THE ROLE OF THE HYSTEROSCOPE IN FEMALES WITH SECONDARY INFERTILITY

A thesis submitted in partial fulfillment of Master Degree in Obstetrics and Gynaecology

by

HISHAM SALAH EL DIN MAHMOUD

Under the supervision of

Dr. Mohsen Maged Abdel Hameed
Assistant Professor of
Obstetrics & Gynaecology
Faculty of Medicine - Ain Shams University

Dr. Mahmoud Youssef Abdallah
Lecturer of
Obstetrics & Gynaecology
Faculty of Medicine - Ain Shams University

Ain Shams University
Faculty of Medicine
Dept. of Obstetrics & Gynaecology

1988

ACKNOWLEDGEMENT

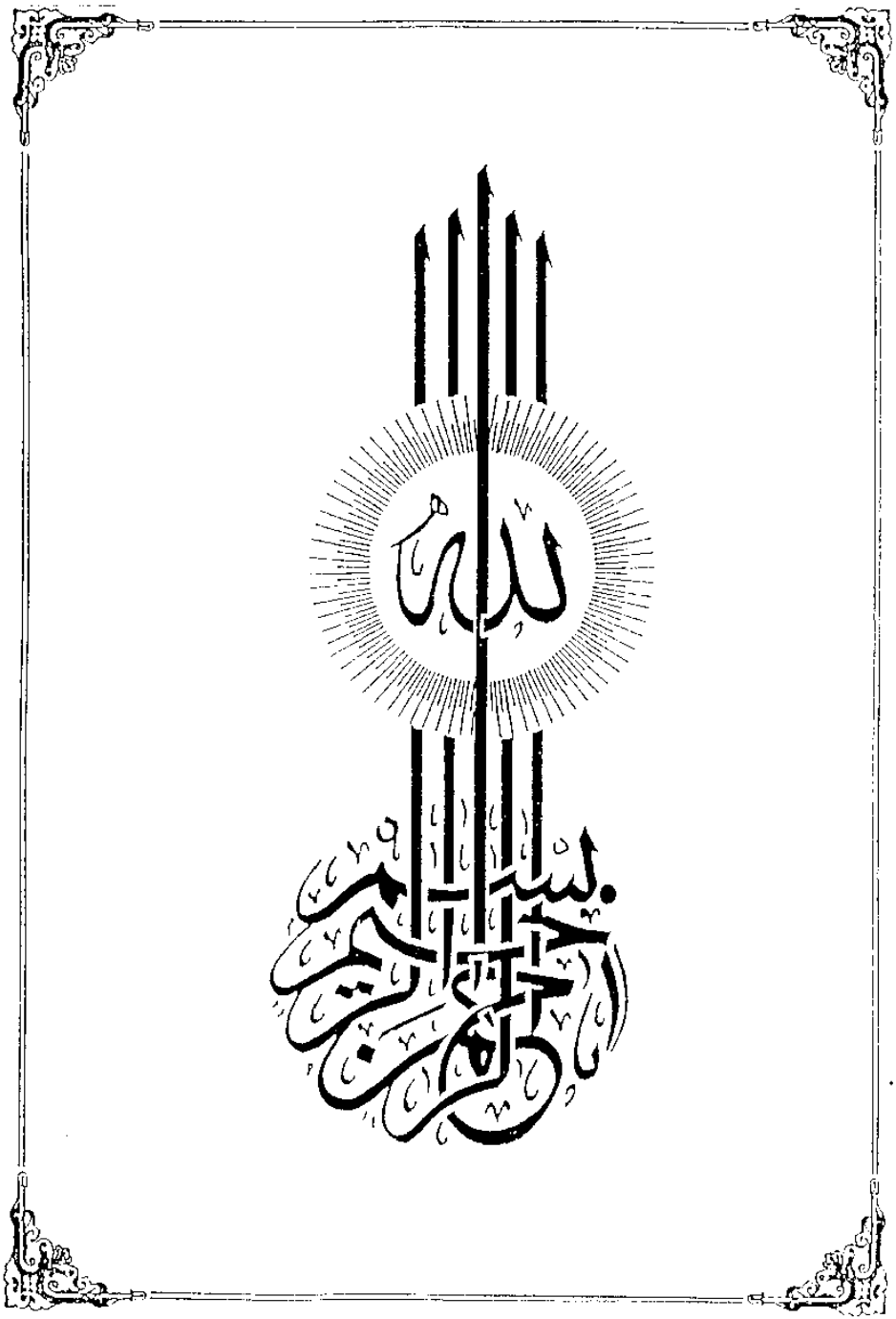
I would like to express my utmost gratitude to my eminent professor ,Dr. M. B. Sammour, Professor of Obstetrics and Gynecology, and Head of the Cyto-Diagnostic Unit, Ain Shams University, for giving me the chance of training and doing this work in his unit, for his continuous encouragement, guidance, and support.

I would like to express my deepest gratitude to Dr. Mohsen Maged, Assistant Professor of Obstetrics and Gynecology, Ain Shams University, who gave his time, effort, and experience to complete this work. I wish to thank him for his kind supervision, continuous encouragement, and helpful advice throughout the work.

