COMPARATIVE STUDY BETWEEN POMEROY TUBAL STERILIZATION AND HULKA CLIP TUBAL STERILIZATION BOTH VIA MINILAPAROTOMY APPROACH

THESIS

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By

Magdy Philip Iskandar

M. B. B. Ch.

Faculty of Medicine,

Ain Shams University

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Supervised by:

Ass. Professor Doctor Hamdy Elkabarity

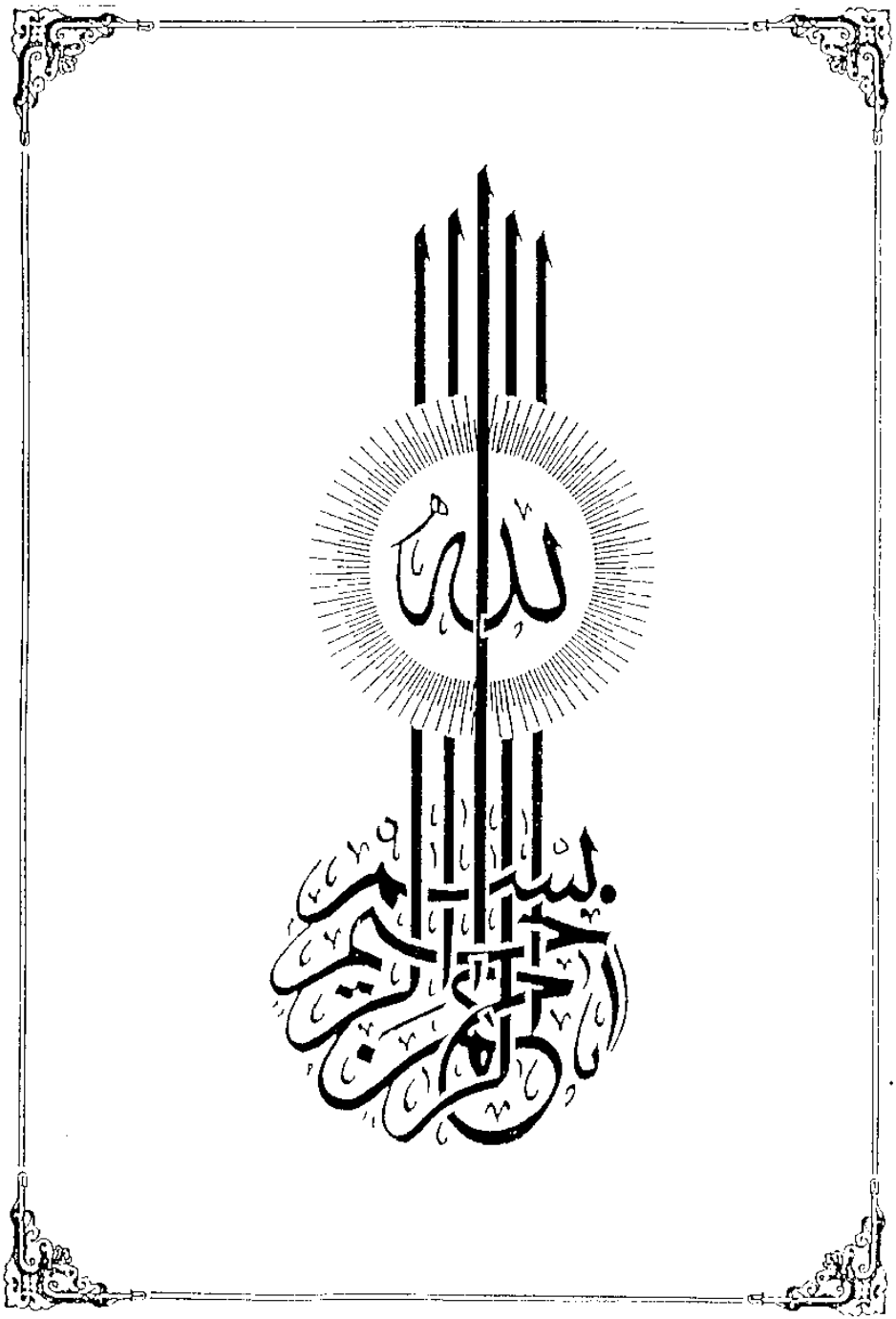
Ass. Professor of Obstet.& Gynaec.

Faculty of Medicine, Ain Shams University

Doctor Mohsen Maged

Lecturer of Obstet.& Gynaec.

