STUDY OF MENSTRUAL ABNORMALITIES BY ENDOMETRIAL HISTOPATHOLOGY

THESIS

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And Gynaecology

BY

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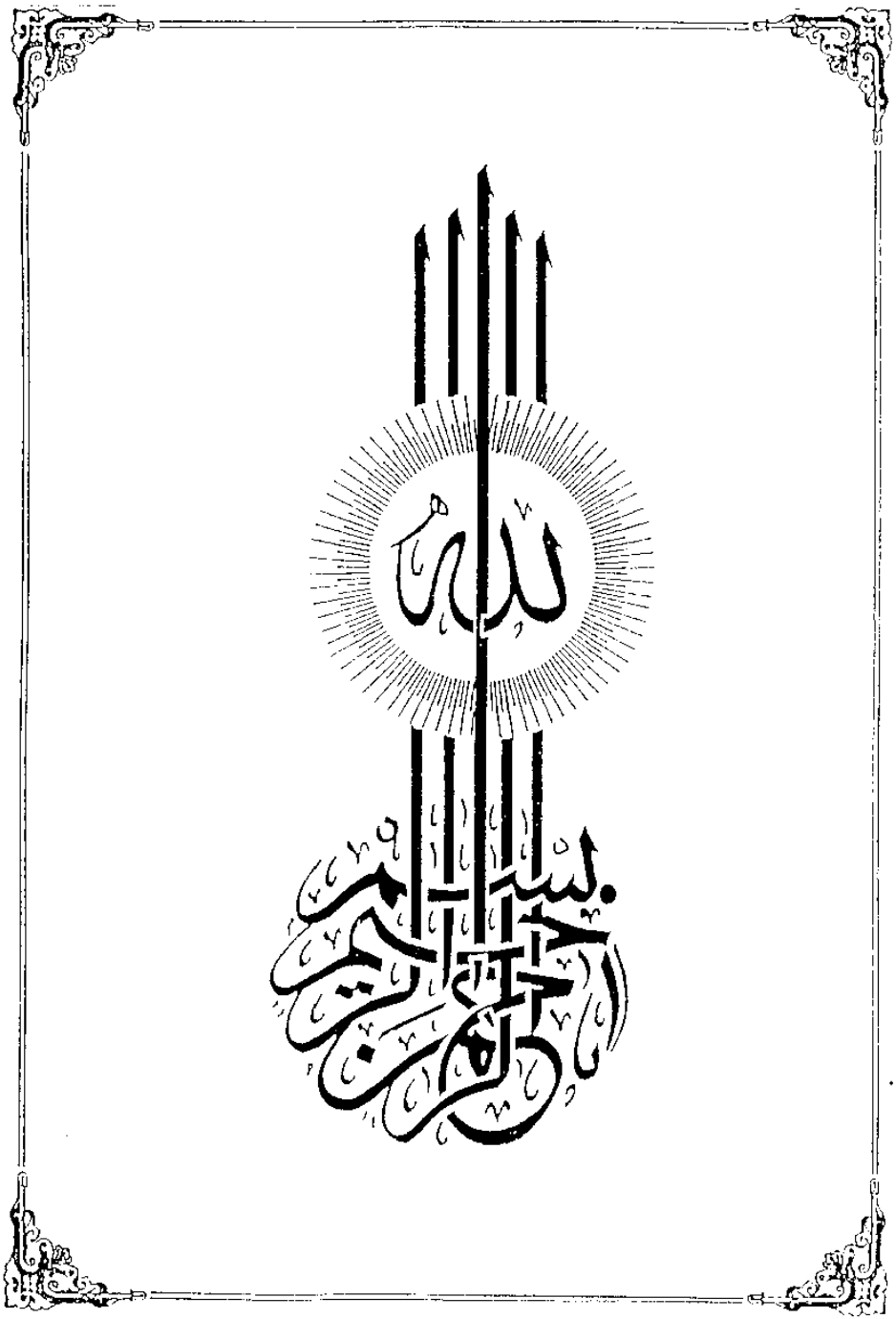

C O N T E N T S

INTRODUCTION

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Menstrual disorders and irregular uterine bleeding are among the commonest gynaecological complaints. They occur at all ages from infancy to senility. In some cases, they mean nothing more than a temporary maladjustment of the adolescence or the menopause, in other instances, they are an indication of malignancy or other gynaecological disease.

It is the grave responsibility of the physician to be able to identify these various types of uterine bleeding, determine the cause and institute proper treatment at once.

These disorders are classified as organic or functional. Organic disorders include those which are due to a definite pathologic condition such as incomplete abortion, cancer or myoma.

Irregular genital bleeding is classified as functional if we cannot attribute it to any pathologic condition. Obviously, the more we know about normal and abnormal genital bleeding, the smaller will become the category offunctional bleeding.

In every case of abnormal bleeding or any menstrual disordr in an adult woman, the lst problem is to establish an exact diagnosis and eliminate the possibility

of malignancy. In an adult woman, this means a careful gynaecological examination and if there is any doubt, it requires also a diagnostic curettage and biopsy.

ENDOMETRIAL PHASES DURING THE MENSTRUAL CYCLE

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The normal endometrial cycle, (Menstrual cycle). The endometrial changes during the menstrual cycle may be divided into four phases, proliferation, secretion, premenstrual regression and menstrual desquamation.

e Proliferative phase :

At the beginning of the proliferative stage, the endometrium consists of a thin membrane, about 1 mm in thickness, it is composed chiefly of the basalis, with a part of the next layer (the spongiosa). The rest of the endometrium has been cast off. From this layer, the endometrium is regenerated every month. This stage of endometrial proliferation is synchronous with the stage of follicular proliferation in the ovary and the elaboration of estrone. This stage therefore continues till the ovum matures and escapes from the ripe follicle, then estrone production probably diminishes, the corpus luteum begins to develop.

