormone
GDM	Gestational diabetes mellitus
HSG	Hysteron salpingogram
HyCoSy	Hysterosalpingo contrast sonography
IVF	In vitro fertilization
LH	Luteinizing hormone
LOD	Laparoscopic ovarian drilling
mLOD	Micro laparoscopic ovarian drilling
MS	Metabolic syndrome
NIH	National institutes of health

OHSS	Ovarian hyperstimulation syndrome
OI	Ovulation induction
OSCM	Oil soluble contrast medium
PCOS	Poly cystic ovary syndrome
PID	Pelvic inflammatory disease
POF	Premature ovarian failure
RCT	Recent clinical trial
SIS	Saline infusion sonography
STD	Sexually transmitted disease
THL	Trans vaginal hydrolaprosopy
TSH	Tnyriod stimulating hormone
VEGF	Vascular endothelial growth factor
WSCM	Water soluble contrast medium

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Assessment of Tubal Patency after Laparoscopic Ovarian Drilling in Patients with PCOs

Abstract

Background: Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in women and major cause of anovulatory infertility. PCOS patients can present a wide range of signs and symptoms, which make difficult the precise grading of the condition. Lifestyle modifications are considered first-line treatment for women with PCOS. Such changes include diet, exercise and weight loss. Pharmacologic treatments are reserved for so-called metabolic derangements, such as anovulation, hirsutism, and menstrual irregularities. **Aim:** The aim of this study is to assess tubal patency in patients with PCOs after laparoscopic ovarian drilling.

Patients and Methods: Type of study: Observational prospective study. Timing of this study started from June 2015 to March 2016.

This study included 50 women with PCOs attended the infertility outpatient clinic in the university hospital with previous history of laparoscopic ovarian drilling. **Results:** Laparoscopic ovarian drilling (LOD) has been used widely by gynecologists as an alternative surgical method for ovulation induction using gonadotropins for PCOS patients unresponsive to clomiphene, but there is a lack of consensus on effectiveness of this method. Apart from general complication that may occur during any laparoscopic surgery, peri-adenexal adhesion formation and premature ovarian failure are the two main potential complications of laparoscopic ovarian drilling. In the current study, Result of post-LOD HSG show that, 46% both tubes were patent, 32% one tube blocked and 22% both tubes blocked.

Keywords: PCOS: Polycystic ovary syndrome, LOD: laparoscopic ovarian drilling, HSG: histosalpingogram.

Introduction

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in women and major cause of anovulatory infertility. PCOS patients can present a wide range of signs and symptoms, which make difficult the precise grading of the condition **(De Leo et al., 2016)**. Diagnosis of PCOS is currently based on the criteria of the ESRHE/ASRM Rotterdam consensus meeting in 2003, which broadened the previous NIH classification of 1990 **(Zawadski et al., 1992)**. It based on at least two of the following features: oligo-anovulation, hyperandrogenism and polycystic ovaries by ultrasound. In 2006, the Androgen Excess Society (AES) set up a committee of experts to review all the data published on PCOS for the purpose of simplifying diagnosis **(Azziz et al., 2006)**. The AES criteria require clinical and/or biochemical hyperandrogenism simultaneously with oligo/anovulation and ultrasonographic evidence of polycystic ovaries **(De Leo et al., 2016)**.

Regarding pathophysiology, PCOS is a heterogeneous disorder characterized by ovulatory dysfunction, hyperandrogenism, and polycystic ovarian morphology. Its characteristic neuroendocrine features

include increased serum concentration of luteinizing hormone (LH), increased LH/FSH ratio, and increase in amplitude and frequency of pulsatile LH secretion **(Mobeen et al., 2016)**.

Diagnostic workup includes hormonal evaluation of androgen levels, clinical evaluation of hirsutism through Ferriman-Gallwey score and ultrasonographic examination of the number of antral follicles and ovarian volume. Insulin resistance should be evaluated by HOMA INDEX (product of fasting plasma insulin [mU/L] and glucose [mmol/L] concentrations divided by 22.5). Future diagnostic approaches could be ultrasonographic 3D evaluation of follicles and is under discussion the role of anti-müllerian hormone (AMH) **(Homburg et al., 2013)**.

Lifestyle modifications are considered first-line treatment for women with PCOS. Such changes include diet, exercise and weight loss. Pharmacologic treatments are reserved for so-called metabolic derangements, such as anovulation, hirsutism, and menstrual irregularities. First-line medical therapy usually consists of an oral contraceptive to induce regular menses. If symptoms such as hirsutism are not sufficiently alleviated, an androgen-blocking agent may be added. First-line treatment for

ovulation induction when fertility is desired is clomiphene citrate(**ACOG, 2009**).

Surgical management of polycystic ovarian syndrome (PCOS) is aimed mainly at restoring ovulation. Ovarian wedge resection has fallen out of favor because of postoperative adhesion formation and the successful introduction of ovulation-inducing medications (**Hecht Baldauff and Arslanian, 2015**).

Various laparoscopic methods, including electrocautery, laser drilling, and multiple biopsy, have been used with the goal of creating focal areas of damage in the ovarian cortex and stroma. According to the Society of Obstetricians and Gynaecologists of Canada (SOGC), laparoscopic ovarian drilling may be considered in women with clomiphene-resistant PCOS, especially in the presence of other laparoscopic indications (**Vause et al., 2010**). A small French study also suggested that surgical management via ovarian drilling with hydrolaparoscopy may be beneficial in cases of PCOS that are resistant to clomiphene citrate (**Poujade et al., 2011**).

LOD has been evaluated as an alternative approach to the medical treatment of PCO-related anovulatory infertility, because it is not associated with risk of multiple

pregnancy or ovarian hyperstimulation, and improves ovarian response to medical treatment. Nevertheless, two main drawbacks prevent LOD from being considered a primary approach to the treatment of POS: the risk inherent to any surgical procedure, and the risk of adhesion formation potentially interfering with fertility **(Strowitzki and Von Wolff, 2005)**.

Many trials have been designed to evaluate the rate of adhesions after LOD. However, most of them evaluated adhesion formation while performing a cesarean section or during second-look laparoscopies to investigate persisting infertility, whereas other trials involved small series of patients. As a result, currently, the incidence of postoperative adhesion formation ranges from 19% to 43% in some studies, and up to 82% in other studies, but such wide variation possibly reflects an inadequate study design. Variations in the surgical techniques can obviously affect the rate of adhesion formation, and the number of ovarian punctures is one such technical option to account for **(Mercorio et al., 2008)**.

Aim of the Work

The aim of this study is to assess tubal patancy in patients with PCOs after laparoscopic ovarian drilling.