MISSED LOOP

ACLINICAL STUDY

THESIS

Submitted for Partial Fulfillment of Master Degreein Obstetrics and Gynaecology

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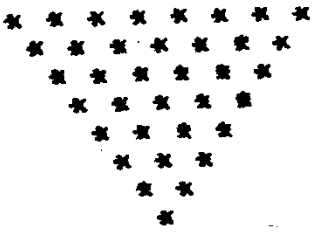
1982

بسم الله الرحمن الرحيم



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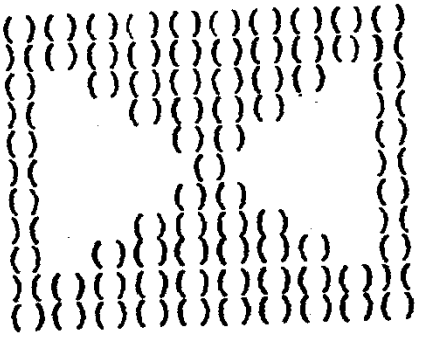
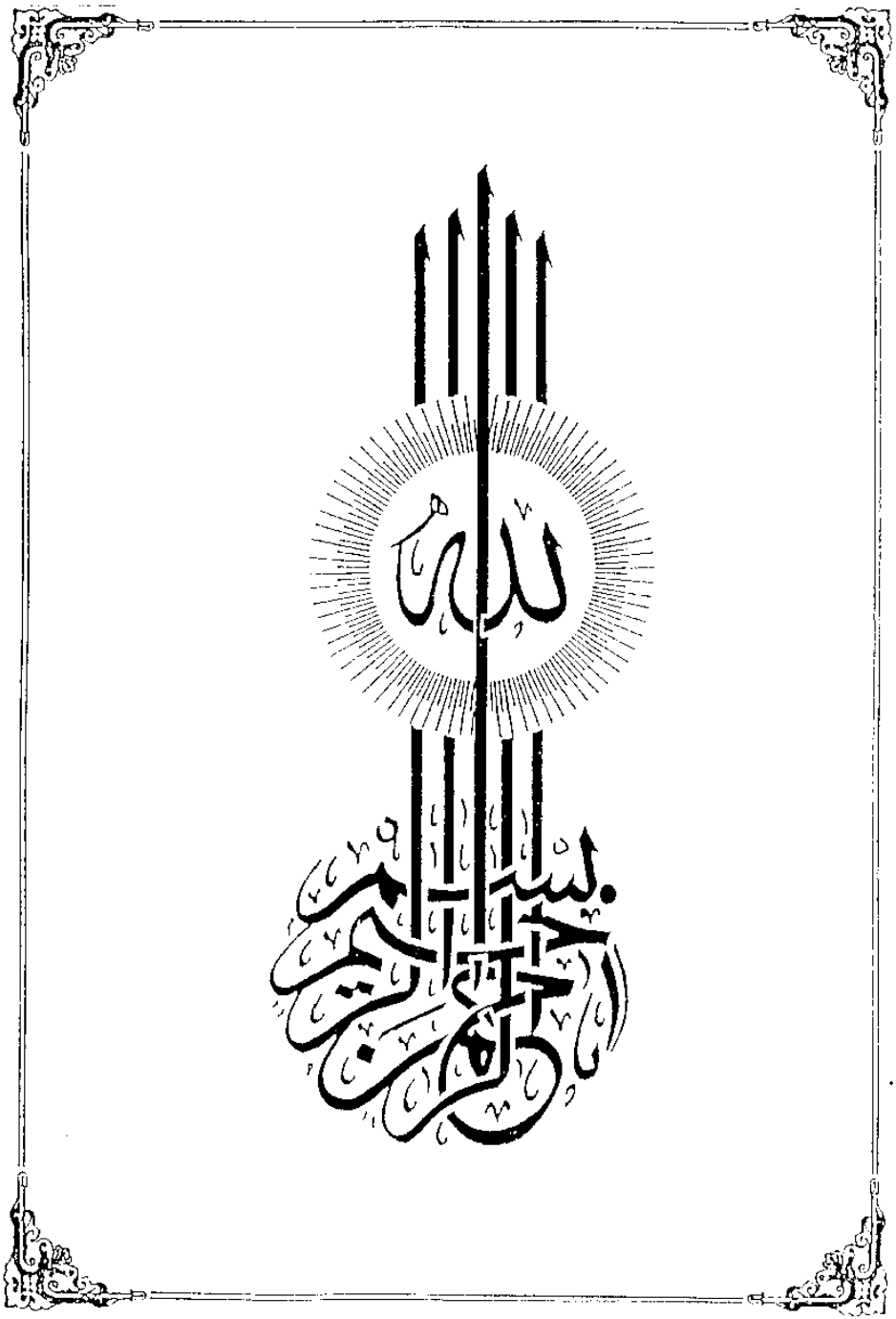




