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MASTER DEGREE IN OBSTETRICS AND GYNECOLOGY.

Tubal Pathology and Endometrial Pathology in Women Undergoing Surgical Sterilization.

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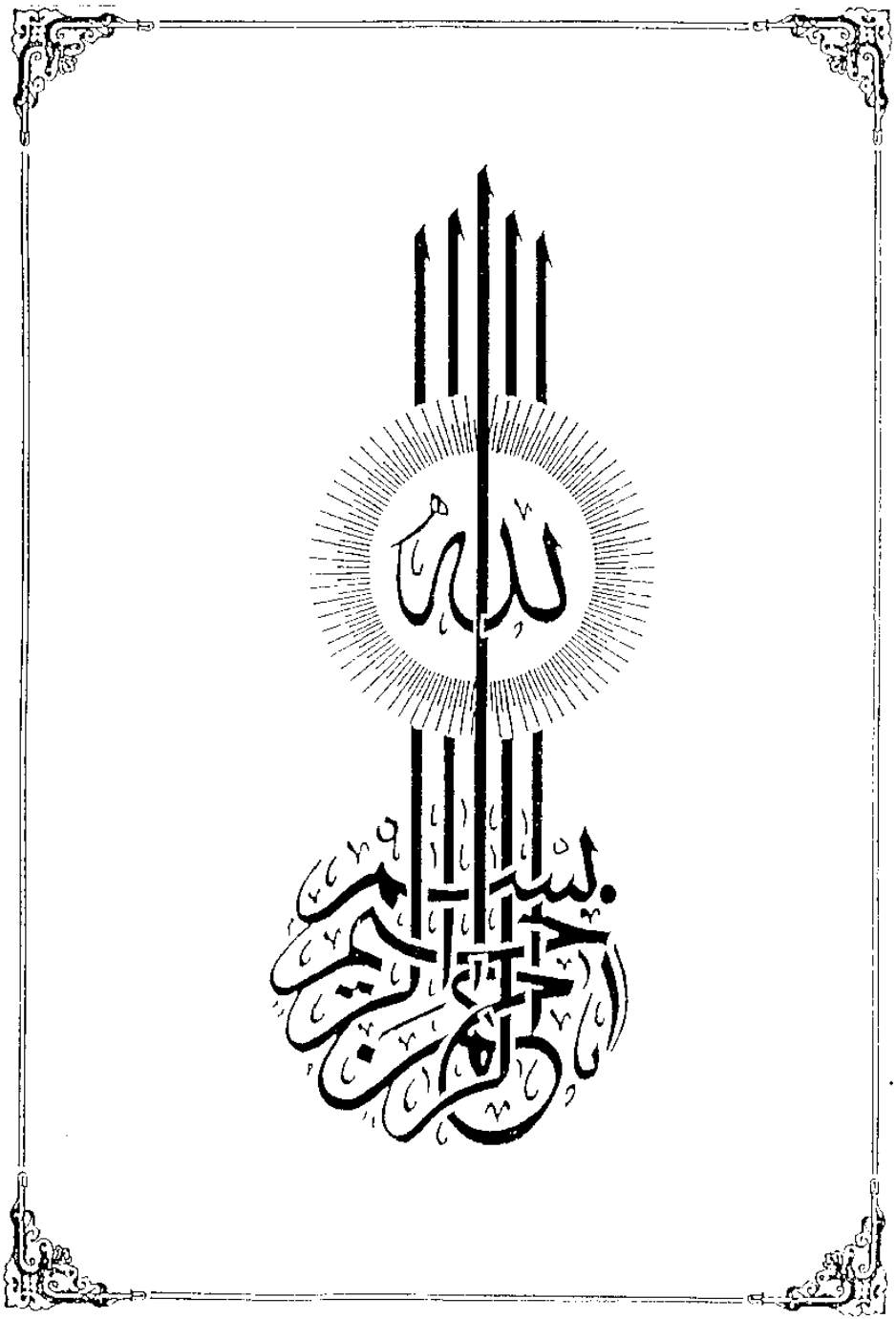

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REVIEW

Introduction and Aim of the Work.

The tubal ligation as a method of contaception had proved itself.

Most of these women had tried different methods of contraception and then came to the decision of permenant sterilization.

The operation itself is an exploratory mean to the lower abdomen.

Histopthological examination of the excised parts of the tubes and currettage of the endometrium will reveal any present pathological abnormalities.

The aim of the work is correllation between tubal changes and endometrium pattern during sterilization with the view of the indirect effect of pills, I.U.D.s and other factors on these changes.

I-Histology of the Endometrium.

The endometrium is the uterine mucous membrane above the level of internal os; below this point the mucosa is termed the endocervical epithelium.(I) It is lined by simple columnar epithelium which is interrupted by groups of ciliated cells. The lamina propria contains simple tubular glands with a few branches at their blind end. The stroma ofthe lamina propria is formed of reticular tissue network which is full of lymphocytes-like stroma cells, macrophages and granular leucocytes.

The endometrium(52) is characterized by a remarkable lability to the ovarian steroids.

In the common types of menstrual cycle(49), the occurance of ovulation at approximately the middle of the cycle serves to divide the cycle into a pre-ovulation and post-ovulation phase.

R.Meyer(42) classified the menstrual cycle as follows:

(I) Post-menstrual phase:

few days immediately following cessation of a menstrual period. During it the endometrium is grssly quite thin,

measuring I or 2 mm in thickness. The surface epithelium is low and cuboidal, the glands are straight with little or no tendency to convnlution and their epithlium is like that of the surface, with no suggestion of secretory activity.

