

TUBAL FACTOR INFERTILITY

ESSAY

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By

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LIST OF ABBREVIATIONS

ART	Assisted reproductive technology
A.S	Acute salpingitis.
Ez	Estradiol.
GIFT	Gamete intrafallopian transfer.
HCG	Human chorionic gonadotropin.
HMG	Human menopausal gonadotropin.
HSG	Hysterosalpingogram.
IVF-ET	In vitro fertilization and embryo transfer.
PID	Pelvic inflammatory disease.
T.B.	Tuberculosis.
US	Ultrasound.
U.S.	United states.
ZIFT	Zygote intrafallopian transfer.

INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

Infertility has several definitions and medical, demographic and popular usage may differ (Wentz, 1988) and the American Fertility Society considers couple infertile when pregnancy has not occurred after one year of coitus without contraception (Wallach, 1989).

The percent of married couples unable to conceive varies as reported by different authors, 10% (Wallach, 1989), 15% (Wentz, 1988). And while Behrman & Patton (1988) reported that it climbed from 15% to 18-20% in the past decade, Hamitton (1992) mentioned that there is little evidence that is real and a recent community based study found a prevalence of infertility within general population of 14% (Rempleton et al., 1990).

Tubal and peritoneal factors are reported in 25-50% of infertile women (Dhaliwal et al., 1987). In conjugation with ectopic pregnancy, are recognized sequelae of PID. Also there is a close response relationship between acute salpingitis and infertility, such that the rate of infertility due to tubal dysfunction increases with the number and severity of episodes of salpingitis (Sellors et al., 1988).

The factors most seriously as well most frequently influence infertility are related to anatomic and pathologic alteration of fallopian tube, and peritoneal scarring from pelvic endometriosis or from other causes of extrapelvic infections (appendicitis or diverticulitis) may produce a similar influence on tubal motility as gonococcal endosalpingitis which is the disease that most commonly alters cilia and produce anatomic deformity (Rock, 1992).

The sequelae of PID now cause a significant morbidity in women of childbearing age (Westrom, 1988). And, attempts must be made to reduce both the prevalence and complications of this condition as the proportion of women diagnosed as having tubal occlusion after one infection was reported as 2-8% rising to 75% after three infections (Stacey et al., 1989). Also, Westrom (1988) stressed that tubal occlusion is a major cause of tubal infertility, while Williams (1992) reports that clinical investigators believe that about 30% of patients with infertility have the endometriosis as the only predominant cause.

There are many tests of tubal patency, the 1st of these is gas (CO₂), while its main advantages are that being uncomplicated, easily performed in the office setting, it is rarely used today (Wentz, 1988) and cannot be interpreted as a conclusive evidence of tubal obstruction (Rock, 1992).

Hysterosalpingography and endoscopy are the tests used today to evaluate the uterus and oviducts, these procedures should be regarded as complementary rather than competitive, since each procedure provides specific useful information and both frequently performed concurrently in an ambulatory surgical unit (Beharman & Patton, 1988).

The role of each test may differ in evaluation of tubal patency, while the main information provided by Rubin's test and hysterosalpingography concerns tubal patency or obstruction, the direct visualization of adenexae with laparoscope provides an excellent opportunity for evaluation of tubal patency and motility, peritoneal adhesions and other pelvic diseases. Of all tubal studies, laparoscopy is the most difficult, yet the most informative (Rock, 1992). And no investigation for infertility can be considered complete until endoscopy has been performed (Dhaliwall, 1987).

A new endoscopic method is salpingoscopy which is an endoscopic examination of tubal lumen, and preliminary reports of its use suggest that findings of which may correlate with subsequent pregnancy success following salpingioplasty (Rock, 1992).

Although the treatment of tubal occlusion is ordinarily surgical in final analysis, however, prior to a major operative approach, tubal patency test should be performed both for diagnostic and also in an effort to rupture minor adhesions and that may increase the incidence of conception in the three or four cycles following their utilization and the new laparoscopic techniques now permit significant operative procedures including lysis of adhesions, linear salpingostomy for removal of ectopic pregnancy and restoration of patency for hydrosalpinx (**Rock, 1992**).

The introduction of microsurgery made a revolution in tubal surgery as it is clear that the introduction of operating microscope into the field of infertility during 1970s dramatically changed the surgeon's approach to a diseased oviduct (**Patton, 1988**).

The use of carbon dioxide laser through the laparoscope is rapidly gaining popularity in the treatment of endometriosis and other disorders and appears to be one of the most surgical advances of decade (**Daniell & Herbert, 1988**). The use of laser as a "light knife" is one of latest in a long series of attempts to improve pregnancy results following infertility surgery (**Martin, 1988**).

The technique of in-vitro fertilization and embryo transfer (IVF-ET) was developed for couple with untreatable tubal factors infertility and considered as the final option **(Haney et al., 1987)**. Although medically assisted human reproduction (MAHR) in the Arab World had to overcome initial resistance because of cultural, social, religious and financial limitation and it is concluded that, in developing countries, prevention of tubal factor of infertility is better than treatment which is uncertain and expensive **(Serour et al., 1991)**.

AIM OF THE WORK

This work aims at discussion of the magnitude of the problem of tubal infertility, the relevant anatomy, physiology and pathology in a thorough manner. However different methods of diagnosis, investigations and pathogenesis are handled as issues for better prevention and treatment. Meanwhile a strategy based on most recent available data that will elucidate our way for prevention and management, will be incorporated.

EMBRYOLOGY ,
ANATOMY AND
PHYSIOLOGY.

EMBRYOLOGY

About 37 days after fertilization, the müllerian ducts first appear lateral to each wolffian duct as invagination of the dorsal coelomic epithelium. The site of origin of the invagination remains open and ultimately forms the fimbriated end of the fallopian tubes. At their point of origin, the müllerian ducts each form a solid bud. Each bud penetrates the mesenchyme lateral and parallel to each wolffian duct, As the solid bud elongate, a lumen appears in the cranial part, beginning at each coelomic opening. The lumina extend gradually to the caudal growing tips of the ducts. Eventually the caudal end of each müllerian duct crosses the ventral aspect of the wolffian duct. The paired müllerian ducts continue to grow in a medial and caudal direction until they eventually meet in the midline and become fused together in the urogenital septum. A septum between the two müllerian ducts gradually disappears, leaving a single uterovaginal canal lined with cuboidal epithelium. The most cranial parts of the müllerian ducts remain separate and form the fallopian tubes. The caudal segments of the müllerian ducts fuse to form the uterus and part of the vagina. The cranial part of fusion is the site of future fundus of the uterus (Rock, 1992).