INTRODUCTION

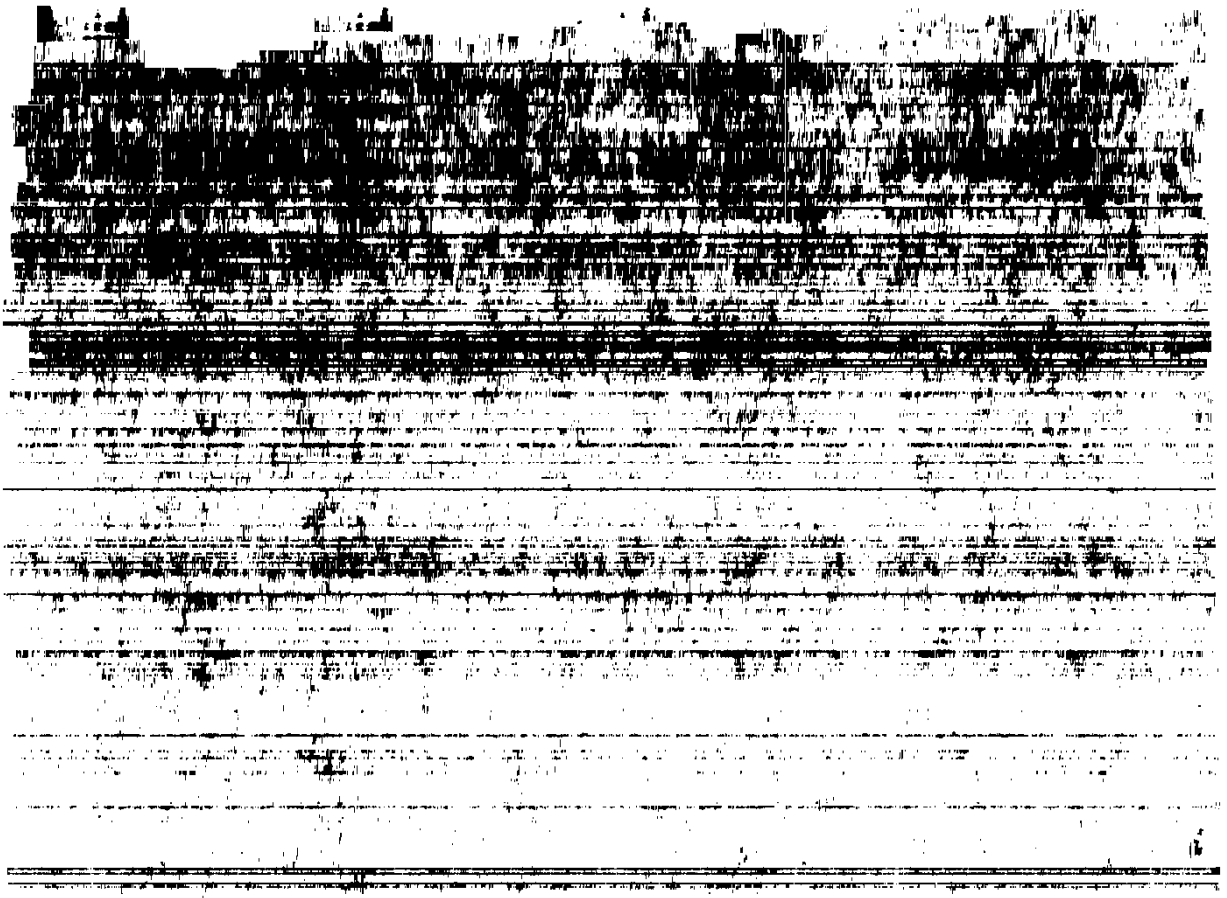
The practice of birth control(contraception) may be desirable for many reasons, including medical contraindications,a personal desire to have no children, no children yet, or no more children,and the global problems of increasing population.

