Pathological Causes

Of

Abnormal Uterine Bleeding

A Thesis

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بسم الله الرحمن الرحيم

"قالوا سبحانك لا علم لنا إلا ما علمتنا

إنك أنت العليم الحكيم"

صدق الله العظيم

(البقرة 32)

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Summary

Abnormal uterine bleeding (AUB) is a common complaint that affects virtually every woman at some point of her life. AUB is a source of great concern to those affected. Bleeding is frequently associated with fatigue, discomfort, and depression that affect the quality of life, including limitation of activity and alterations in sexual functions.

AUB is estimated to be responsible for about 20% of gynaecologic related visits to physicians in the United States. It is estimated that more than half a million hysterectomies because of AUB are performed annually in USA.

In the Libyan Arab Jamahiriya, large numbers of women are visiting gynaecologic sections in hospitals and private clinics because of AUB. The size of the problem is not exactly documented. We also have particular habits which may influence the problem; for example the younger age of marriage for girls and the paucity of contraception measures, which increase the parity with its consequent problems.

This work investigates the problem of abnormal uterine bleeding in the Jamahiriya beginning by a limited study in Ibn Sina hospital in Sirte. The materials are obtained from patients presenting to the hospital complaining of AUB during the period of the study. Clinical and laboratory examination were performed. Biopsy materials were also obtained from patients. Both D&C biopsy and hysterectomy specimens were included.

Biopsy materials of all cases were examined by the routine H & E light microscopy technique. Some cases were also examined by the transmission electron microscope.

According to hospital admission records, a total number of 4925 women attended the hospital during 16 months from January 1st 2007 to

April 30th 2008. About 11.9 % (587) of the total admission is attributed to AUB. This figure is lower than figures in USA and Australia (19.1 % and 30 %, respectively), most probably due to strict insurance programs of the health care in these western countries and the conservative attitude of our ladies to consult doctors for all gynaecologic problems.

The number of 587 cases presented as AUB includes; 342 (58.26 %) had pregnancy related AUB, while 245 (41.73 %) had AUB not related to pregnancy. The cases are classified into 18 groups according to the causes of AUB.

In the present study the most frequent cause of AUB was attributed to simple endometrial hyperplasia (23.67%). The majority of cases (65.5 %) were in the perimenopausal age, 22.4 % were in the child-bearing period, and 12.1 % were in the postmenopausal age.

The second main cause of AUB is the disordered proliferative endometrium (14.28 %). This is usually related to anovulatory cycles, where we find proliferative endometrium at the time of the cycle when a secretory pattern is expected. The majority of the cases (60 %) are in the child-bearing age group and this agrees with the fact that anovulatory cycles are seen in this age group.

Leiomyoma is the third common cause of AUB in the studied group. It represents 12.65 % in the cases of AUB not related to pregnancy. This agrees with the results (14 %) obtained in UK in the year 1995. It was noted that 70.9 % of these patients were single and this agrees with other studies which showed that leiomyoma are more common in nulliparous women.

Problems related to secretory phase of the menstrual cycle were seen in 11.83 % of cases of AUB. The mean age group was 35.24 years, which coincides well with being in the child-bearing group. All women in this group were married and 86.2 % had living children.

In the present study, the fifth common cause (10.2 % of the cases) was the presence of atrophic endometrium. This group included relatively older women with a mean age of 57.36; 60 % of them were in the postmenopausal age group, while 40 % were in the perimenopausal age group. Atrophic endometrium is known to be responsible for AUB in up to 80 % of postmenopausal women.

The rest of the cases were due to other causes in small percentages. These include; complex endometrial hyperplasia (8.16 %), endometrial polyps (8.16 %), cervical polyps (4.48 %), irregular shedding of the endometrium (2.04 %), adenomyosis (1.63 %), non-specific (1.63 %) and specific (0.81 %) chronic endometrium and carcinoma of the body of the uterus (0.81 %).

A total number of 342 females had AUB related to pregnancy. They include molar pregnancy, ectopic pregnancy, and some miscellaneous causes. However, the majority of the cases (74.5 %) were related to variable stages of abortion.

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INTRODUCTION

Introduction

Abnormal uterine bleeding (AUB) is a common complaint that affects virtually every woman at some point in her life. AUB is a source of great concern to those affected. Bleeding is frequently associated with fatigue, discomfort, and depression, thus having a detrimental effect on quality of life, including limitation of activity and alterations in sexual functions. AUB imposes as well a significant financial burden as a result of missed workdays and the cost of medical and surgical treatment (Uy, 2007; Kuppermann et al., 2004; Munro, 2001; O'Leary & Tejura, 2005).

AUB is estimated to be responsible for about 20% of gynaecologic related visits to physicians in the United States (Albers et al., 2004). It is estimated that more than half a million hysterectomies because of AUB are performed annually in USA (Uy, 2007; Munro, 2000; Oriel & Schrager, 1999).

In the Libyan Arab Jamahiriya, large numbers of women are visiting gynaecologic sections in hospitals and private clinics because of AUB. The size of the problem is not exactly documented. We also have particular habits which may influence the problem; for example the younger age of marriage for girls and the paucity of contraception measures, which increase the parity with its consequent problems.

AIM OF THE WORK

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The aim of this work is to investigate the problem of abnormal uterine bleeding in the Jamahiriya beginning by a limited study in Ibn Sina hospital in Sirte with the following objectives:

- Evaluation of incidence of various causes of AUB by tissue examination, using light microscopy and transmission electron microscopy.
- Correlation of histopathological findings with age, parity, and other associated lesion.
- Comparison of the findings with the recent literature.
- A trial to plan preventive methods to control the causes of this serious problem (AUB) affecting women health in the Jamahiriya.

LITERATURE REVIEW

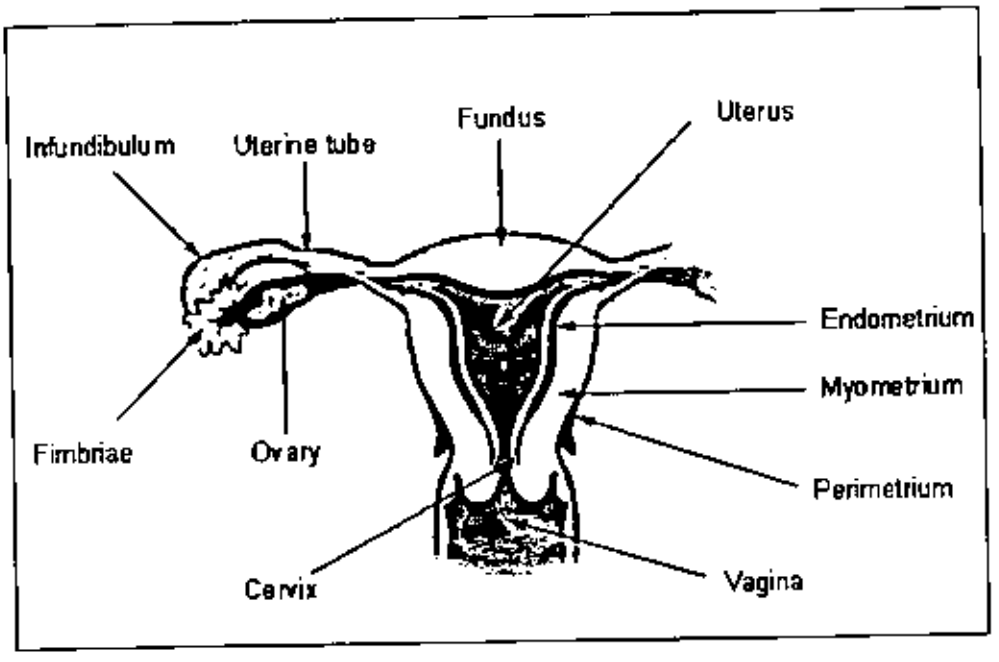
Literature Review

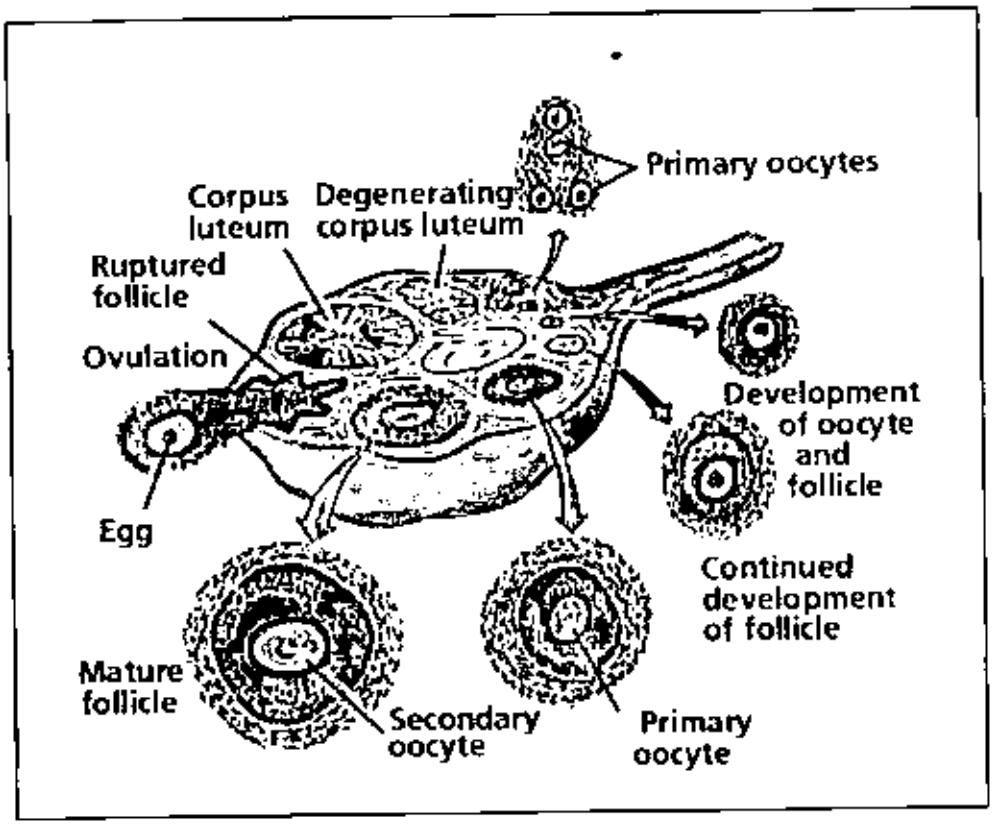
The female reproductive system includes the paired ovaries, Fallopian tubes (oviducts), the uterus, and the vagina (fig. 1).

The reproductive organs are incompletely developed and remain in a state of rest until gonadotropic hormones secreted by the pituitary gland signal the initiation of puberty. Thereafter, many changes take place in the entire reproductive system, including further differentiation of the reproductive organs, culminating in menarche, the first menstrual flow, ranging from 9 to 15 years of age with an average age of 12.7 years. After the first menstrual flow, the menstrual cycle, which involves many hormonal, histological, and psychological changes, is repeated each month (28 days) throughout the entire reproductive years unless it is interrupted by pregnancy. As a woman approaches the end of her reproductive years, her menstrual cycles become less regular as hormonal and neurological signals begin to change, and menopause is initiated. Eventually, menstrual cycles cease after menopause, and limited involution of the reproductive organs occurs (Gartner & Hiatt, 2001).

