

Sonohysterography versus hysterosalpingography and diagnostic laparoscopy in the evaluation of tubal factor in cases of female infertility

Thesis Submitted in fulfillment of MD. Degree in Obstetrics and gynecology by

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Abstract

Saline infusion sonohysterpography is an ultrasound monitored procedure used to detect abnormalities of the uterus and fallopian tubes and offers a safe alternative to the conventional hysterosalpingography. This study aims at the evaluation of advantages and accuracy of sonohysterpography by comparing its results to hysterosalpingography and laparoscopic chromotubation, in the diagnosis of tubal factor of female infertility.

(Key Words): Saline infusion sonohysterpography, hysterosalpingography, laparoscopic chromotubation, tubal factor of infertility.

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Table of Contents:

List of abbreviations.....	page 5
List of tables.....	page 7
List of figures.....	page 9
Introduction and aim of the work.....	page 12
Chapter 1: anatomy physiology and histology of the fallopian tube.....	page 15
Chapter2: Infertility: definition and causes.....	page 23
Chapter 3: Tubal factor of infertility.....	page 27
Causes of tubal factor of infertility.....	page 30
Pelvic inflammatory disease (P.I.D.).....	page 30
Pelvic tuberculosis.....	page 34
Endometriosis.....	page 36
Congenital malformations.....	page 41
Chapter 4: Investigations of tubal factor of infertility.....	page 42
1. Hysterosalpingography	page 43
Technique of hysterosalpingography.....	page 47
Normal hystrogram.....	page 50
Abnormalities of the tube by HSG.....	page 53
2. Saline sonohysterography	page 55
Indications.....	page 58
Fertility workup.....	page 58
Congenital anomalies.....	page 59
Masses and adhesions.....	page 60
Screening before In-Vitro Fertilization.....	page 60
Recurrent pregnancy loss.....	page 61
Other indications of saline infusion sonohysterography.....	page 62
Future directions.....	page 68

Table of contents

3. Diagnostic Laparoscopy	page 70
Contraindications.....	page 74
Patient risk factors.....	page 75
Lab studies.....	page 81
Imaging studies.....	page 83
General techniques for laparoscopy.....	page 85
Preoperative details.....	page 91
Intraoperative details.....	page 93
Postoperative details.....	page 95
Complications.....	page 97
Chapter 5: Patients and methods	page 106
Chapter 6: Results	page 117
Figures.....	page 136
Chapter7: Discussion	page 140
Summary.....	page 156
Conclusion.....	page 162
REFERENCES	page 164
Arabic summary	

List of abbreviations

A.R.T: assisted reproductive technologies

BBT: basal body temperature

BBT: Basal body temperature

BMI: body mass index

Ca-125: cancer associated antigen 125

CAT: Chlamydia trachomatis Ig G testing

CDC: centers for disease control and prevention

Cm: centimeter

CRP: C-reactive protein

CXR: chest radiograph

D.L: diagnostic laparoscopy.

DES: diethylstilbestrol

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ECG: electrocardiogram

ESR: erythrocyte sedimentation rate

HPF: high power field

hs-CRP: high sensitivity C-reactive protein

HSG: hysterosalpingography

I.V.F: vitro fertilization

IUD: intrauterine device

Kg: kilo gram

Lb: pound

LH: luteinizing hormone

Mm Hg: millimeter mercury

MRI: magnetic resonance imaging

NPV: negative predictive value

NSAID: non steroidal anti inflammatory drugs

PID: pelvic inflammatory disease

PMB: pre menstrual endometrial biopsy

PP14: placental protein 14

PPV: positive predictive value

SD: standard deviation

SHG: sonohysterography

SIN: Salpingitis isthmica nodosa

SIS: Saline infusion sonohysterography

STD: sexually transmitted disease

TVS: transvaginal sonography

WBC: white blood cell

List of tables:

-Table (1): The American fertility society revised classification of endometriosis.....	page 40
-Table (2): standard scale for pain.....	page 110
-Table (3): Age groups of the studied cases.....	page 118
-Table (4): Age Comparison between cases with primary and secondary infertility.....	page 120
-Table (5): classification of patients according to parity.....	page 120
-Table (6): Comparison of duration of infertility between cases with primary and secondary infertility.....	page 121
-Table (7): Classification of patients according to history of previous abortion.....	page 122
-Table (8): Demographic data of all cases.....	page 123
-Table (9): comparison between the results of sonohysterography and hysteroqram in relation to diagnostic laparoscopy in the assessment of tubal patency.....	page 124
-Table (10): Comparison between the results of sonohysterography and diagnostic laparoscopy in the assessment of tubal patency.....	page 125
-Table (11): Comparison between the results of hysteroqram and diagnostic laparoscopy in the assessment of tubal patency.....	page 126
-Table (12): comparison between the true results of sonohysterography and hysteroqram in relation to the results of diagnostic laparoscopy.....	page 127
-Table (13): characteristic lesions among the studied diagnostic techniques in cases with bilateral block.....	page 129

- Table (14): Distribution of characteristic lesions among the studied diagnostic techniques in cases with unilateral block.....page 130
- Table (15): Distribution of cases according to etiology and tubal patency or blockage as diagnosed by laparoscopy.....page 131
- Table (16): staging of cases with endometriosis according to the revised American fertility society.....page 131
- Table (17): Additional information retrieved during SHG and HSG.... page 133
- Table (18): comparison between sonohysterography and hysteroogram as regards the grade of pain according to standard scale.....page 135