Faculty of Medicine, Ain Shams University



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a clip that could be applied by laparoscopy and would occlude the tube by compression with metal spring (Hulka, 1972).

In September, 1972, clinical trials were begun, and by March 1973, over 1000 patients had undergone this procedure (Hulka, et al, 1976).

There is increasing interest in the application of clips to the fallopian tubes via laparoscope as a sterilization procedure (Hulka, and Porter, 1975).

The increasing social importance of sterilization and the impact of our burgeoning world population indicate the need to continue intense research efforts toward finding better and safer sterilization methods (Evans, 1973).

The future ideal for female sterilization will be development of inexpensive, reversable procedures that can be safely undertaken on an ambulatory basis utelising physicians, nurses, or paramedical personnel (Hulka, and Porter, 1975).

HISTORICAL REVIEW

Historical review of female sterilization techniques

There is a long, bizarre history of surgical attempts to control human fertility. Some methods used were mutilating, cruel, and lethal. Female castration and even hysterectomy were practiced in some primitive societies (Finch & Green, 1964).

Historically, more interest was developed in sterilization of women rather than men. Some women were subjected to various experimental surgical operations or required to use some method of infibulation, usually involving a chastity belt (Evans, 1973).

Occlusion of the vaginal introitus passed through several stages-from sewing the vulva and passing a ring through the labia majora, to the adoption of a chastity girdle (Dingwall, 1931).

Sterilization of the female has been of interest to the medical profession since Hippocrates first proposed it as a means of avoiding perpetuation of insanity through heredity. In the fourth century B.C., Hippocrates also observed that fat women appeard to bear fewer children than lean women, and he proposed that fatness should be encouraged in women who wished to remain sterile. Oligo-ovulation in obese women has long since been confirmed (Evans, 1973).

Oophorectomy was known to the ancient Egyptians (Finch and Green, 1964). The lydian kings had the women in their harems castrated, there-by earning the dubious honor of being the first to casterate women. In Queensland, oophorectomy was performed to produce a special class of prostitutes (Evans, 1973). In the eighteenth century a religious group in Bavaria who concluded public worship with general sexual intercourse attempted to sterilize their female members by crushing the ovaries (Finch & Green, 1964).

Von Blundell in 1834 suggested that simple division of the fallopian tubes might prevent pregnancy (Evans, 1973).

In 1850, Froriep suggested creating a chemical slough stricture in the upper uterine angles (Garrison, 1929).

However, the first recorded tubal sterilization operation was carried-out in 1880 by Lungren (1881) following a second cesarean section.

During the four decades after Lungren's epochal operation, many procedures were performed including cornual resection, intrauterine cautarization; and salpingectomy. Numerous failures occured (Evans, 1973).

Mandlenar (1919) published a technique using non-absorbable suture to occlude a tubal loop. The base of the

loop is crushed before the ligature is applied.

By 1921, 42 different procedures had been proposed (Flatau, 1921).

Irving described a transection technique in 1924 in which the proximal stump is buried into the muscular wall of the uterus and the distal stump is buried between the leaves of the broad ligament (Irving, 1950).

Haendly (1925) reported about one of the more bizarre procedures by formation of double vagina by transverse colporrhaphy, it involves the creation of a blind vaginal pouch for coitus leaving another one for pregnancy.

Though Pomeroy never published his technique, it is known that he was already using it in 1929 (Soderestrom & Yuzpe, 1979).

Aldridge (1934) described a technique in which the tube is left intact and the fimberiated end is buried in the broad ligament.

The Kroener fimbriectomy was described in 1935 and opened the door to the vaginal approach to female sterilization (Kroener, 1969). From that time until 1960 little advancement in sterilization techniques took place (Soderstrom & Yuzpe, 1979).

Uchida (1961) reported on his operation for abdominal sterilization. In this operation saline-epinephrine solution balloons the mesosalpinx, mesosalpinx and 3-5 cm loop of tube are excised, the proximal end is buried and the serosal defect is closed with a non-absorbable purse-string ligature exteriorizing the distal cut end.

On 1963 Clyman reported on operative culdoscopy (Clyman 1963).

Rauramo and Paavola (1964), their operation entails the removal of only 1.5 cm of the isthmic portion of the tube.

Rosenzweig (1964) described the technique of vaginal sterilization by transposition of the fallopian tubes into the vesicovaginal space.

Though Anderson, an American, performed the first laparoscopic tubal occlusion in 1947, it was not until the 1960s that this instrument's possibilities for female sterilization were appreciated (Soderstrom & Yuzpe, 1979). Palmer in 1962, and Steptoe in 1967, published the first series of laparoscopic sterilizations using electro-coagulation (Palmer, 1962, and Steptoe 1967).