Oogenesis:

Female sex cells, or gametes, develop in the ovaries by a form of meiosis called oogenesis. Early in fetal development, primitive germ cells in the ovaries differentiate into oogonia. These divide rapidly to form thousands of cells, still called oogonia, which have a full complement of 46 chromosomes (23 pairs). Oogonia then enter a growth phase, enlarge, and become primary oocytes. The diploid (46 chromosomes) primary oocytes replicate their DNA and begin the first meiotic division, but the process stops in prophase and the cells remain in this suspended state until puberty. Many of the primary oocytes degenerate before birth, but


Infundibulum
Uterine tube
Fundus
Uterus
Endometrium
Myometrium
Perimetrium
Fimbriae
Ovary
Cervix
Vagina


Primary oocytes
Corpus luteum
Degenerating corpus luteum
Ruptured follicle
Ovulation
Development of oocyte and follicle
Egg
Continued development of follicle
Mature follicle
Secondary oocyte
Primary oocyte

even with this decline, the two ovaries together contain approximately 700,000 oocytes at birth. This is the lifetime supply, and no more will develop. By puberty the number of primary oocytes has further declined to about 400,000 (Gartner & Hiatt, 2001).

Beginning at puberty, under the influence of follicle-stimulating hormone, several primary oocytes start to grow again each month. One of the primary oocytes seems to outgrow the others and it resumes meiosis I. The other cells degenerate. The large cell undergoes an unequal division so that nearly all the cytoplasm, organelles, and half the chromosomes go to one cell, which becomes a secondary oocyte. The remaining half of the chromosomes go to a smaller cell called the first polar body. The secondary oocyte begins the second meiotic division, but the process stops in metaphase. At this point ovulation occurs. If fertilization occurs, meiosis II continues. Again this is an unequal division with all of the cytoplasm going to the ovum, which has 23 single-stranded chromosomes. The smaller cell from this division is a second polar body. If fertilization does not occur, the second meiotic division is never completed and the secondary oocyte degenerates (Gartner & Hiatt, 2001).

Ovarian Follicle Development:

An ovarian follicle consists of a developing oocyte surrounded by one or more layers of cells called follicular cells (fig. 2).

At the same time that the oocyte is progressing through meiosis, corresponding changes are taking place in the follicular cells. Primordial follicles, which consist of a primary oocyte surrounded by a single layer of flattened cells, develop in the fetus and are the stage that is present in the ovaries at birth and throughout childhood.

Beginning at puberty follicle-stimulating hormone stimulates changes in the primordial follicles. The follicular cells become cuboidal, the primary oocyte enlarges, and it is now a primary follicle. The follicles

continue to grow under the influence of follicle-stimulating hormone, and the follicular cells proliferate to form several layers of granulosa cells around the primary oocyte. Most of these primary follicles degenerate along with the primary oocytes within them, but usually one continues to develop each month. The granulosa cells start secreting estrogen and a cavity, or antrum, forms within the follicle. When the antrum starts to develop, the follicle becomes a secondary follicle. The granulosa cells also secrete a glycoprotein substance that forms a clear membrane, the zona pellucida, around the oocyte. After about 10 days of growth the follicle is a mature vesicular (Graafian) follicle, which forms a blister on the surface of the ovary and contains a secondary oocyte ready for ovulation (Gartner & Hiatt, 2001).

Ovulation:

Ovulation, prompted by luteinizing hormone from the anterior pituitary, occurs when the mature follicle at the surface of the ovary ruptures and releases the secondary oocyte into the peritoneal cavity. The ovulated secondary oocyte, ready for fertilization, is still surrounded by the zona pellucida and a few layers of cells called the corona radiata. If it is not fertilized, the secondary oocyte degenerates in a couple of days. If a sperm passes through the corona radiata and zona pellucida and enters the cytoplasm of the secondary oocyte, the second meiotic division resumes to forms a polar body and a mature ovum.

After ovulation and in response to luteinizing hormone, the portion of the follicle that remains in the ovary enlarges and is transformed into a corpus luteum. The corpus luteum is a glandular structure that secretes progesterone and some estrogens. Its fate depends on whether fertilization occurs. If fertilization does not take place, the corpus luteum remains functional for about 10 days then it begins to degenerate into a corpus albicans, which is primarily scar tissue, and its hormone output ceases. If

fertilization occurs, the corpus luteum persists and continues its hormone functions until the placenta develops sufficiently to secrete the necessary hormones. Again, the corpus luteum ultimately degenerates into corpus albicans, but it remains functional for a longer period of time (Gartner & Hiatt, 2001).

The Uterus:

The uterus is a muscular organ that receives the fertilized oocyte and provides an appropriate environment for the developing fetus. Before the first pregnancy, the uterus is about the size and shape of a pear, with the narrow portion directed inferiorly. After childbirth, the uterus is usually larger, but regresses after menopause.

The uterus wall consists of three layers; the lining endometrium, the muscular myometrium, and the covering serosa or perimetrium.

The Endometrium:

Embryologically, the human endometrium is of mesodermal origin, and constitutes the mucosal lining of the fused Mullerian ducts of the uterus (Ferenczy & Bergeron, 1991).

The endometrium consists of a single layer of columnar epithelium, resting on a layer of connective tissue (the stroma) which varies in thickness according to hormonal influences. Simple tubular uterine glands reach from the endometrial surface through to the base of the stroma, which also carries a rich blood supply of spiral arteries.

In a woman of reproductive age, two layers of endometrium can be distinguished. These two layers occur only in endometrium lining the cavity of the uterus, not in the lining of the Fallopian tubes:

- ***The functional layer (or zona functionalis)*** is adjacent to the uterine cavity. This layer is built up after the end of menstruation during the proliferative phase. Proliferation is induced by estrogen (follicular phase

of menstrual cycle), and later increased by the progesterone from the corpus luteum (luteal phase). It is adapted to provide an optimum environment for the implantation and growth of the embryo. This layer is completely shed during menstruation.

- ***The basal layer (or zona basalis),*** adjacent to the myometrium and below the functional layer, is not shed at any time during the menstrual cycle, and from it the functional layer develops.

In the absence of progesterone, the arteries supplying blood to the functional layer constrict, so that cells in that layer become ischaemic and die, leading to menstruation.

The normal endometrium consists of both epithelial (surface and glandular) and mesenchymal (stromal and vascular) elements, which during reproductive years first synchronously proliferate, then differentiate, and finally disintegrate at roughly monthly intervals.

Endometrial Epithelium:

The endometrial glandular and surface epithelia are both composed of four morphologically distinct cells; the proliferative cells, the secretory cells (two of which are functional variants of the same cell), and the ciliated cells.

A. The Proliferative or Basalis-type Cell:

The basalis-type cells and the proliferative cells of the functionalis are morphologically quite similar. These cells both have high nucleus-to-cytoplasm ratios and elongated sausage-shaped nuclei with dense chromatin and inconspicuous nucleoli. The cytoplasm is scanty and generally basophilic. Mitotic figures are common in the cells of the functionalis during the proliferative phase. When proliferative cells are the predominant cell type composing the epithelium (as in the proliferative endometrium), the nuclei appear pseudostratified (Sternberg, 1992).

• ***Ultrastructure of Proliferative Cells:***

Proliferative gland cells have well developed mitochondria. The Golgi apparatus has vesicles from which originate membrane-bound hydrophilic enzymes containing electron-dense primary lysosomes. Free and bound ribosomes which provide basic proteins are seen. Bundles of intermediate filaments serve as a cytoskeleton to the tall late proliferative gland cells.

Surface gland cells acquire numerous cilia and microvilli. Ciliary shafts have a strong forward and slow recovery ciliary beat pattern. Cilia are numerous around glands openings. These features are consistent with their role in facilitating mobilization and distribution of endometrial secretions during the progestational phase of the menstrual cycle. Surface microvilli serve to increase the overall cell surface. This situation enhances secretory, excretory, and adsorptive functions of gland cells (Ferenczy, 1976).

B. <u>The Secretory Cell:</u>

The characteristic cytoplasmic differentiation of the endometrial epithelial cell is nonmucinous secretion. Soon after ovulation, secretory products accumulate in a subnuclear location in the proliferative cells; these products gradually shift to a supranuclear position and are ultimately discharged into the glandular lumens.

This sequence of changes results in two easily recognizable secretory cell types: vacuolated and nonvacuolated secretory cells. The vacuolated cells have a nucleus similar to those seen in proliferative phase cells, whereas the nonvacuolated secretory cells possess nuclei that are quite distinct from those seen in proliferative phase cells. In contrast to the dense, intensely basophilic, elongated nuclei of the proliferative cells; the nuclei of the nonvacuolated secretory cells are rounded and

vesicular, they have uniformly dispersed chromatin, and occasionally nucleoli become prominent (Sternberg, 1992).

The non vacuolated secretory cells have uniform, moderately dense eosinophilic cytoplasm and often a frayed luminal border.

Another type of secretory cells is encountered, one that closely resembles the secretory cell of the fallopian tube. This cell has an elongated nucleus with coarse chromatin, a moderate amount of densely eosinophilic cytoplasm, and a rounded luminal bleb similar to those found in apocrine glands.

These cells are common in the surface epithelium and occasionally may line an entire endometrial gland. Some of these cells may in fact represent "exhausted" ciliated cells (Sternberg, 1992).

• ***Ultrastructure of Secretory Cells:***

On the 16th day of the menstrual cycle, small cylindrical vacuoles appear at the base of the gland cells in the functional layer. Otherwise, the epithelium is indistinguishable from that of the late proliferative phase; the glands cells remain tall with pseudostratified nuclei.

The vacuoles correspond to pools of glycogen granules. Mitochondrial gigantism, with increased numbers of cristae, occurs in response to the increased demand of energy for glycogen metabolism (Ferenczy et al., 1979; Wilikinson et al., 1990).

At the ultrastructural level, ovulation is manifested by the appearance of giant mitochondria and the socalled nucleolar channel system (NCS) formed by the helical enfolding of the nuclear membranes into the nuclear or nucleolar substance of the gland cell (More et al. 1974). NCS is seen as early as the 15th day of the cycle, but its significance is not known. These structures are unique to women and are seen only during the postovulatory phase (Wilikinson et al.,1990). The nucleolar channel system (NCS) is a well-established ultrastructural

hallmark of the postovulation endometrium. Its transient presence has been associated with human fertility. Nevertheless, the biogenesis, composition, and function of these intranuclear membrane cisternae are unknown (Kittur et al., 2007).

C. The Ciliated Cells:

The ciliated cells of the endometrium are consistently present in endometrial specimens and presumably represent one line of differentiation open to the basalis-type cell. They are more prominent near the uterine isthmus and during the proliferative phase (Denholm & More, 1980; Masterton et al., 1975; Schueller, 1968).

Ciliated cells have distinctive round, smoothly contoured vesicular nuclei containing finely stippled chromatin. The nuclear features remain relatively unchanged throughout cell development, but the configuration and location of ciliated cells vary as a function of the stage of ciliogenesis.