I am particularly indebted to Dr. Mahmoud Youssef, Lecturer of Obstetrics and Gynecology, Ain Shams University, for his honest assistance, continuous guidance and supervision, and trustful help during this research.

Hisham Salah El Din

1988



CONTENTS

INTRODUCTION

INTRODUCTION

The infertile couple's frustration of infertility relates not only to their inability to conceive, but also to the fact that they are not sure about the etiology of their problem. Therefore, a complete and accurate evaluation is essential to achieve best results in the management of this problem (Rosenfeld, D. L., 1978).

Among the various causes of female infertility, the uterine factor is reported to account, either in total or in part, for about 10% of these causes (Keller et al., 1984). It has been traditionally evaluated with the use of endometrial biopsy, endometrial culture, dilatation and curettage, hysterosalpingography, and laparoscopy (Valle, R. F., 1980).

One of the recent methods for the evaluation of female infertility is the use of hysteroscopy. From its humble beginnings more than 100 years ago, and with the advances made in instrumentation and fiberoptics, there has been a renewed interest in this procedure (March, C. M., 1983).

Now, hysteroscopy has become a useful diagnostic and therapeutic adjunct to the traditional methods of study of female infertility. It does not replace or exclude them, rather, it complements these

procedures, thus increasing the precision and accuracy of diagnosis and treatment of various intrauterine pathologic conditions that may account for the reproductive failure of the female (Valle, R. F., 1983).

The present review provides an up-to-date survey of hysteroscopy and hysterosalpingography, and considers the wide range of clinical applications of hysteroscopy in modern gynecologic practice, with special emphasis on its use in the field of female infertility.

AIM OF WORK

Aim of the Work

The aim of this study is to assess the diagnostic value of hysteroscopy in females with secondary infertility and to compare the accuracy of hysteroscopy and hysterosalpingography in the evaluation of intrauterine abnormalities which may account directly or indirectly for female infertility.

REVIEW

HYSTEROSCOPY

I. HYSTEROSCOPY

Introduction:

Hysteroscopy is an endoscopic procedure utilizing a fiberoptic telescope and a medium to distend the uterine cavity so that it may be examined in selected patients (Siegler, A. M., 1984).

Techniques for hysteroscopy have been employed sporadically for many years with limited acceptance. However, with advances in optical and technical instrumentation, the introduction of fiberoptic light systems, and the availability of safe methods of uterine distention, interest in hysteroscopy has been renewed, particularly as regards to its applicability in the study of female infertility (Fayez et al., 1987).

Hysteroscopy is used for specific clinical indications and as an adjunct to traditional methods of diagnosis and treatment (Valle, R. F., 1983). At the present time, it has become more practical, as the clinical experience grew and new applications have been developed (Fayez et al., 1987).

Historic Background:

The history of endoscopy begins in the early years of the nineteenth century when Bozzini, in 1807, constructed a device, called the light conductor, which enabled him to inspect various body cavities. It consisted of a hollow tube and the light of a candle reflected by a concave mirror (Goldrath and Sherman, 1985).

The first hysteroscopy was described in 1869 by Pantaleoni. He was able to visualize the uterine cavity of a 60-years old woman, and to remove polypoidal endometrial growths (Baggish and Barbot, 1983).

In 1879, Nitze, who may be considered as the father of modern endoscopy, introduced his new instruments: a cystoscope and a uretheroscope. He also introduced a platinum loop to provide distal illumination (Baggish and Barbot, 1983).

In 1907, David developed a hysteroscope which permitted visualization by direct contact of the instrument with the surface of the endometrium (Valle and Sciarra, 1979). He also sealed the distal end of the tube with a piece of glass to prevent blood from receding into the instrument (Baggish and Barbot, 1983).

In 1914, Heineberg introduced irrigation systems with inflow and outflow channels, to allow for distention of the uterine cavity (Goldrath and Sherman, 1985).

In 1925, Rubin utilized carbon dioxide gas for uterine distention with limited success (Valle and Sciarra, 1975).

In 1942, Norment described a method for uterine distention using a fluid-filled rubber balloon attached to the distal end of the hysteroscope (Valle, R. F., 1983).

In 1952, Vulmiere, a French optical engineer, invented a revolutionary illumination process in endoscopy - the "cold light" process. It consists of a powerful external light that is transmitted into the uterine cavity through a special optic guide. The heat of the light is eliminated by a filter before it passes through the guide (Baggish and Barbot, 1983).

A new era in hysteroscopy began in 1968 when Menken introduced the first high-viscosity distending system with polyvinylpyrrolidone (PVP), a mixture of linear polymers of different chain lengths and molecular weights. However, the fact that the substance is yellow in solution and is not biodegradable by the liver, limited its use for hysteroscopy (Valle, R. F., 1983).

In 1970, Edstrom and Fernstrom, the parents of modern hysteroscopy, successfully utilized dextran 32%, a viscid, high molecular weight substance for uterine distention. It permitted clear visualization of the uterine cavity and intrauterine manipulations under direct visual control (Valle and Sciarra, 1979).