LAPAROSCOPIC SPERM RECOVERY VERSUS POSTCOITAL TEST IN INFERTILE WOMEN

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BY

Amr Mohamed Salah El-Din Abdel Hamid
MB, BCh (December, 1992)
Registrar of Obstetrics & Gynecology
Ain Shams University

Supervised by

Prof. Dr. Mohamed Farouk Mahfouz Fikry
Professor & Chairman of Department of Obstetric & Gynecology
Ain Shams University

Dr. Mohamed Ibrahim Mohamed Amer
Lecturer in Obstetrics & Gynecology
Ain Shams University

Dr. Hanaá Ahmed Amer
Lecturer in Clinical Pathology
Ain Shams University

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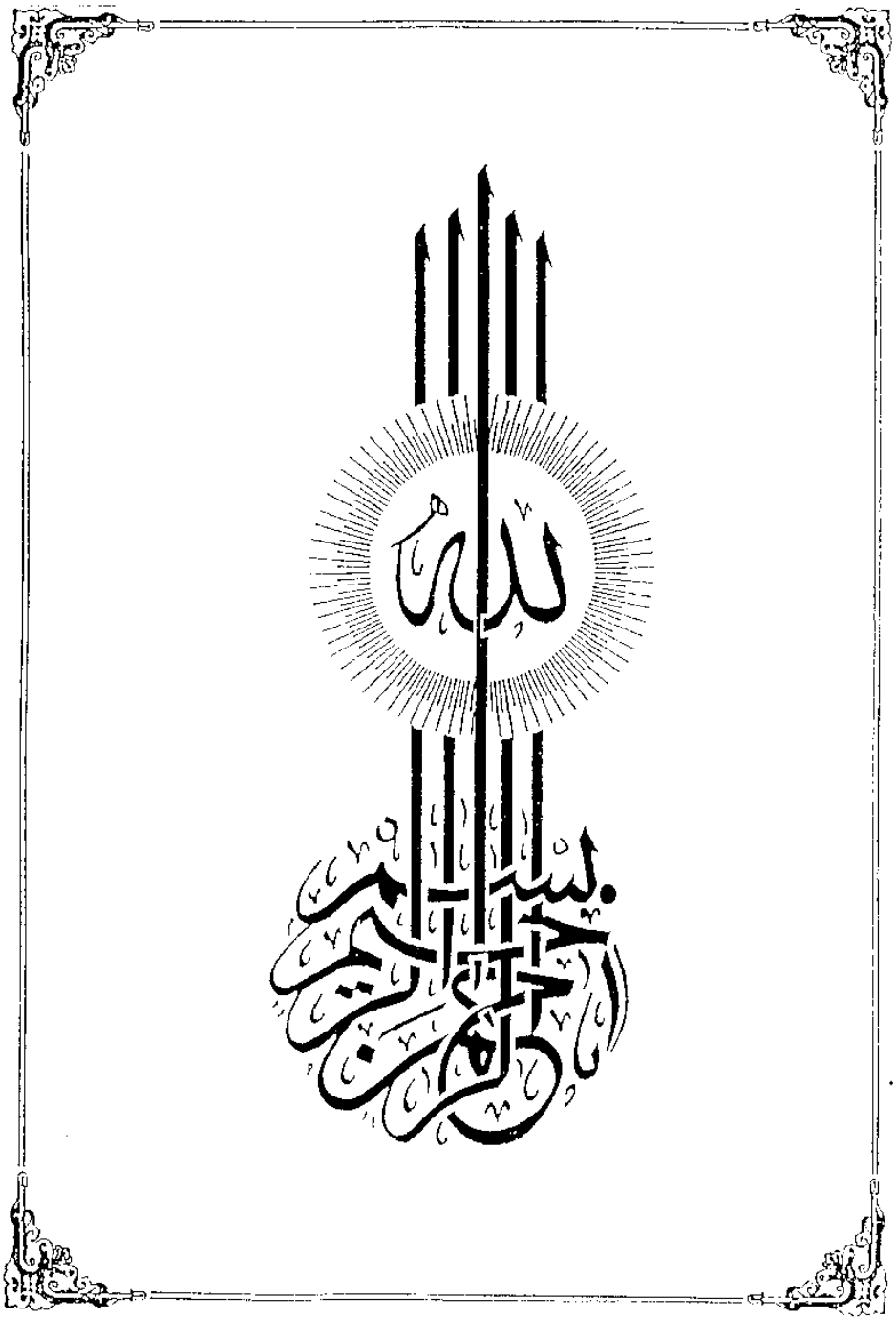

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Figures and Tables

Abbreviations

The abbreviations used in this work are listed below:

AFS = American Fertility Society.
BBT = Basal Body Temperature.
CIC = Circulating Immune Complex.
CM = Cervical Mucus.
CMS = Cervical Mucus Score.
DES = Diethyl Stilbestrols.
FSH = Follicule Stimulating Hormone.
HPF = High Power-Field.
HSG = Hysterosalingography.
Ig = Immunoglobulin.
IM = Index of Motility (for sperm).
LH = Leutinzing Hormone.
LSR = Laparoscopic Sperm Recovery.
PCT = Postcoital Test.
PG = Prostaglandins.
PID = Pelvic Inflammatory Disease.
rpm = Revolution Per Minute.
WHO = World Health Organization.