The earliest identifiable ciliated cells are situated adjacent to the basal lamina of the gland and are roughly pyramidal in shape. They possess distinctively clear cytoplasm with central round nuclei.

• ***Ultrastructure of Ciliated Cells:***

A rounded cytoplasmic zone containing eosinophilic fibrillary material can be identified with routine stains. This zone corresponds to the intracytoplasmic cilia seen with the electron microscope. When the growing ciliated cells reach the luminal surface the cilia are exposed to the glandular lumen. Initially, the luminal surface of the ciliated cell is concave, but as the cell continues its development this surface becomes convex; ultimately, the cilia may pinch off as a merocrine secretion. During this stage the cell has a characteristic fusiform-to-pear shape. Ciliated cells can come to predominate the cellular population of glands,

and when they do the term "ciliary metaplasia" has been used (More, 1974).

Endometrial Glands:

The normal endometrial gland is lined by simple cuboidal-to-columnar epithelium, which, during the proliferative phase, appears to be stratified (i.e., it is pseudostratified). During the early proliferative phase, the glands are straight and have narrow lumens. Beginning in the mid-proliferative period and lasting throughout the rest of the cycle, the glands exhibit increasing degrees of coiling, but not branching. This results in the serrated saw-toothed appearance of the glands in the late secretory and menstrual endometrium. The surface epithelium is composed predominantly of apocrine-like secretory cells and ciliated cells, and has a relatively constant appearance throughout the cycle (Sternberg, 1992).

Endometrial Stroma:

The dense, irregular collagenous connective tissue of the lamina propria is highly cellular and contains star-shaped cells, macrophages, leukocytes, stromal granulocytes, and abundance of reticular fibers (Gartner & Hiatt, 2001).

The endometrial stromal cells elaborate a reticulin framework that becomes progressively denser as the endometrium develops during the menstrual cycle, so that by the late secretory phase each stromal cell is enmeshed in reticulin. This framework undergoes dissolution during menstruation. The stromal intercellular space is also rich in high molecular weight mucopolysaccharides during the mid-proliferative and late secretory phase (Sternberg, 1992).

A. Stromal Cells:

The endometrial stromal cell is the predominant cellular component of the stroma and its appearance varies greatly with the stage of the menstrual cycle (Sternberg, 1992).

During the early proliferative phase these cells have scant indistinct cytoplasm and dense oval-to-fusiform nuclei. This undifferentiated appearance is reflected ultrastructurally in the paucity of cytoplasmic organelles. As the menstrual cycle proceeds, the stromal cells become more elongated and acquire more cytoplasm.

During the late proliferative phase and well into the secretory phase, electron microscopy reveals increasing amounts of rough endoplasmic reticulum and extracellular collagen.

Toward the end of the secretory phase, the stromal cells in the perivascular region become rounded, acquire more cytoplasm, and develop vesicular nuclei with occasionally prominent nucleoli. Cytoplasmic borders become generalized and fully developed, so that the entire endometrial stroma is transformed into sheets of cells with sharp and distinct cytoplasmic borders, abundant cytoplasm, and centrally placed vesicular nuclei. This unique Mullerian stromal transformation is called decidualization when fully developed e.g. during pregnancy, and predecidualization when partially developed, e.g. during the late secretory phase of the menstrual cycle (Kearns & Lala, 1983).

Ultrastructurally, the abundant cytoplasm of the decidual cell is populated by dilated rough endoplasmic reticulum, Golgi apparatus, and distinctly small mitochondria. Decidual cells form basal lamina and have complex intercellular interdigitations and tight junctions (Sternberg, 1992).

B. Stromal Granulocytes:

A second prominent cellular constituent, particularly in the late secretory phase, is the stromal granulocyte. Early ultrastructural and histochemical studies suggested that a subset of these granulocytic cells was distinct from the marrow-derived granulocytes, and it was thought that such cells were responsible for relaxin production and were histogenetically related to the endometrial stromal cell (Cardell et al., 1969; Bryant-Greenwood, 1982; Dallenbach-Hellweg et al., 1965; Yki-Jarvinen et al., 1983; Weiss, 1984; Dallenbach-Hellweg, 1981). In recent years with the use of modern immunohistochemical techniques it has become apparent that the stromal granulocytes are hematolymphoid cells and represent either a subpopulation of T lymphocytes or macrophages (Bulmer & Sunderland, 1983; Press & King, 1986; Marshall & Jones, 1988; Kamat & Issacson, 1987; Bulmer et al., 1988).

Lymphocytes are normal constituents of the endometrial stroma and may aggregate to form lymphoid follicles (Tabibzadeh, 1990; King et al., 1989; Morris et al., 1985; Sen & Fox, 1967). It has traditionally been held that plasma cells are abnormal. Certainly this is plausible when many are present, although the pathological significance of scattered plasma cells is unknown (Sternberg, 1992).

The ordinary neutrophil is typically present in the normal menstrual and immediately premenstrual endometrium (Sternberg, 1992).

C. Stromal Foam Cells:

Frequently, cells with bean-shaped nuclei and abundant vacuolated lipid-containing cytoplasm are present in the endometrial stroma stimulated by estrogen. These have been termed *stromal foam cells*, and their origin has been disputed. Dallenbach-Hellwig believes them to be of stromal rather than histiocytic origin (Dallenbach-Hellweg, 1981; Dallenbach & Rudolph, 1974).

Endometrial Vasculature:

The endometrial vasculature exhibits a unique adaptability throughout the reproductive years; it is centrally involved in menstruation and is responsible for forming a successful interface with the fetal circulation. The spiral arterioles of the endometrium are the primary site of these activities (Burchell et al., 1978).

The radial arteries of the endometrium derive from the myometrial arcuate system. As the radial arteries course toward the uterine cavity they give off basal branches (supplying the basalis) and then continue as endometrial spiral arteries (supplying the functionalis). The basal arteries are unresponsive to steroid hormones, whereas the spiral arteries respond to varying hormone levels both by proliferation and, during the luteal phase of the menstrual cycle, by intermittent contraction.

In the early proliferative phase the sprouting spiral arteries are thin-walled and straight. As the proliferative phase proceeds, they, along with the glands, become coiled and their walls increase in thickness. During the luteal phase this growth continues. If implantation fails to occur, declining steroid levels are accompanied by longer and longer periods of vascular contraction. This results in ischemic necrosis of the functionalis and its subsequent sloughing (Farrer-Brow et al., 1970).

The Normal Menstrual Cycle:

To understand abnormal uterine bleeding, it is important to review the normal menstrual cycle. There is tremendous cycle variability among women. A typical cycle interval varies from 21 to 35 days, with an average duration of blood flow of 2 to 8 days. Estimated blood loss in a normal menstrual cycle is between 30 and 80 ml (Bayer & DeCherney, 1993).

The menstrual cycle is regulated by the pituitary-hypothalamic axis. The production of gonadotropin-releasing hormone (GnRH) from the hypothalamus causes secretion of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) from the pituitary (Fazio & Ship, 2007).

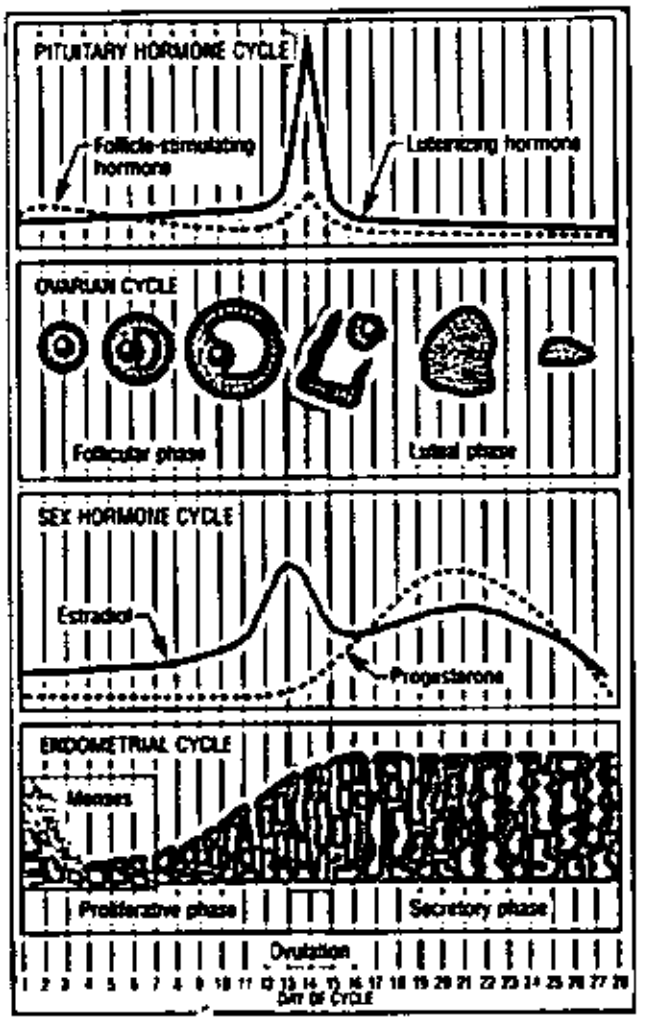
Under the influence of FSH, several ovarian follicles begin to develop. The ovary subsequently produces more estrogen with this stimulation, which functions as a negative feedback on FSH, allowing all but one or two dominant follicles to persist. During this phase, estradiol feedback on the pituitary causes increase in LH secretion, which causes a small amount of progesterone production, stimulating an LH surge 34-36 hours before follicle rupture and ovulation. Once this occurs, the ovarian granulosa cells produce progesterone for about 14 days but involutes thereafter unless pregnancy is established.

Estrogen acts to increase the thickness and vascularity of the endometrial lining; progesterone increases its glandular secretion and vessel tortuosity. Withdrawal of sex steroids by involution of the corpus luteum results in endometrial sloughing and menstrual bleeding (Fazio & Ship, 2007).

Menopause occurs when a woman's reproductive cycles stop. This period is marked by decreased levels of ovarian hormones and increased levels of pituitary follicle-stimulating hormone and luteinizing hormone. The changing hormone levels are responsible for the symptoms associated with menopause (Gartner & Hiatt, 2001).

Phases of the menstrual cycle:

The events of the menstrual cycle are shown in fig. 3. The menstrual cycle is divided into three phases (Mayeaux, 2005) as follows:


PITUITARY HORMONE CYCLE
Follicle-stimulating hormone
Luteinizing hormone
OVARIAN CYCLE
Follicular phase
Luteal phase
SEX HORMONE CYCLE
Estradiol
Progesterone
ENDOMETRIAL CYCLE
Menses
Proliferative phase
Secretory phase
Ovulation
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day of Cycle

A. Menstrual phase (days 1-4):

The first day of a typical cycle (day 1) corresponds to the first day of menses, which involves the disintegration and sloughing of the functional layer of the endometrium.

B. Proliferative (follicular) phase (days 5-14):

It is marked by endometrial proliferation brought on by estrogen stimulation. During the follicular phase, FSH levels increase, causing a dominant follicle to mature and produce estrogen in the granulosa cells. With estrogen elevation, menstrual flow ceases, the endometrium proliferates, and positive feedback is exerted on LH, resulting in the ovulatory phase (Speroff et al., 1999).