One of the most common methods of contraception is the use of IUCDs which is now used all over the world.Due to the large scale of using IUCDs,certain complications have come to light.

Missed loop is considered to be one of the common and serious complication.

In this study,we shall give short account on History,mechanism of action,types, application and complications of the IUCDs. Then we shall discuss in details the problem of missed loop.

HISTORY OF IUCDS



MISSED LOOP

History

Tatum 1972 reviewed the chronologic history of the development and use of intrauterine contraceptive devices (IUCDs).He said that,the early history of IUCDs is so poorly documented that the original concept has not been assigned to a person or in fact to a specific century.Early mention has been made of the use of stones placed within the uterine cavity of Camels to prevent pregnancy during long trips across deserts. Undoubtedly,a similar method had been applied to women at or about the same time.

He classified the chronologic history of IUCDs into the following stages:-

I) Embryonal Stage :

The first report on this stage came to light during the 11th century by the Islamic Scientist Avicenna. During the 19th Century,stem pessaries made from material as common as pewter and as exotic as diamond-studed platinum were in use.

These were technically not intrauterine devices since they did not rest entirely within the uterus; the bulk of the device remained in the vagina while the stem extended through the cervical canal and protruded into the uterine cavity.They were inserted to correct uterine position and induce abortion as well as to prevent pregnancy.

The first IUCD designed by a German physician, Richard Richter.The device was ring-shaped and made of silk worm-gut.Silk worm threads were also incorporated in a cervico-uterine device developed in 1923 by Pust, who combined the silk worm ring with the Older Stem Pessary.

Pust reported no pregnancies or Serious complications among 453 women in whom he had inserted the device.He distributed his IUCD to other sphysicians, but many refused to use it on the grounds that such a device would produce pelvic infection.

2) Infancy Stage :

It began in the 1928 with studies of Gräfenberg. His first device consisted of a six-pointed star

made by tying three pieces of silk worm-gut together at the centre.

Gräfenberg soon found that he could not easily detect the presence of the star within the uterine cavity by means of a probe or sound.

He substituted a central tie made of thin silver wire for one of gut.The wire permitted detection with uterine probe,and also rendered the star partialy radio-opaque.The star was so soft and easily expelled from the uterus.Because of this low retention rate, Gräfenberg made the first intrauterine ring which consisted of several turns of silk worm-gut making a ring aproximately 2 cm. in diameter having a cross section of about 2 mm. The rings then were made more rigid as well as radio-opaque by binding them with fine silver wire. This silver bound gut was replaced by a ring made by joining the two ends of a tightly wound spiral of silver wire which possed moderate spring properties and could be compressed to a smaller and oblonged configuration for insertion through the cervical canal.This ring was the first

intrauterine device commercially manfactured,but with increase incidence of endometritis and Salpingitis its use became limited.

During the same period that Gräfenberg began his work,and mainly in 1934,Ota,in Japan,used silk worm-gut rings,and then used small rings fabricated from flexible metals.These metal rings were more effective contraception than the gut rings but were more difficult to insert.So,Ota began to fabricate these rings from various synthetic plastics.However, before development of antibiotics, most of the physicians were afraid to use it for fear of pelvic infection.

3) Childhood Stage :

This stage started on 1962 when Jack Lippes designed the first widely used plastic IUCD.He added two important features to the device that bears his name;a transcervical thread to assist in detecting and removing the device and a small amount of barium sulfate to render the device opaque to x-ray. Most of subsequently designed devices bear these two features.