During the latter part of this Phase, mitosis begins to be seen in the epithelial cells. The stroma is dense, compact and nonvascular in appearance.

(2) The interval phase:

It begins approximately one week after menstruation and extending to about one week before the next period. The surface epithelium usually becomes taller and definitely columnar while the glands become more and more hypertrophic with glansular widening of the lumina andsteadily icreasing convolution. Early in this phase, no trace of secretory activity, but later on, subnuclear vacuoles push the nuclei towards the lumina of the glands. Continued glycogen secretion into the glands lumen makes the nucleus slips back to its original basal position.

Later in the interval, there is marked increase in the secretory activity, even the glycogen granules are found in the lumina of the glands. The stroma in this phase is more abundant and somewhat more hypermic.

(3) The premenstual phase:

It correspond to one week or so before menstruation. The muoosa is thick, soft and velvety, measuring from 3 to 8 mm in thickness. It is usually rather pale and oedematous in appearance. The surface epithelium remains quite tall and non secretory. The glands exhibits a steadily increasing tortuosity, the gland's neck being often straigt and tortous, but the middle section presenting marked scalloping and often a "saw-tooth" on longtudinal section.

The gland epithelium shows difference in secretory response at the different levels. In the very tips of the glands there is little or no tortuosity. In the middle layer ther is greatest tortousity, and the epithelium is low and pale staining. The basal epithelium shows no secretory

activity at all. Accordingly these strata are called: compacta, spongiosa and basalis.

(4) Bleeding phase:(38)

Degenerative changes are seen in the upper layers, and desquamation occurs in the upper layers.

(5) Regeneration:(40)

After cessation of the menstruation, the surface is found to be copletely epithelized. Regeneration occurs only from the remaining basal glands and surface endometrium. Complete surfacing is comleted by 5 days and is indepedent of hormonal stimulus, although this is necessary for sub-sequent growth.(I2)

2-Histology of the Fallpian Tube.

The Fallopian tubes are muscular ducts which connect the uterus with the ovaries. The musculature of the woman oviduct consists of inner longitudinal, an intermediary cirular and outer longitudinal layer. The muscular layers are covered by a serosal layer composed of methothelium continous with that of the peritoneum and connective tissue.(I7)

In the resting tube there are three types of lining cells:(39)

(I) Ciliated cells: their height varies at different phases of the cycle. In the interval phase they are tall and broad, with supeficially placed nuclei, often towards the ciliated edge of the cell. Their cilia are long and very vigoursly motile.

(2) Secretory cells:these cells are narrow cylindrical and non ciliated and their height varies at different stages of the cycle. Immediately after menstruation they are low, become tall in the interval and remain tall en the premenstrual phase, but again become low during menstruation.

The nuclei are deeply placed in the cells.

(3) Peg cells or intercalary cells: they resemble long slender

rod-like nuclei squeezed at frequent interval between the adjoining cells, like slender pegs. Propably peg cell is a secretory cell emptied of its content.

Cyclic changes: (50)

The epithelium of the tube undergoes cyclic changes comparable with those in the endomtrium but less conspicious.

In the interval phase the epithelium is uniformly tall, the ciliated cells being broad, with nuclei near their free margin, while the non ciliated cells are somewhat narrow and their nuclei are deeply placed.

In the premenstrual phse, the ciliated cells are lower so that the secretory cells project beyond them giving the epithelium a ragged uneven appearance. The secretory cells shows a bulbous herniation into the tube lumen, after carrying the mucleus with it.

In the menstrual phase, the pre-menstrual changes are carried farther, the epithlium becoming quite low, but the secretory cells having been emptied of their secretion are also much lower than in the premenstrual phase. Peg cells are numer-ous, propably merely emptied secretory cells.

3-Endometrial Changes With Steroid Contraceptives

The endometrium is the easily accessible and organ which reacts quite sensitivly and characteristically to steroid hormones.(I9)

Roland et al.,(I964)(59), and Roland, (I966)(60) in a study of the effect of progestrone combined with oestrogenpills, the so called combination pills, classified their observation wether the patients were ovulated or not.

In ovulating women there was no predictable effect of the exogenous steroids on the surface epithelium. The endometrium components could not be differentiated from that of untreated subjects although it exhibits a pserdostratification in the small percentage of cases.

Glandular proliferation was either dimished or inhibited, but there was transient glandular secretion in the early portion of the cycle, a distinct and imprtant deviation from the untreated state. Stromal proliferation was also reduced in the later part of the cycle, there was frequently a decidua like response more extensive than that of untreated cycle.

After 20 days treatment there was reduced proliferation of the spiral arteriols but exagerated development of the network of capillaries of the zona compacta. When the does of progestrone was increased, the endometrial glands were of the anovulatory types, in some instances, therewas a focal patchy predecidual reacion. There was no arteriolar development i.e. the pattern of endometrial suppression.

In anovulatory patients, the endometrial response to progestrone-oestrogen compounds is highly variable and may depend primarily on the etiology underling the interruption of hypothalamo-pituitary ovarian function (Roland, I965 [60]).

Maques et al., (1964) [36] studied the effect of sequetial estrogen-progestrone combination on the endometrium found that:

(I) Estrogen alone produced; a "midestrogenic" endometrium with some degree of stroma oedema.

(2) When progestin was added it lead to secretory trasformation such that the endometrium was a week behind its development,