The estrogen is produced by the developing ovarian follicles under the influence of follicular stimulating hormone (FSH). There is a marked cellular proliferation of the endometrium and an increase in length and coiling of the spiral arteries. Endometrial glands develop and contain some glycogen. This phase ends as estrogen production peaks at day 14, triggering the FSH and luteinizing hormone (LH) surge, and ovulation (Neese, 1989).

C. Secretory (luteal) phase (days 15-28):

This phase is marked by production of progesterone and less potent estrogens by the corpus luteum (Bayer & DeCherney, 1993). The functionalis layer of the endometrium increases in thickness, and the stroma becomes edematous. The glands become tortuous with dilated lumens and stored glycogen. If pregnancy occurs, the placenta produces human chorionic gonadotropin (HCG) to replace progesterone, and the endometrium (and pregnancy) is maintained.

If pregnancy does not occur, the estrogen and progesterone feed back to the hypothalamus, and FSH and LH production falls. The spiral arteries become coiled and have decreased blood flow. At the end of this

period, they alternately contract and relax, causing disintegration of the functionalis layer and menses (Mayeaux, 2005).

The normal pattern of menstruation begins between 12 and 13 years of age, with a range of 9-16 years. It may take up to 5 years to establish orderly ovulatory cycles (Shangold et al., 1990; Prior et al., 1982). The average age of menopause is 51 (range, 45-55). The mean interval of the cycle is 28 days (range, 21-35), and duration of the mense is 4 days (range, 2-7). Average blood loss determined by laboratory methods is 35 mL. About 95% of women lose less than 60 mL, and blood loss above 60-80 mL correlates with significantly lower hemoglobin and serum iron levels (Wall & Roos, 1990; Shoupe et al., 1991; Kaunitz, 1993).

Abnormal Uterine Bleeding (AUB):

Abnormal uterine bleeding is a common but complicated clinical presentation. Except for self-limited, physiologic withdrawal bleeding that occurs in some newborns, vaginal bleeding before menarche is abnormal (Hill et al., 1989).

In women of childbearing age, abnormal uterine bleeding includes any change in menstrual-period frequency or duration, or amount of flow, as well as bleeding between cycles (Livingstone & Fraser, 2002).

In postmenopausal women, abnormal uterine bleeding includes vaginal bleeding 12 months or more after the cessation of menses, or unpredictable bleeding in postmenopausal women who have been receiving hormone therapy for 12 months or more (Lethaby et al., 2003).

Table 1: Terms used to describe abnormal patterns of uterine bleeding (Speroff et al., 1999).

Condition	Definition
Amenorrhea	Absence of menses > 6 months.
Intermenstrual	Bleeding between regular cycles.
Menometrorrhagia	Prolonged or excessive bleeding at irregular intervals.
Menorrhagia (hypermenorrhea)	Prolonged (>7 days) or excessive bleeding (> 80 ml) at regular intervals.
Metrorrhagia	Bleeding at irregular and frequent intervals.
Oligomenorrhea	Regular bleeding at intervals of > 35 days.
Polymenorrhea	Regular bleeding at intervals of < 21 days.
Dysfunctional uterine bleeding	Excessive endometrial bleeding that is not related to anatomic or systemic disease (anovulatory bleeding).

Etiology of abnormal uterine bleeding:

Abnormal uterine bleeding is a common event that may occur in the prepubertal age group, the reproductive age group where it includes pregnancy related conditions, and in the postmenopausal age group. AUB vary depending on a woman's reproductive status. The evaluation of symptoms is most easily approached by considering whether a patient is premenopausal, perimenopausal, or postmenopausal. While considerable overlap in etiology may occur, there are important differences regarding differential diagnosis, evaluation, and management in each group.

A. AUB in prepubertal age group (before menarche):

Malignancy, trauma, and sexual abuses are potential causes of abnormal uterine bleeding before menarche. A pelvic examination (possibly under anesthesia) should be performed, because a reported 54 percent of cases involve focal lesions of the genital tract, and 21 percent of these lesions may be malignant (Hill et al., 1989).

B. AUB in the childbearing age (reproductive age):

Pregnancy is the first consideration in women of childbearing age who present with abnormal uterine bleeding (Shwayder, 2000; Oriel & Schrager, 1999). Potential causes of pregnancy-related bleeding include spontaneous pregnancy loss (miscarriage), ectopic pregnancy, placenta previa, abruptio placentae, and trophoblastic disease. Patients should be questioned about cycle patterns, contraception, and sexual activity. A bimanual pelvic examination (seeking uterine enlargement), a beta-subunit human chorionic gonadotropin test, and pelvic ultrasonography are useful in establishing or ruling out pregnancy and pregnancy-related disorders. These disorders include; implantation, ectopic pregnancy,

abortion, molar pregnancy, placenta previa, placenta abruption, and uterine rupture (Fazio & Ship, 2007).

C. AUB in premenopausal age group:

In this age group, after excluding pregnancy, ovulatory versus nonovulatory bleeding is the most important cause (Fazio & Ship, 2007);

1. Pregnancy:
    a. Ectopic pregnancy.
    b. Spontaneous abortion.
    c. Placenta previa abruption.
2. Polycystic ovarian syndrome.
3. Hypothalamic dysfunction.
4. Endocrine dysfunction.
5. Uterine disease (fibroids).
6. Cervical disease.
7. Vaginal and vulvar diseases.
8. Medications (oral contraceptives).
9. Systemic illness (coagulopathies).

D. AUB in perimenopausal age group:

Four major conditions are responsible;

1. Pregnancy.
2. Anovulation (dysfunctional uterine bleeding).
3. Fibroids.
4. Endometrial disease.

Dysfunctional Uterine Bleeding (DUB):

Dysfunctional uterine bleeding is defined as abnormal uterine bleeding caused by a hormonal mechanism. Any alteration of the normal menstrual cycle mechanisms can lead to steady-state estrogen production and DUB.

• ***Pathophysiology:***

DUB is most common near the beginning and end of a woman's reproductive life, but may occur at any time.

In the first 18 months after menarche, the immature hypothalamic-pituitary axis may fail to respond to estrogen and progesterone, resulting in anovulation (Bayer & DeCherney, 1993; Johnson, 1991). In obese women, the non-ovarian endogenous estrogen production may upset the normal menstrual cycle (Wilikinson et al., 1990). As menopause approaches, decreases in hormone levels or in responsiveness to hormones also may lead to anovulatory DUB.

Most cases of DUB are caused by anovulatory cycles that result in high steady-state estrogen with no progesterone (Neese, 1989; Fayez, 1982; Bullen et al., 1985). The continuous estrogen stimulation causes continuous development of the functionalis layer until estrogen feedback produces a slow drop in FSH. Eventually, the blood supply is outgrown and parts of the endometrium slough. Estrogen, however, promotes healing of the endometrium so some parts are always healing as others slough, resulting in menometrorrhagia.

E. AUB in postmenopausal age group:

The most important source of bleeding in the postmenopausal women is endometrial cancer. Atrophic vaginitis, endometrial atrophy, and endometrial polyps are also known causes (Smith-Bindman et al., 1998).

• ***Endometrial cancer:***

Further evaluation of abnormal uterine bleeding depends on the patient's age and the presence of risk factors for endometrial cancer, which include anovulatory cycles, obesity, nulliparity, age greater than 35 years, and tamoxifen therapy (Brinton et al., 1992; Ries et al., 2003).

Initially, medical management is recommended for premenopausal women at low risk for endometrial carcinoma who are diagnosed with presumed dysfunctional uterine bleeding.

Diabetes is a demonstrated risk factor for endometrial cancer (Brinton et al., 1992) Women with long or irregular cycles are at risk for developing type 2 diabetes and therefore should undergo diabetes screening (Solomon et al., 2001).

Endometrial cancer is rare in 15- to 18-year-old females (Ries et al., 2003). Therefore; most adolescents with dysfunctional uterine bleeding can be treated safely with hormone therapy and observation, without diagnostic testing (Elford & Spence, 2002).

The risk of developing endometrial cancer increases with age (Ries et al., 2003). The overall incidence of this cancer is 10.2 cases per 100,000 in women aged 19 to 39 years. The incidence more than doubles from 2.8 cases per 100,000 in those aged 30 to 34 years to 6.1 cases per 100,000 in those aged 35 to 39 years. In women aged 40 to 49 years, the incidence of endometrial carcinoma is 36.5 cases per 100,000. Thus, the American College of Obstetricians and Gynecologists recommends endometrial evaluation in women aged 35 years and older who have abnormal uterine bleeding (ACOG practice bulletin, 2001a).

• ***Systemic disorders:***

Once pregnancy and iatrogenic causes have been excluded, patients should be evaluated for systemic disorders, particularly thyroid, hematologic, hepatic, adrenal, pituitary, and hypothalamic conditions. Menstrual irregularities are associated with both hypothyroidism (23.4 percent of cases) and hyperthyroidism (21.5 percent of cases) (Krassas, 2000). Thyroid function tests may help the physician determine the etiology.

• ***Inherited coagulopathy:***

Inherited coagulopathy has been shown to be the underlying cause of abnormal uterine bleeding in 18 percent of white women and 7 percent of black women (in USA) with menorrhagia (Dilley et al., 2001). These patients may present in adolescence with severe menstrual bleeding or frequent bruising. A complete blood count with platelet count should be obtained. If a coagulation defect is suspected, consultation with a hematologist may be the most cost-effective option in the absence of reasonable screening tests for specific abnormalities (Dilley et al., 2001). Because jaundice and hepatomegaly may suggest underlying acquired coagulopathy, liver function tests should be considered.

• ***Medications:***

Iatrogenic causes of abnormal uterine bleeding should be explored. Bleeding may be induced by medications, including anticoagulants, selective serotonin reuptake inhibitors, antipsychotics, corticosteroids, hormonal medications, and tamoxifen (Nolvadex). Herbal substances, including ginseng, ginkgo, and soy supplements, may cause menstrual irregularities by altering estrogen levels or clotting parameters (ACOG practice bulletin, 2001b).

PATIENTS

&

METHODS

Patients and Methods

The materials of this study are obtained from patients presenting to Ibn Sina hospital in Sirte, the Teaching Hospital of College of Medicine, Al-Tahady University, Libyan Arab Jamahiriya.

All patients complaining of uterine bleeding during the period from January 1st 2007 to April 30th 2008 were included in this study. Clinical and laboratory examination were performed. Biopsy materials were also obtained from patients. They included dilatation and curettage D&C biopsy, myomectomy, and hysterectomy specimens.

History and Physical Examination:

Patient's medical history was retrieved, including the usual menstrual pattern, the extent of recent bleeding, sexual activity, trauma and symptoms of infection or systemic disease. To uncover any signs of systemic disease, a complete physical examination, supplemented by laboratory testing, were done. The pelvic examination consists of careful inspection of the lower genital tract for lacerations, vulvar or vaginal pathology and cervical lesions or polyps.

Laboratory investigations include pregnancy testing in all patients of reproductive age. A complete blood count provides a measure of blood loss and platelet adequacy.

Dilatation and curettage (D & C):

By endometrial curettage (cervical dilation and endometrial curettage, D & C) most of the uterine mucosa was removed by scraping with a sharp curette (Sternberg, 1992).