List of figures

- Figure (1): Distribution of age groups in the studied cases..... page 119
- Figure (2): Mean age (years) comparison between primary and secondary infertility cases.....page 119
- Figure (3): Distribution of parity in the studied cases..... page 120
- Figure (4): Mean duration of infertility (years) comparison between primary and secondary infertility cases.....page 121
- Figure (5): Distribution of number of abortions in the study sample...page 122
- Figure (6): comparison between the results of sonohysterography and hystrogram in the assessment of tubal patency.....page 125
- Figure (7): Comparison between the results of hystrogram and diagnostic laparoscopy in the assessment of tubal patency..... page 126
- Figure (8): Distribution of bilateral tubal block results of the studied techniques.....page 129
- Figure (9): Distribution of unilateral tubal block results of the studied techniques.....page 130
- Figure (10): distribution of cases according to different stages of endometriosis.....page 132
- Figure (11): comparison between sonohysterography and hystrogram as regards the pain score.....page 134
- Figure (12): normal sonogram showing a normal uterine cavity and bilaterally patent proximal parts of the tubes (before balloon deflation).....page 136
- Figure (13): normal sonogram showing a normal endometrial cavity and bilaterally patent proximal parts of tubes (after balloon deflation).....page 136

- Figure (14): Hysterosalpingography showing bilateral patent tubes with free peritoneal spill.....	page 136
- Figure (15): Diagnostic laparoscopy confirmed data retrieved by sonogram and hysteroqram however revealed pelvic endometriosis stage I.....	page 136
Figure (16): sonogram showing unequivocal peritoneal spill, (i.e. free fluid in Douglas pouch) and the right tube floating freely in the fluid.....	page 137
- Figure (16): sonogram showing unequivocal peritoneal spill, (i.e. free fluid in Douglas pouch) and the right tube floating freely in the fluid.....	page 137
- Figure (17): hysteroqram with bilateral proximal block as a result of cornual spasm.....	page 137
- Figure (18): Diagnostic laparoscopy with bilaterally patent tube as demonstrated by a positive methylene blue test.....	page 137
-Figure (19): colored Doppler sonogram showing a right free flow of saline.....	page 138
-Figure (20): hysteroqram showing a normal uterine cavity, a patent right tube and a blocked left tube.....	page 138
-Figure (21): Diagnostic laparoscopy showing left peritubal adhesions with left tubal block.....	page 138
-Figure (22): sonogram showing well circumscribed fluid collection that expanded after saline instillation (Hydrosalpinx).....	page 139
-Figure (23): Hysterosalpingography showing bilateral hydrosalpinx.....	page 139
-Figure (24): Diagnostic laparoscopy confirmed bilateral hydrosalpinx.....	page 139
Figure (25): sonogram showing an echogenic band bridging over and distorting the endometrial cavity (intrauterine synechiae).....	page 140

- Figure (26): hysteroqram showing irregular uterine cavity due to intra uterine synechiae and bilaterally patent tubes.....page 140
- Figure (27): diagnostic laparoscopy confirmed tubal patency bilaterally as denoted by a positive methylene blue test.....page 140
- Figure (28): sonogram showing a normal uterine cavity with bilaterally blocked tubes (proximal parts of the tubes are not seen) with no peritoneal spill.....page 141
- Figure (29): diagnostic laparoscopy showing a frozen pelvis with dense omental and peritubal adhesions leading to bilateral tubal block.....page 141
- Figure (30): Hysterosalpingography showing a bicornuate uterus, a right tubal block and a left patent tube.....page 141
- Figure (31): diagnostic laparoscopy showing a bicornuate uterus. Methylene blue testing confirmed findings by hysteroqram.....page 141

Introduction
and
aim of the work

Introduction and aim of the work

Approximately 15% of married couples are infertile, and in 32% of these couples the dysfunction is associated with the female partner. The most common female abnormalities are related to fallopian tube patency (40%) or ovulation (40%). **(Speroff, L and Fritz, MA, 2005)**

Male factors account for 18.8% of infertility. Male and female factors combined cause 18.5% of fertility. The etiology is unknown in 11.1%, and other causes are identified in 5.6%. **(Mueller, BA & Daling, JR, 1989)**

Determining the presence or absence of tubal occlusion has both prognostic and therapeutic importance. The standard diagnostic evaluation of fallopian tube patency has included laparoscopic dye perturbation with or without hysteroscopy, hysterosalpingography, and sonohysterosalpingography. **(Speroff, L and Fritz, MA, 2005)**

Laparoscopic dye perturbation, the current standard, involves injecting aqueous dye into the uterus and depicting spill from the distal fallopian tube into the pelvic cavity. This technique only indicates patency of the entire hysterosalpingal complex and does not provide information concerning the location of the potential abnormality, however, this method is invasive, costly, and carries the usual risks that accompany laparoscopic procedures. **(Bosteels, JB, et al., 2007)**

hysterosalpingography is an alternative to Laparoscopic dye perturbation with hysteroscopy and can depict the presence and location of a uterine or fallopian tube abnormality, however, dynamic hysterosalpingography relies on ionizing radiation and may be complicated by, in order of decreasing frequency,

pain, bleeding, intravasation of contrast agent, pelvic infection, and/or reaction to contrast agent. (*Hunt, RB & Siegler, AM, 1990*)

Sonohysterography is an ultrasound-monitored procedure similar to a hysterosalpingogram, and is used to detect abnormalities of the uterus and fallopian tubes or tubal blockage. The indications for its use overlap with those for a hystrogram. Under these circumstances, it no doubt offers a safer alternative to the conventional hysterosalpingogram and has been recently investigated as an effective comparable alternative to hysterosalpingography and laparoscopy. (*Berridge, DL & Winter, TC, 2004*)

Aim of the work

The aim of this work is to evaluate the role of sonohysterography, hysterosalpingography and diagnostic laparoscopy in the assessment of tubal factor of infertility, trying to identify the value, the need and the timing of each in the infertility work up.