Introduction

Sperm migration through the female reproductive tract involves the interaction of multiple factors, many of which are not completely understood.

Theoretically, the quality of the ejaculate must be satisfactory both in progressive motility and in absolute sperm count (over 20 million/ml). However, inert particles placed in the cervix have been found in the oviduct, ***(Egli and Newton, 1961)*** and recent studies have demonstrated the fertilizing capacity of subjects with sperm counts below 10 million sperm/ml ***(Barfield, et al, 1979)***

Once the sperm are deposited in the vagina, they must leave its hostile environment and enter the cervix rapidly. Various physiologic mechanisms are involved in sperm transport

through the cervix such as the contractile activity of the vagina and biochemical properties of the cervical mucus that are afflicted by the hormonal changes throughout the menstrual cycle. ***(Hafez, 1973)***

Little is known about sperm transport in the uterus, but the contractility of the myometrium seems to play a major role.

The oviduct has the unique function of conveying spermatozoa and egg in opposite direction. Ovarian hormones affect the activity of the oviductal musculature and secretory activity of the oviductal epithelium, thus interfering with the rate of sperm transport. ***(Kerin, 1976)***

Sperm penetrability in the cervical mucus has been found to be much more effective on days -1 and 0 of the LH peak, when mucus viscosity is low. Limited sperm penetration is observed in the follicular and luteal phase. ***(Kerin, et al, 1976)***

In a previous study, it was failed to find a clear-cut correlation between postcoital test and recovery of sperm in the oviducts of human subjects. ***(Faundes, et al, 1970)*** And Asch succeeded in recovering sperm from the peritoneal fluid of eight out of ten subjects with negative postcoital tests. ***(Asch, 1978)***

In **1951, Rubenstein et al** reported the presence of sperm in the fallopian tube 0.5 h after artificial insemination. They concluded that sperm penetrate the cervical mucus, pass through the fundus and migrate through the tubes at all times of the cycle.

The postcoital test is a widely used and useful method of assessing the cervical barrier, although some workers have expressed doubts about its value. ***(Templeton, et al, 1980)***

Currently, the only routine test available for the in vivo assessment of the interaction between a man`s spermatozoa and his partner`s reproductive tract is the widely used postcoital examination of the cervical mucus. Unfortunately, this test suffers from problems of standardization and interpretation, ***(Gibor, et al, 1970, Moghissi, 1976)*** and there is continuing controversy in the literature about the objectives in performing the test.

Further doubts its value have been created by the recent demonstration of spermatozoa in the peritoneal cavity of patients with negative postcoital tests, ***(Asch, 1976)*** some of whom subsequently became pregnant without treatment. ***(Asch, 1978)***

Spermatozoa can be recovered at laparoscopy from the peritoneal fluid of some infertile women, this finding may be im-

portant in their subsequent management. The technique is easy to learn and adds only a few minutes to a routine laparoscopic examination of the pelvic organs.

The timing of the procedure is important as sperm migration does not usually occur in the early follicular and luteal phases of the menstrual cycle. ***(Croxatto, et al, 1973)***

Review of Literature

Infertility is defined as one year of unprotected coitus without conception. It affects approximately 10%-15% of couples in the reproductive age group which makes it an important component of the practice of many physicians. ***(Mosher and Prett,*** *1: 1)*

Couples need to be aware that there is a normal time requirement to achieve pregnancy. In each ovulatory cycle, normal couples have only about 25% chance of becoming pregnant. Guttmacher's classic table has been a standard since 1956: ***(Guttmacher, 1956)***

Time Required for Conception in Couples Who Will Attain Pregnancy*

Months of exposure	% Pregnancy
3 months	57%
6 months	72%
1 year	85%
2 years	93%

(*) Guttmacher, 1956

The major categories of infertility are: male factor 35%, ovulatory factors 20%, tubal factors 20%, endometriosis 10%, cervical factors 5%, and unexplained 10%. ***(Tietze, 1957)***

Cervical factors include changes in cervical architecture, mucus or both, resulting in hostile environment through which, sperm must pass. Assessment of this factor includes an evaluation of cervical mucus both as transport medium for sperm and as a diagnostic indicator of bending ovulation. ***(Markham, 1991)***

An infertile couple has what is called unexplained infertility when all standard clinical investigations (semen analysis, the postcoital test, assessment of ovulation, and demonstration of tubal patency) yield normal results. It is estimated that from 10% to 15% of infertile couples will ultimately reach this clinical di-