Endometrial biopsy:

In this procedure, a limited sample of tissue was removed by a smaller curette. Single strips of endometrium usually were taken from both the anterior and the posterior fundal surfaces (Sternberg, 1992).

Laboratory procedures:

A. Light Microscopy Procedure:

Biopsy materials of the cases were examined by the routine light microscopy techniques using hematoxylin and eosin as basic stains. They were processed as follows:

1. *Fixation:* Selected blocks of tissue or curettage material were fixed in 10% neutral buffered formalin for 24 hours.
2. *Dehydration:* in ascending series of 50%, 70%, 90%, and 100% ethanol alcohol, for 1 hour each.
3. *Clearing:* by; 1:1 alcohol: xylene, 100% xylene, and finally 1:1 xylene : paraffin, for 1 hour each.
4. *Embedding:* in paraffin at 60 °C for 12 hours. Then, paraffin blocks were made in the appropriate orientation of the tissue.
5. *Sectioning:* all specimens were transversely cut in 5-8 µm sections.
6. *Staining:* all sections were stained with haematoxylin and eosin (H & E).

H & E stained slides were reviewed and the diagnoses are confirmed by one of the supervisors (Prof. E.I.Seif). Some paraffin blocks, of inadequate quality or in doubt slides, were resectioned and new slides are made. The best representative sections were selected and photographed.

B. Transmission Electron Microscopy Procedure:

Twenty cases were additionally processed for transmission electron microscope examination as follows:

1. Small (1x1x1 mm) cubes of tissue are prepared, and immediately fixed in Karnovsky primary fixative made up of formaldehyde / glutaradehyde in 0.2M cacodylate buffer at pH 7.4 for one hour.
2. Specimens are washed in 3 changes of buffer, each for 15 minutes.
3. Post-fixation is done in 1% cacodylate buffered osmium tetroxide for one hour.

4. Wash in buffer 3 x 15 minutes is done.
5. Dehydration in ascending grades of ethyl alcohol 50%, 70%, 80%, and 95%, two changes for 15 minutes each. Then, 100% alcohol dehydration is done 2 x 20 minutes.
6. Embedding is done by the low-viscosity resin (Spurr) in 3 changes:
   a. Spurr : absolute alcohol (1:1) for 3 hours.
   b. Spurr : absolute alcohol (2:1) for 12 hours.
   c. Pure Spurr resin for overnight.
7. Blocks are polymerized in the oven (60 °C) for 12-24 hours.
8. Thin (1 μm) sections are made by an ultrmicrotome (LKB) and stained by 1% toluidine blue for survey examination by the light microscope.
9. Selected areas were further trimmed and ultrathin (60-90 nm) sections are made and picked on cupper grids.
10. Sections on grids are double stained by uranyl acetate and lead citrate.
11. Grids are examined by Philips 400 transmission electron microscope at 80 kv.
12. Selected fields are photographed, and prints are made on photographic paper 13 x 18 cm to be examined.

Sectioning, staining, and examination with the electron microscope, were carried out in the EM unit, Specialized Hospital /Ain-Shams University, Egypt.

RESULTS

Results

According to the hospital records, the total number of women attended Ibn Sina hospital during the period of 16 months (Jan. 1st 2007 – April 30th 2008) was 4925. Among them 671 women were complaining of vaginal bleeding, irrespective of pregnancy. This number includes 84 cases in which biopsy specimens were examined outside the hospital in private laboratories or other hospitals and their results were not available in the hospital records. Therefore, they are not included in this study. Women included in this study are 587. Three hundred and forty two (342) of them had pregnancy related AUB, while 245 had AUB not related to pregnancy.

The 587 female patients complaining of abnormal uterine bleeding are grouped according to the causes of AUB into 18 groups as shown in table 2. The cases of AUB not related to pregnancy are shown in table 3. The clinical data of them are displayed in tables 4 - 16.

Group 1: Disordered proliferative endometrium:

The first group included the cases diagnosed by tissue biopsy as disordered proliferative endometrium. They were 35 females; their age ranged from 20 to 70 years, with a mean age of 37.37 years (table 3).

Twenty one patients are in the child-bearing age group, while 13 are in the perimenopausal age group, and only one postmenopausal woman is included in this group. Three women were infertile, while 33 had children.

Eight patients are on medical treatments (epilepsy, diabetes mellitus, etc) as shown in tables 4a & b.

The light microscopic examination of endometrial biopsy shows a predominantly proliferative pattern endometrium with foci of dilated

glands with focal outpouching and branching. Figs 4 & 5 show the proliferative areas.

Electron microscopic examination of the endometrial tissues shows the active proliferative glands which have luminal microvillus surface and in some areas cilia are shown. The cell organelles are prominent including mitochondria, both rough and smooth endoplasmic reticulum (figs. 6-9).

Group 2: Secretory endometrium:

The second group included 29 females; tissue examination shows variable patterns of secretory endometrium. Their age ranged from 20 to 49 years, with a mean age of 35.24 years (table 3).

The majority of the cases (24) are in the child-bearing age group, while 5 are in the perimenopausal age group (table 5a & b).

Light microscopic examination shows (figs 10-13, 15 & 16) the secretory endometrium. The glands have coiled shapes, S-shaped gland, and some have the saw-tooth configuration. The cells show subnuclear vacuoles in the early phases and both subnuclear and supranuclear vacuoles in the late stages. Luminal secretions are also seen in many glands. The stroma shows clusters of large stromal cells and interstitial edema.

Electron microscopic examination shows that the subnuclear vacuoles represent glycogen pools. Large active mitochondria are also seen (figs 14, 17 & 18).

Stromal cells, which included active fibroblasts with prominent rough endoplasmic reticulum, and macrophages with large nuclei and many lysosomes, are evident (figs. 19-22).

Group 3: Simple endometrial hyperplasia:

The third group included 58 patients diagnosed as simple endometrial hyperplasia. Their ages were between 28 - 60 years, with a mean age of 46.62 years (table 3).

The majority of the cases in this group represented the perimenopausal women (38), while 7 were in the post menopausal age group, and 13 in the child-bearing period. Three patients out of the seven in the post menopausal age group had diabetes mellitus as well (tables 6a, b & c).

Light microscopic examination shows an endometrium with hyperplastic glands and dense stroma. Many of the glands are large and some are cystically dilated. The epithelial cells lining the glands show a pseudostratified columnar pattern with obvious mitotic figures (figs. 23 & 24).

Electron microscopic examination shows that epithelial cells are arranged in multilayered pattern (fig. 25). The cells have large nuclei with prominent nucleoli and some have microvillus apical surface (fig 26).

Group 4: Complex endometrial hyperplasia:

This group includes patients suffering AUB due to complex endometrial hyperplasia with no atypia (table 7a & b). They were 20 cases, their age ranged from 38 – 58 years, with a mean age of 48.75 years (table 3).

Thirteen patients out of the twenty ($^{13}/_{20}$) were in the perimenopausal age group, and 4 of them had diabetes mellitus as well. Three ($^{3}/_{20}$) are in the end of the spectrum of child-bearing group age, only one of them was on the treatment for epilepsy.

Light microscopic examination of endometrial biopsies shows the hyperplastic crowded glands with complex architecture and scanty intervening stroma. Epithelial stratification and mitotic figures were seen

but they were less than 5 mitotic figures per high power (X40) fields. No areas of carcinoma in situ or invasive carcinoma are seen.

Group 5: Irregular endometrial shedding:

In this group, endometrial biopsy shows the picture of irregular shedding. It includes 5 patients with ages between 32 – 38 years, with mean age of 35 years (table 3). Two of them were on hormone therapy (table 8).

The endometrium shows a mixture of both proliferative and secretory patterns. The stroma around proliferative glands is dense while it is predecidualized and edematous around secretory type glands. Foci of glands and stromal breakdown and occasional fibrin thrombi are also seen.

Group 6: Atrophic endometrium:

In this group the endometrium shows the pattern of atrophic endometrium. Twenty five patients are included in this group, their ages ranged between 40 – 70 years, with a mean age of 51.76 years (table 3).

Fifteen patients ($^{15}/_{25}$) are older than 55 years, while $^{10}/_{25}$ are in the perimenopausal age group. Diabetes mellitus is present in $^{7}/_{15}$ of the patients in the post menopausal age group, while one patient $^{1}/_{10}$ in the perimenopausal age group had diabetes mellitus (tables 9a & b).

Light microscopic examination (fig. 27) shows scanty endometrial glands in a hypocellular stroma.

Electron microscopic examination shows that the epithelial cells lining the glands still have high nucleocytoplasmic ratio, however the cytoplasnic organelles are scanty. Frequent apoptotic cells are seen amidst the epithelial cells lining the glands (fig 28). The stroma shows more fibroblasts and collagen.

Group 7: Endometrial polyps:

In this group 20 patients were examined, their age ranged between 22 and 40 years, with a mean age of 32.35 years (table 3).

All the patients included in this group are in the child-bearing age group. Two of them had as well hypertension controlled by medical treatment (tables 10a & b).

The result of light microscopic examination of the endometrial biopsy shows the presence of hyperplastic endometrial polypoid lesions made up predominantly of proliferative glands. The stroma usually shows thick walled blood vessels. Surface ulcers, secondary infection, and interstitial haemorrhages are frequently seen (fig. 29).

Group 8: Chronic non-specific endometritis:

In this group 4 cases are seen (table 11). Three patients had children (P_3, P_4, and P_7), while one is P_0 and had diabetes mellitus as well.

The diagnosis was based on the presence of a chronic interstitial infiltrate with predominant plasma cells. It was somewhat difficult to date the endometrium because of the dense stromal infiltrate and foci of broken down glands and stroma. Specific causes were excluded by clinical and laboratory tests (fig 30).

Group 9: Chronic specific endometritis (tuberculous):

In this group only two patients were seen; the clinical data pointed at chronic chest disease and both suffered AUB and infertility (table 12).

Light microscopic examination shows a caseating granuloma made up of epithelioid cells, lymphocytes, and Langhans type giant cells (fig 31) which is consistent with tuberculous endometritis. The diagnosis was established by repeated sputum examination and detection of the acid-fast bacilli.

Group 10: Leiomyoma:

In this group 31 patients had leiomyomas (table 3). Twenty two cases were myomectomy specimens while 9 cases underwent hysterectomy. The age range was between 21 – 48 years, with a mean age of 37 years. Twenty patients are in the child-bearing age group, while 11 are in the perimenopausal age group (table 13a & b). Twenty two of them ($^{22}/_{31}$) are single, while $^{9}/_{31}$ are married. Among this group of married women; two are infertile, one is having no live births ($P_0 A_2$).

All types of leiomyomas; subserous, submucous, and interstitial, are seen. Many patients had multiple myomas (figs 32-34). Degenerative changes were also seen in some myomas.

Group 11: Adenomyosis:

Four cases are included in this group (table 14). Foci of adenomyosis were seen in hysterectomy specimens.

Group 12: Carcinoma:

During the period of the study, only one patient has carcinoma of the body of the uterus diagnosed by D & C (table 15).

Light microscopic examination shows poorly differentiated adenocarcinoma with squamous elements (figs 35 & 36).