At the same time, Margulies(1963),Zipper and Sanhuerza (1963),Birnberg and Brunkill(1964)and Hall (1963) independently designed and tested various forms of intrauterine contraceptive devices.

4) Adolescence Stage :

During the 6 years from 1962 to 1968,Lippes loop was used more extensively than any other device.To evaluate the clinical effectiveness of newely concieved Shapes and Sizes of intrauterine devices, a term called "use effectiveness" or " clinical effectiveness " was used which means the protection from unwanted pregnancy achieved by users under real life conditions,including the effects of carelessness, ambivalence,and other manifestations of human froilty.

5) The Pubescent Stage :

In this stage, there is progression from philosphical concept to practical application. The size and shape of potential uterine cavity

depend upon the contractile state of the myometrium. The configuration and size of the endometrial cavity normally reflect the summation of myometrial forces. The walls thicken and shorten, and the uterine cavity responds by becoming smaller in all dimensions. As the contraction increases, the lateral walls of the uterine cavity approximate one another, and the cavity or potential space assumes the shape of a T. This T shaped configuration would persist even when the uterus contracted maximally. An intrauterine foreign body in the shape of a T would be placed within the endometrial cavity and would conform easily to the normal shape and size of the cavity, and would cause a minimum degree of myometrial distension and endometrial compression. The 1st T IUCD was molded in 1967 by Zipper from a mixture of polyethelene and barium sulfate and was tested clinically by Tatum and Zipper.

The incidence of pain and bleeding is decreased to 1/5 in comparison to Lippes loop. Also the expulsion rate was approximately half that of the Lippes loop.

This low incidence of expulsion is due to two features :-

a) The T conforms so well to the uterine cavity that the myometrium is subjected to only minimal distortion.

b) Rotation and displacement of the T within the uterine cavity is resisted by the three points of contact between the device and the uterine walls which contain it.

New devices were constructed from symthetic plastics, stainless steel, silcone rubber, and silk worm-gut but still having the same side effects as bleeding, Spotting, uterine cramps, lower abdominal pain, and noticed or un noticed expulsion. These side effects limited the use of most of them. Each device by virute of its shape and overall dimensions forced the endometrial cavity to adjust to the configuration of the device. As a result, a delicate endometrium is compressed and the myometrium is distended. This results in bleeding from the endometrial surfaces as well as painful contractions as the myometrium reacts to

oppose its distension and to expell the foreign body which has been placed within its cavity.The next step was to determine the shape and size of a foreign body which would conform to the endometrial cavity and causes a minimum degree of distension.The low incidence of side effects was accompanied by a low level of contraceptive effectiveness and increased pregnancy rate due to the small surface area of the T.device

6) The Maturation Stage :

Since 1967,IUCDs have been used as a carrier. Zipper and his associates used metalic copper as a perfect contraceptive.The metalic copper in the form of wire was wound around the dependent or vertical arm of the T.There is a definite direct correlation between the area of copper exposed to the endometrial environment and the contraceptive effectiveness. Acombination of metalic copper and metalic Zinc affixed to the vertical arm of the T is also used with synergistic action between copper and Zinc.

Doyle and Clewe 1968 designed hormone releasing devices and in 1970 demonestrated that the antifertility effect of exogenous progestin was local rather than systemic.

Also, at the same time 1970, Crexato, Vera, and Porga proved that a progestogen acts localy as a contraceptive.

Zipper, Medel,Postene and Revera 1974 demonestrated that a T shaped device with small amounts of copper wire wrapped around the stem was more effective in reducing the pregnancy rate than the same device without copper.

This discovery marked the begining of new generation of IUCD develop-ent,during which antifertility agents(metals, hormones,drugs) were added to the so called non-medicated devices.

In 1970 Scommegna,Pandya,Chirst,Lee,and Cohen reported that the response of human endometrium to progesterone released slowly in-utero from silastic tubes, attached to the upper arms of Lippes loop,