Moss (1971) reported on the use of vanadium clips for sterilization operations.

In April 1972, study of the endoscopic ring procedure was initiated (Yoon, 1976).

Surveys in 1970 suggested that perhaps half of all American women who had been rendered infertile by surgical means had undergone sterilization for contraceptive purposes. Until 1969 the American College of Obstetrics and Gynecology (ACOG) recommended that sterilization be performed only on women who were at least 25 years old with five living children, 30 years old with 4 living children or 35 years old with three living children. In 1969, ACOG withdraw it's age-parity formula infavour of more individualized decision making for each patient, but consultation with other colleagues was recommended prior to the sterilization procedure. Since 1970, ACOG has further libralized it's position, and determined that if contraceptive sterilization is requested by the patient and her physician agrees, then consultation is not deemed necessary (Hulka and Porter, 1975).

The revisions in ACOG sterilization policies reflect chaning attitudes and dramatically increasing public demands for contraceptive sterilization (Hulka and Porter, 1975).

FEMALE STERILIZATION TECHNIQUES

Female sterilization techniques

The ideal surgical method for sterilization does not exist. The choice of operation depends on the existence of systemic disease, risk of future pregnancy, patient's age, timing of the operation, the failure rate and complexity of the procedure, surgeon's experience with various techniques, patient's weight, history of previous pelvic operations, concurrent pelvic disease, the possibly safer alternative of a vasectomy in the husband and on psychological factors (Evans, 1973).

(I) Abdominal approach—

Laparotomy incision.

(1) Madlener Procedure : In 1919 Madlener published a technique using non-absorbable suture to occlude a tubal loop. The tube is grasped at or just distal to it's mid portion and elevated. The base of the loop is crushed before the ligature is applied and the loop is left to atrophy (Evans, 1973 and Soderestrom & Yuzpe, 1979). Unfortunately, the failure rate quoted as 14 per 1000 is unacceptable by today's standards (Garb, 1957). It is rarely done now (Jeffcoat, 1975).

(2) Pomeroy Procedure:

Pomeroy method of tubal sterilization by laparotomy has been well known to surgeons and gynaecologists since the year 1930 (Bishop and Nelm, 1930).

A nukle of each fallopian tube is ligated with absorbable catgut suture material and then resected. The genius of this simple procedure is that the cut ends of the fallopian tubes fall away from each other when the suture absorbs, and they become seald with a peritoneal covering (Hulka, 1972 and Overstreet, 1964). Pomeroy insisted that the tube should not be curshed and that only plain catgut suture be used to tie a loop from the middle third of each tube after which the loop was excised (Bishop and Nelms, 1930). Evans (1973) reported that by avoiding crushing of the loop of mid portion of the tube, fistula formation is diminished.

Pomeroy tubal ligation can be used as interval as well as post partum tubal sterilization method (Louis Weinstein, 1980 and Hulka and Porter, 1975). Louis Weinstein (1980) reported that Pomeroy procedure is probably the simplest method of tubal ligation and quite effective in nonpregnant patient. Hulka and Porter (1975) reported that post-partum Pomeroy tubal ligation is safe and effective.

White (1966), Lu and Chun (1967), Barglow and Eisner (1966), McElin et al (1967) and Turner and Hooper (1971) all

reported that the risk of post partum thromboembolism is increased, but only minimally if tubal ligation is carried out in the puerperium rathar than at least three months later. Turner and Hooper (1971) suggested that this risk,may be minimized if the operation is done within 72 hours of delivery, but there is no general agreement on this point.

In multiple studies the failure rate of the Pomeroy technique has been found to be from 2 to 4 per thousand cases (Garb, 1957, Haynes and Wolfe, 1970, Hibbard 1967, Little 1975, Mcelin 1967 and Poulson 1973). Of particular concern to Garb was the high failure rates when the Pomeroy technique was used in conjunction with cesarean section (Garb, 1957). This apparent, but unexplained increase in failure rate led several investigators to recommend against the use of the Pomeroy technique at the time of cesarean section (Garb, 1957 and Overstreet, 1964). By the 1970s, however, contrary data had accumulated (Hibbard 1972 and Husbands et al, 1974). Green and Laros (1980) routinely perform Pomeroy ligations at the time of cesarean section and believe that concerns over excessive failures have been adequately discounted.

The incidence of ectopic pregnancy among sterilization failures has been reported as high as 40% (Little, 1975).