Group 13: Cervical polyps:

Eleven cases are included in the group of cervical polyps, their age ranged from 31 - 61 years, with a mean age of 46.36 years (table 3). The majority of patients in this group ($^{6}/_{11}$) are in the perimenopausal age group (table 16).

Microscopic examination shows focally ulcerated endocervical mucosal polyps (fig 37).

Group 14: Vesicular molar pregnancy:

Four women had molar pregnancy. They were all in the reproductive age group. Gross examination of uterine curettages showed the small

translucent vesicles which appear on microscopic examination as large villi with central cisternae, avascular cores, and focal trophoblastic hypercellularity (fig. 38).

Group 15: Ectopic pregnancy:

Cases of ectopic pregnancy were 24. Laparotomy was done and all cases showed disturbed or ruptured tubal pregnancy (fig. 39).

Group 16: Abortion:

This is the largest group (43.44 %) it included 255 cases that showed all stages of abortion. Microscopic examination of the products of conception showed chorionic villi, cytomembranes decidua of pregnancy.

Group 17: Antepartum haemorrhage:

During the period of this study, the total number of deliveries was 3931 cases. Vaginal bleeding that occurs after the 28th week of pregnancy and before child birth is termed antepartum haemorrhage. This group included 49 cases; 34 patients were diagnosed as placenta abruption, while 15 patients had placenta praevia. The diagnosis was based on clinical and ultrasound examination.

Group 18: Miscellaneous causes:

This group includes 10 cases of AUB due to miscellaneous causes. Two cases were under anticoagulant therapy, received for heart diseases; two cases suffering from blood diseases (one with thrombocytopenia and the other with chronic liver disease). Seven cases were secondary to traumatic lesions particularly in young girls.

Females in the reproductive period using intrauterine devices (IUDs) and experienced variable grades of AUB, are not included in the study since they were managed in the outpatient clinics. None of them had to be admitted to hospital in the period of the study.

Table 2: Groups of abnormal uterine bleeding (AUB).

Group No.	Cause of AUB	No. of cases
1	Disordered proliferative endometrium	35
2	Secretory phase	29
3	Simple endometrial hyperplasia	58
4	Complex endometrial hyperplasia without atypia	20
5	Irregular endometrial shedding	5
6	Atrophic endometrium	25
7	Endometrial polyps	20
8	Chronic non-specific endometritis	4
9	Chronic specific endometritis (tuberculous)	2
10	Leiomyoma	31
11	Adenomyosis	4
12	Carcinoma of uterine body	1
13	Cervical polyps	11
14	Vesicular mole	4
15	Ectopic pregnancy	24
16	Abortion	255
17	Ante partum hemorrhage	49
18	Other causes	10
Total number of cases		587

Table 3: Cases of AUB (not related to pregnancy).

Group No.	Cause of AUB	No. of cases	Percentage (%)	Age range (years)	Age mean (years)
1	Disordered proliferative endometrium	35	14.28	20 - 46	37.37
2	Secretory phase	29	11.83	20 - 49	35.24
3	Simple endometrial hyperplasia	58	23.67	28 - 60	46.62
4	Complex endometrial hyperplasia without atypia	20	8.16	38 - 58	48.75
5	Irregular endometrial shedding	5	2.04	32 - 38	35
6	Atrophic endometrium	25	10.20	40 - 70	51.76
7	Endometrial polyps	20	8.16	22 - 40	32.35
8	Chronic non-specific endometritis	4	1.63	32 - 45	37.5
9	Chronic specific endometritis (tuberculous)	2	0.81	33 - 35	34
10	Leiomyoma	31	12.65	21 - 48	37
11	Adenomyosis	4	1.63	40 - 53	45.5
12	Carcinoma of uterine body	1	0.4	49	49
13	Cervical polyps	11	4.48	31 - 60	46.36
Total number of cases		245			

Table 4a: Summary of clinical data of group 1; Disordered proliferative endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	38	18	Married	Infertility	Myomectomy	Heavy	Vaginal discharge	Menorrhagia	11
2	31	15	Married	P6 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	11
3	33	11	Married	P5 A3	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	10
4	29	13	Married	P3 A2	Oral contraceptive	Heavy Irregular	Lower abdominal pain Vaginal discharge	Menorrhagia	13
5	41	14	Married	Infertility	Epilepsy	Heavy Irregular	Dysmenorrhea Chronic pelvic pain	Menorrhagia, Lower abdominal pain	10
6	38	12	Married	P8 A2	Anaemia on treatment	Heavy Irregular	Dysmenorrhea	Menorrhagia	7
7	39	13	Married	P4 A0	Epilepsy	Heavy Irregular	Dysmenorrhea	Menorrhagia	13
8	41	15	Married	P11 A0	Anaemia on treatment	Heavy Irregular	Lower abdominal pain	Menorrhagia	10
9	35	13	Married	P5 A0	Free	Heavy Irregular	Dysmenorrhea, Vaginal discharge	Menorrhagia	10
10	41	13	Married	P7 A0	Free	Heavy Irregular	Severe lower abdominal pain	Menorrhagia	12
11	41	12	Married	P7 A2	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	12
12	27	12	Married	P5 A0	Anaemia	Heavy Irregular	Dysmenorrhea	Menorrhagia	9
13	38	15	Married	P5 A0	Free	Heavy Irregular	Free	Menorrhagia	12
14	20	12	Married	P0 A4	Free	Moderate Irregular	Lower abdominal pain Vaginal discharge	Menorrhagia	12
15	41	13	Married	P6 A1	Free	Heavy Irregular	Back pain	Menorrhagia	14
16	29	16	Married	P5 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	12

Table 4b: Summary of clinical data of group 1; Disordered proliferative endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
17	46	11	Married	P3 A0	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	10
18	41	13	Married	P3 A2	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	4 months
19	43	12	Married	P6 A3	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	30
20	38	15	Married	P6 A2	Free	Irregular	Lower abdominal pain	Menorrhagia	17
21	39	13	Married	P2 A0	Epilepsy	Irregular	Dysmenorrhea	Menorrhagia	13
22	70	? ?	Married	P17 A3	Parkinsonism Cardiac disease	Irregular	Back pain	Postmenopausal bleeding	21
23	39	13	Married	P3 A2	Free	Heavy Irregular	Back pain	Menorrhagia	13
24	40	13	Married	P8 A0	Free	Heavy Irregular	Vaginal discharge, back pain	Per vaginal bleeding	9
25	39	?	Married	P5 A3	Diabetes mellitus on insulin	Heavy Irregular	Back pain	Menorrhagia	8
26	38	11	Married	Primary infertility	Myomectomy on hormonal therapy	Moderate Irregular	Deep pelvic pain	Menorrhagia	16
27	41	13	Married	P3 A3	Free	Irregular	Dysmenorrhea	Menorrhagia	13
28	41	13	Married	P13 A0	Free	Heavy	Back pain	PV bleeding Back pain	12
29	44	16	Married	P6 A2	Free	Irregular	Back pain	Menorrhagia	10
30	41	13	Married	P0	Myomectomy	Heavy Irregular	Lower abdominal pain	Menorrhagia	13
31	46	14	Married	P13	Diabetes mellitus	Heavy Irregular	Vaginal discharge	Per vaginal bleeding	20
32	33	11	Married	P5 A3	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	11
33	33	11	Married	P5 A3	Myomectomy	Heavy	Vaginal discharge	Menorrhagia	10
34	31	15	Married	P6 A2	Free	Heavy	Dysmenorrhea	Menorrhagia	11
35	38	10	Married	P7 A0	Free	Heavy	Dysmenorrhea	Menorrhagia	12

Table 5a: Summary of clinical data of group 2; Secretory endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	35	13	Married	P4 A2	Free	Heavy Irregular	Dysmenorrhea	Per vaginal bleeding	23
2	33	16	Married	P3 A1	Free	Moderate Irregular	Dysmenorrhea	Menorrhagia	10
3	31	15	Married	P3 A0	Epilepsy on treatment	Moderate Irregular	Lower abdominal pain Back pain	Menorrhagia	10
4	29	15	Married	P0 A0	Free	Moderate Irregular	Lower abdominal pain	Menorrhagia, Lower abdominal Pain	12
5	29	15	Married	P3 A0	Migraine	Heavy Irregular	Dysmenorrhea	Menorrhagia	14
6	38	11	Married	P8 A0	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	14
7	30	14	Married	P2 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	14
8	43	16	Married	P10 A0	Free	Moderate	Lower abdominal pain	Spotting	9
9	37	13	Married	P6 A0	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	17
10	36	13	Married	P4 A2	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	16
11	40	12	Married	P3 A3	Hypertension	Irregular	Per vaginal bleeding, Menorrhagia	Per vaginal bleeding	18
12	48	13	Married	P8 A0	Free	Regular	Dysmenorrhea	Per vaginal bleeding	14
13	37	13	Married	P3 A3	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	15
14	40	12	Married	P8 A0	Bronchial asthma on ventolin	Irregular	Dysmenorrhea	Per vaginal bleeding	18

Table 5b: Summary of clinical data of group 2; Secretory endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Para History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
15	40	10	Married	P8 A0	Free	Irregular	Backpain	Per vaginal bleeding	10
16	49	13	Married	P6 A2 Ectopic	Free	Irregular	Dysmenorrhoea	Menorrhagia	15
17	30	13	Married	P3 A1	Free	Irregular	Dysmenorrhoea	Menorrhagia	10
18	20	14	Married	P0 A2	Free	Irregular	Dysmenorrhoea	Menorrhagia	19
19	28	13	Married	P1 A5	Free	Irregular	Dysmenorrhoea	Menorrhagia	10
20	35	14	Married	P3 A0	Epilepsy on Tegretal	Irregular	Deep pelvic pain	Menorrhagia	14
21	48	14	Married	P5 A1	Hypertension on irregular treatment	Irregular	Dysmenorrhea	Menorrhagia	10
22	26	15	Married	P0 A4	Free	Irregular	Dysmenorrhea	Menorrhagia	12
23	30	13	Married	P5	Free	Moderate Irregular	Lower abdominal pain	Per vaginal bleeding	10
24	31	16	Married	P1 A2	Free	Moderate Irregular	Lower abdominal pain	Per vaginal bleeding	15
25	41	12	Married	P9 A3 2 C/S	Hypertension	Moderate Irregular	Lower abdominal pain	Menorrhagia	14
26	35	13y	Married	P3 A3	Free	Heavy	Dysmenorrhea Per vaginal bleeding	Per vaginal bleeding	10
27	32	16	Married	P0 A2	Free	Moderate	Lower abdominal pain	Menorrhagia	9
28	33	16	Married	P3 A1	Free	Moderate Irregular	Dysmenorrhea	Per vaginal bleeding	10
29	38	14	Married	P5 A3	Free	Heavy	Dysmenorrhea	Menorrhagia	11