The various changes in the successive stage of the endometrial cycle are evident in the epithelium, the stroma and the blood vessels.

(1) Epithelium of early proliferative phase :

At the beginning of regeneration, the uterine cavity is lined by a raw surface, caused by the menstrual desquamation of the endometrium.
This surface is quickly covered over within a day or two probably, by the proliferation of epithelium from the mouths of open uterine glands. The glands are narrow and straight. Their course is almost a straight line from the basalis to the surface of the uterine cavity. They are also narrow, the epithelial cells of the opposite walls almost or actually touching each other. Hence, these glands appear to have very small cavities.

(2) The individual cells :

The protoplasm takes the red colour with eosin, the cells margins are sharp, especially where they are exposed to the cavity of the gland. The nuclei tend to be situated baselly, in the deeper part of the cell. The nuclei may be round or oval or slender, with appropriate staining, mitosis are visible in the glandular epithelium.

(3) Stroma :

In the deeper part of the endometrium (the basalis), the stroma is quite dense. In the superficial

layer, which has just been regenerated, the stroma is looser. In the basalis, the nuclei stain more deeply than in the superficial layer. The nuclei in the basalis are dense and small. In the superficial layer, the nuclei are rounder, more vesicular and larger.

(4) Blood vessels :

They are numerous small vessels all through the stroma, in same places these vessels are as large as the glands showing that the tissue is very vascular. There is no extravasated blood or lymphocytic infiltration in normal endometrium at this stage.

e Late proliferative phase :

Due to continuous stimulation of oestrone from the ripening graafianfollicle, the proliferative changes become more marked.
The total thickness of the endometrium increases, so that it now measures 3 mm in depth in some places.

(1) Epithelium:

Changes are beginning to show in both the general configuration of glands and also in the cytology of the individual cells. The glands are larger, their lumina are bigger. There is now a definite space in

most of these glands, whereas in the early proliferative stage many of the glands had no visible cavities. The glands are also not quite so straight, they show curves and infolding of the walls, in places, because of their increase in size, they are closer together and occupy more of the stroma.

(2) The individual cells :

They have sharp cell membranes and can be distinguished as separate cells in the glands. The surfaces of the cells that are exposed to the cavity of the glands are sharply delineated by a cell membrane that is every where smooth and intact. The protoplasm is acidophilic. There are occasional vacuoles in the protoplasm, the nuclei occasionally show a tendency to leave the base of the cell and many are now situated in the middle of the cell. The nuclei are normal or oval and vesicular; Occasional vacuoles are found between the nucleus and the base of the cell.

(3) Stroma :

The stroma is still quite dense, especially in the basalis, in the more superficial layer, the stroma cells are very evenly spaced, have fairly uniform round

or oval nuclei. The nuclei are larger than in the basalis. The nuclei are fairly clear. The protoplasm of the stroma cells is ill defined.

(4) Blood vessels :

The tissue is extremely vascular, the multiplicity of small vessels, engorged with red blood cells, suggests some more rapidly growing tissue. The blood vessels are intact with no extravasation of blood cells.

⇒ Secretory phase :

This begins with ovulation and the formation of the corpus luteum. It lasts as long as the corpus luteum continues to secrete progesterone. If the ovum is not fertilized, the corpus luteum begins to degenerate. The total thickness of the secretory endometrium is much increased and varies from 5-6 mm deep.

In general, at this stage, the endometrium begins to differentiate into three layers, the basalis, the spongiosa and compacta.

The basalis has already been described and maintains its characteristic inactivity through the secretory stage. The basal glands become more tortuous but do not share in the striking corkscrew contortions or fuzzy appearance of the secretory glands of the upper layer.

The spongiosa constitutes the middle layer, it is characterized by the sponginess of its appearance due to the large, dilated and tortuous uterine glands. The compacta is the superficial layer, the glands become so straighter and narrow in this area and the stroma constitutes a much larger portion of the tissue. This zone looks much denser than the spongiosa.

(1) Epithelium :

The glands have the characteristic corkscrew appearance. In the spongiosa; they are markedly dilated, their walls are irregular and uneven. In the compacta, they are narrower and straight but preserve these general features, the cavities of these glands are often filled with secretion.

(2) The individual cells :

There is raggedness of the surface that lines the gland cavity, the regular, sharp, limiting membrane is gone in many places; the outer half or third of the cell has disappeared and left a frayed line of tissue. The nuclei are seen exposed in many places to the cavity of the gland. The nuclei vary in their situations, some of them are basal, others in the middle -

third . and others apparently lie uncovered in the peripheral part of the cell. In some places the individual glands have entierly slaughed off, leaving the basement membrane as basilar part of the cell exposed.

(3) Stroma :

Now we see the beginning of the typical decidual reaction. The stroma cells become larger, the protoplasm is clearly defined and sharply limited. The processes of the stroma cells extend out into the surrounding tissue. The nuclei become larger and more vesicular. The stroma becomes much looser and the cells farther apart, these changes are noted especially in the spongiosa and completa.

In the basalis, the stroma cells tend to retain their in active features, they have dark stained dens. nuclei, the cell membranes are indistinct and the tissue is very dense.

(4) Blood vessels:

The endometrium is excessively vascular, every part of it is a network of blood vessels, all full of blood, there is no extravasation of blood into the stroma and no infiltration of white blood cells.