Table 6a: Summary of clinical data of group 3; Simple endometrial hyperplasia.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	52	12 48	Married	P14 A3 1 C/S	Hypertension on treatment	Heavy Irregular	Lower abdominal pain	Per vaginal bleeding, Postmenopausal bleeding	25
2	50	13	Married	P13 A3	Diabetes mellitus on insulin	Heavy Irregular	Lower abdominal pain Back pain	Per vaginal bleeding	15
3	31	16	Married	P0 A2	Free	Moderate Irregular	Dysmenorrhea	Menorrhagia	9
4	41	12	Married	P9 A4 2 C/S	Hypothyroidism on treatment	Moderate Irregular	Severe back pain	Menorrhagia	12
5	38	14	Married	P4 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	11
6	44	13	Married	P7 A0	Peptic ulcer on treatment, Anemia	Moderate Irregular	Severe lower abdominal pain with P/V bleeding	Menorrhagia	15
7	54	10 51	Married	P14 A0	Cardiac disorder	Heavy Irregular	Lower abdominal pain Vaginal discharge	Menorrhagia Postmenopausal bleeding	13
8	50	15 48	Married	P11 A4 Ectopic	Free	Heavy	Severe lower abdominal pain	Postmenopausal bleeding	16
9	33	11	Married	P3 A3	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	10
10	33	13	Married	P2 A2	Epilepsy on treatment	Heavy Irregular	Dysmenorrhea	Menorrhagia	11
11	53	12 48	Married	P13 A5	Rheumatoid arthritis, Anemia	Heavy Irregular	Back pain	Postmenopausal bleeding	10
12	50	13 45	Married	P11 A2	Diabetes mellitus on insulin, Anaemia	Moderate Irregular	Lower abdominal pain	Postmenopausal bleeding	13
13	48	13	Married	P14 A0	Hypertension, Hormonal treatment	Heavy Irregular	Lower abdominal pain Vaginal discharge	Menorrhagia	13
14	58	12 49	Married	P5 A3	Free	Moderate Irregular	Back pain	Postmenopausal bleeding	12
15	48	13	Married	P2 A7	Free	Moderate Irregular	Back pain	Post menopausal bleeding	12
16	60	12 49	Married	P6 A2	Diabetes mellitus on insulin	Moderate Irregular	Vaginal discharge Lower abdominal pain	Post menopausal bleeding	9
17	58	12 48	Married	P6 A2	Diabetes mellitus on insulin	Moderate Irregular	Lower abdominal pain	Postmenopausal bleeding	13

Table 6b: Summary of clinical data of group 3; Simple endometrial hyperplasia.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
18	49	12 45	Married	P13 A0	Hormonal treatment	Heavy Irregular	Back pain	Postmenopausal bleeding	11
19	38	11	Married	Infertility	Hormonal treatment	Heavy Irregular	Severe lower abdominal pain	Menorrhagia	9
20	48	13	Married	P12 A0	Diabetes mellitus on insulin	Heavy Irregular	Lower abdominal pain, Vaginal discharge	Menorrhagia	13
21	43	13	Married	P2 A0	Hormonal treatment	Heavy Irregular	Dysmenorrhea	Menorrhagia	10
22	33	12	Married	P1 A1	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	9
23	40	15	Married	P10 A0	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	12
24	48	11 46	Married	P6 A0	Free	Heavy Irregular	Back pain	Postmenopausal bleeding	8
25	41	12	Married	P6 A0	Free	Heavy Irregular	Back pain	Menorrhagia	13
26	50	15 46	Married	P12 A2	Diabetes mellitus on insulin	Heavy Irregular	Back pain	Menorrhagia	13
27	52	15 50	Married	P14 A3	Diabetes mellitus on insulin, Hypertension	Moderate Irregular	Lower abdominal pain	Menorrhagia	13
28	50	11 46	Married	P7 A2	Bronchial asthma	Heavy Irregular	Dysmenorrhea	Postmenopausal bleeding	20
29	35	12	Married	P6 A1	Anaemia, Hemolytic	Irregular	Severe pelvic pain	Per vaginal bleeding	21
30	28	14	Married	P2 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	18
31	48	13	Married	P10 A2	Free	Irregular	Back pain	Per vaginal bleeding	13
32	58	10 52	Married	P7 A3	Hypertension on treatment	Irregular	Back pain	Postmenopausal bleeding	9
33	36	11	Married	P4 A0	Free	Irregular	Per vaginal bleeding Menorrhagia	Per vaginal bleeding	13
34	50	15	Married	P9 A3	Free	Irregular	Per vaginal bleeding Menorrhagia	Per vaginal bleeding	12
35	60	? 53	Married	P14 A0	Diabetes mellitus on insulin	Irregular	Per vaginal bleeding	Per vaginal bleeding	9

Table 6c: Summary of clinical data of group 3; Simple endometrial hyperplasia.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
36	43	10	Married	P12 A0	Previous C/S	Irregular	Dysmenorrhea	Per vaginal bleeding	7
37	41	12	Married	P8 A1	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	15
38	55	12 50	Married	P14 A5	Hypertension	Heavy Irregular	Per vaginal bleeding	Per vaginal bleeding	7
39	42	11	Married	P6 A2	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	20
40	40	10	Married	P8 A1	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	18
41	58	10 47	Married	P5 A3	Free	Irregular	Back pain	Postmenopausal bleeding	12
42	55	7 52	Married	P14 A2	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	7
43	60	13 58	Married	P6 A1	Free	Moderate Irregular	Dysmenorrhea	Post menopausal bleeding	21
44	46	12	Married	P4 A0	Hemolytic anemia	Irregular	Dysmenorrhea	Menorrhagia	12
45	36	12	Married	P5 A0	Free	Irregular	Vaginal discharge	Menorrhagia	10
46	48	14 45	Married	P8 A0	Free	Irregular	Back pain	Postmenopausal bleeding	14
47	53	12 50	Married	P10 A3	Hypertension	Moderate Irregular	Back pain	Postmenopausal bleeding	18
48	55	12 50	Married	P15 A0	Diabetes mellitus	Irregular	Lower abdominal pain	Bleeding, pelvic pain	15
49	48	12	Married	P5 A0	Free	Moderate	Back pain	Per vaginal bleeding Back pain	10
50	41	12	Married	P0	Myomectomy	Moderate Irregular	Back pain	Menorrhagia	4 months
51	45	10	Married	P10	Hypertension	Irregular	Lower abdominal pain	Menorrhagia	20
52	55	12	Married	P16	Diabetes mellitus	Heavy Irregular	Lower abdominal pain	Menorrhagia	20
53	50	13	Married	P13	Diabetes mellitus	Heavy Irregular	lower abdominal pain	Per vaginal bleeding	10
54	52	12 48	Married	P13 A1	Diabetes mellitus	Heavy	Lower abdominal pain	Per vaginal bleeding, Postmenopausal bleeding	12
55	41	12	Married	P8 A4	Hyperthyroidism	Moderate	Severe back pain	Menorrhagia	12
56	31	13	Married	P0 A3	Free	Moderate	Dysmenorrhea	Per vaginal bleeding	9
57	33	11	Married	P5 A3	Free	Heavy	Dysmenorrhea	Menorrhagia	10
58	44	13	Married	P12 A3	Free	Moderate	Severe lower abdominal pain	Menorrhagia	7

Table 7a: Summary of clinical data of group 4; Complex endometrial hyperplasia.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	58	10 48	Married	P12 A0	Migraine	Moderate Irregular	Back pain	Postmenopausal bleeding	8
2	52	13 49	Married	P11 A0	Diabetes mellitus on insulin	Heavy Irregular	Lower abdominal pain	Postmenopausal bleeding Chronic abdominal pain	10
3	53	12 48	Married	P1 A0	Hypertension on treatment	Moderate Irregular	Lower abdominal pain	Postmenopausal bleeding Lower abdominal pain	12
4	40	15	Married	P11 A2	Anaemia, Chronic pelvic pain	Heavy Irregular	Lower abdominal pain	Menorrhagia	13
5	50	10 47	Married	P12 A0	Diabetes mellitus on insulin	Heavy Irregular	Lower abdominal pain Vaginal discharge	Postmenopausal bleeding	11
6	52	16 48	Married	P7 A3	Diabetes mellitus on insulin	Moderate Irregular	Back pain	Postmenopausal bleeding	16
7	55	12 50	Married	P16 A3	Hypertension	Moderate Irregular	Lower abdominal pain	Postmenopausal bleeding	13
8	45	13	Married	P6 A3	Free	Heavy Irregular	Severe lower abdominal pain	Menorrhagia	12
9	50	14	Married	P8 A3	Free	Heavy Irregular	Lower abdominal pain – back pain	Menorrhagia	15
10	49	12 45	Married	P5 A3	Hypertension	Heavy Irregular	Back pain	Menorrhagia	12

Table 7b: Summary of clinical data of group 4; Complex endometrial hyperplasia.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
11	50	12 49	Married	P12 A0	Diabetes mellitus on insulin	Heavy Irregular	Lower abdominal pain Vaginal discharge	Postmenopausal bleeding	11
12	56	? 52	Married	P11 A0	Diabetes mellitus on insulin	Irregular	Dysmenorrhea	Per vaginal bleeding	11
13	57	12 50	Married	P11 A2	Free	Irregular	Back pain	Postmenopausal bleeding	10
14	46	10	Married	P7	Free	Moderate Irregular	Back pain	Per vaginal bleeding	7
15	38	14	Married	P4 A2	Free	Heavy	Dysmenorrheal	Menorrhagia	11
16	48	12	Married	P10 A2	Peptic ulcer	Moderate	Lower abdominal pain	Menorrhagia	15
17	46	14	Married	P5 A0	Free	Heavy Irregular	Severe abdominal pain	Menorrhagia	14
18	45	10	Married	P13 A5	Free	Heavy	Lower abdominal pain	Menorrhagia	14
19	45	13	Married	P11 A0	Anaemia	Heavy Irregular	Lower abdominal pain	Menorrhagia	10
20	40	15	Married	P3 A1	Epilepsy	Heavy	Per vaginal bleeding	Headache and back pain	10

Table 8: Summary of clinical data of group 5; Irregular endometrial shedding.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	35	11	Married	P5 A0	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	14
2	38	16	Married	P6 A0	Hormone	Heavy Irregular	Dysmenorrhea Vaginal discharge	Menorrhagia	14
3	35	16	Married	P7 A2 1 C/S	Oral contraceptive	Moderate Irregular	Dysmenorrhea	Menorrhagia	7
4	32	11	Married	P4 A0	Free	Heavy	Lower abdominal pain	Menorrhagia	14
5	35	11	Married	P5 A0	Free	Heavy	Lower abdominal pain	Menorrhagia	11

Table 9a: Summary of clinical data of group 6; Atrophic endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	60	13 52	Married	P8 A3	Diabetes mellitus on insulin	Moderate Irregular	Vaginal discharge	Per vaginal bleeding Postmenopausal bleeding	15
2	55	12 46	Married	P11 A0	Cardiac disease on treatment	Moderate Irregular	Lower abdominal pain	Per vaginal bleeding Post-menopausal bleeding	10
3	54	13 49	Married	P12 A0	Hypertension Cardiac disease	Heavy Irregular	Lower abdominal pain	Postmenopausal bleeding	9
4	60	16 50	Married	Infertility	Hypertension on treatment, Anemia	Moderate Irregular	Back pain	Menorrhagia Postmenopausal bleeding	9
5	56	13 51	Married	P12 A0	Free	Heavy Irregular	Back pain	Postmenopausal bleeding	14
6	60	13 47	Married	P3 A2	Diabetes mellitus	Heavy Irregular	Bad pain	Spotting	8
7	41	16	Married	Infertility	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	14
8	70	12 50	Married	P13 A0	Free	Moderate Irregular	Free	Spotting	3
9	60	10 ?	Married	P12 A3	Diabetes mellitus on Daonil	Irregular	Back pain	Menorrhagia	18
10	54	15 52	Married	P9 A4	Free	Irregular	Severe per vaginal bleeding	Postmenopausal bleeding	42
11	50	11	Married	P14 A0	Diabetes mellitus, on Daonil	Irregular	Dysmenorrhea	Per vaginal bleeding	30
12	40	15	Married	P5 A0	Free	Regular	Dysmenorrhea	Per vaginal bleeding	12
13	56	10 50	Married	P7 A0	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	15

Table 9b: Summary of clinical data of group 6; Atrophic endometrium.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
14	70	10 50	Married	P9 A0	Diabetes mellitus on insulin, Hypertension	Irregular	Dysmenorrhea	Per vaginal bleeding	10
15	66	? 53	Married	P14 A0	Hypertension on treatment	Irregular	Dysmenorrhea	Postmenopausal bleeding	17
16	47	14	Married	P10 A2	Free	Irregular	Dysmenorrhea	Menorrhagia	9
17	53	? 49	Married	P14 A3	Free	Irregular	Back pain	Postmenopausal bleeding	11
18	57	? 50	Married	P16 A0	Diabetes mellitus Hypertension	Heavy Irregular	Back pain	Postmenopausal bleeding	17
19	70	10 50	Married	P9 A0	Diabetes mellitus Hypertension	Scanty	-	Postmenopausal bleeding	7-10
20	55	12 44	Married	P11 A0	Cardiac disease	Moderate Irregular	Back pain	Per vaginal bleeding	10
21	60	13 52	Married	P9 A2	Diabetes mellitus	Moderate	Vaginal discharge	Per vaginal bleeding	10
22	55	12 52	Married	P11 A0	Cardiac disease	Moderate Irregular	Lower abdominal pain	Per vaginal bleeding	7
23	65	13 49	Married	P12 A0	Free	Heavy	Lower abdominal pain	Postmenopausal bleeding	10
24	60	? 45	Married	P13 A0	Cardiac disease	Heavy	Lower abdominal pain	Posumenopausal bleeding	13
25	60	12 50	Married	P11 A3	Hypertension	Moderate	Back pain	Postmenopausal bleeding	7

Table 10: Summary of clinical data of group 7; Endometrial polyps.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	30	14	Married	P2 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	15
2	33	12	Married	P5 A0	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	13
3	22	13	Married	P1 A3	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	10
4	37	13	Married	P6 A2	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	12
5	38	12	Married	P6 A0	Free	Moderate	Lower abdominal pain	Spotting	10
6	30	15	Married	P2 A0	Free	Heavy Irregular	Lower abdominal pain	Spotting	10
7	40	12	Married	P3 A2	Hypertension on treatment	Regular	Dysmenorrhea	Per vaginal bleeding	12
8	32	11	Married	P4 A1	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	7
9	31	16	Married	P3 A0	Free	Heavy Irregular	Dysmenorrhea	Per vaginal bleeding	10
10	29	13	Married	P2 A3	Free	Irregular	Back pain	Per vaginal bleeding	12
11	22	13	Married	P1 A0	Free	Heavy Irregular	Dysmenorrhoea	Menorrhagia	17
12	29	13	Married	P5	Free	Heavy	Lower abdominal pain	Menorrhagia	10
13	30	13	Married	P2	Free	Moderate	Spotting	PV bleeding	15
14	31	16	Married	P3	Anemia	Irregular	Lower abdominal pain	Menorrhagia	10
15	32	13	Married	P4	Free	Heavy	Back pain	Menorrhagia	7
16	30	13	Married	P3	Free	Heavy Irregular		Menorrhagia	13
17	32	11	Married	P5	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	15
18	38	12	Married	P1 A0	Free	Heavy	Dysmenorrhea	Menorrhagia	13
19	40	12	Married	P7 A0	Free	Heavy	Dysmenorrhea	Menorrhagia	20
20	40	12	Married	P8 A0	Hypertension	Moderate Irregular	Per vaginal bleeding	Lower abdominal pain	9

Table 11: Summary of clinical data of group 8; Chronic non-specific.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	45	12	Married	P0	Diabetes mellitus	Moderate Irregular	Lower abdominal pain	Lower abdominal pain	8
2	32	14	Married	P4 A2	Vaginal discharge Lower abdominal pain	Moderate Irregular	Lower abdominal pain	Spotting	7
3	40	12	Married	P3 A7	Vaginal discharge Back pain	Moderate	Lower abdominal pain	Per vaginal bleeding	13
4	33	13	Married	P3 A1	Vaginal discharge Back pain	Moderate	Lower abdominal pain	Per vaginal bleeding	10

Table 12: Summary of clinical data of group 9; Chronic specific.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	35	13	Married	Infertility	Pulmonary disease	Moderate Irregular	Lower abdominal pain	Lower abdominal pain	10
2	33	16	Married	Infertility	Cough	Moderate	Lower abdominal pain	Per vaginal bleeding	9

Table 13a: Summary of clinical data of group 16; Leiomyoma.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	46	15	Single	-	Free	Heavy Irregular	Lower abdominal pain , extended abdominal	Menorrhagia	14
2	38	13	Single	-	Fibroid uterus myomectomy	Heavy Irregular	Dysmenorrhea	Menorrhagia	16
3	40	15	Single	-	Eczema, Myomectomy	Heavy Irregular	Dysmenorrhea	Menorrhagia	10
4	35	13	Single	-	Free	Heavy Irregular	Dysmenorrhea	Menorrhagia	14
5	33	16	Married	P1 A5	Myomectomy	Moderate Irregular	Lower abdominal pain	Menorrhagia	10
6	33	14	Married	Infertility	Free	Moderate	Lower abdominal pain	Menorrhagia	15
7	46	11	Married	P3 A4	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	11
8	30	13	Single	-	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	14
9	46	12	Single	-	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	18
10	44	15	Married	P7 A2	Hypertension	Irregular	Severe loin pain	Per vaginal bleeding	9
11	48	13	Married	P5 A0	Diabetes mellitus on insulin	Irregular	Dysmenorrhea	Per vaginal bleeding	10
12	48	15	Single	-	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	15
13	42	12	Single	-	Skin disease	Irregular	Dysmenorrhea	Per vaginal bleeding	10
14	42	13	Single	-	Hypertension	Irregular	Dysmenorrhea	Per vaginal bleeding	10
15	46	11	Married	P1 A0	Hypertension on treatment	Irregular	Dysmenorrhea	Per vaginal bleeding	7
16	21	13	Single	-	Free	Irregular	Dysmenorrhea	Per vaginal bleeding	6
17	33	12	Single	-	Free	Irregular	Back pain	Menorrhagia	20
18	37	13	Single	-	Free	Irregular	Dysmenorrhoea	Per vaginal bleeding	9
19	40	11	Married	P0 A2	Free	Irregular	Dysmenorrhoea	Per vaginal bleeding	12
20	38	15	Single	-	Hypertension	Irregular	Dysmenorrhoea	Menorrhagia	10

Table 13b: Summary of clinical data of group 10; Leiomyoma.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
21	29	16	Single	-	Free	Irregular	Back pain	Severe per vaginal bleeding	7
22	25	13	Single	-	Free	Heavy Irregular	Deep pelvic pain	Menorrhagia	19
23	33	10	Married	P6 A2	Free	Irregular	Dysmenorrhea	Menorrhagia	18
24	30	11	Single	-	Free	Irregular	Deep pelvic pain	Menorrhagia	9
25	38	13	Single	-	Free	Irregular	Dysmenorrhea	Menorrhagia	11
26	48	15	Single	-	Free	Irregular	Lower abdominal pain	PV bleeding	15
27	30	12	Single	-	Anemia, Diabetes mellitus	Irregular	Lower abdominal pain	Abdominal distension	20
28	35	12	Single	-	Free	Heavy Irregular	Abdominal distension	Menorrhagia	20
29	35	13	Single	-	Diabetes mellitus Anaemia	Heavy	Lower abdominal pain	Menorrhagia	12
30	36	15	Single	-	Free	Heavy	Lower abdominal pain	Menorrhagia	20
31	45	16	Married	Infertility	Myomectomy	Heavy	Vaginal discharge	Menorrhagia	11

Table 14: Summary of clinical data of group 11; Adenomyosis.

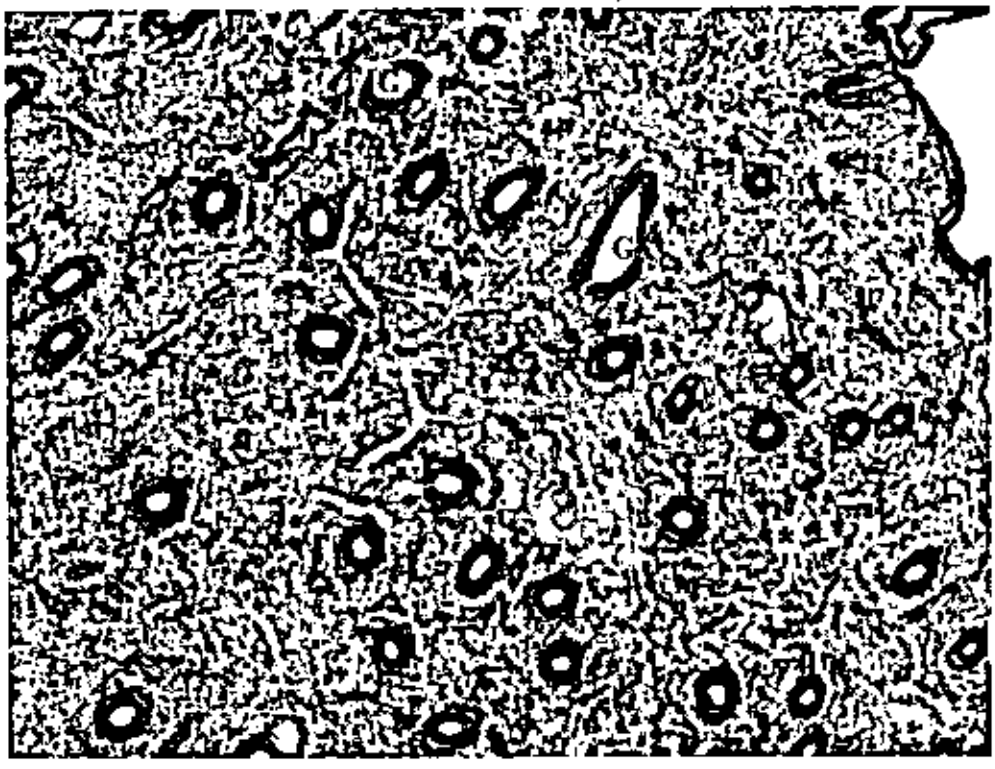
Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	45	?	Married	P13 A0	Diabetes mellitus on insulin Bronchial asthma	Irregular	-	Postmenopausal bleeding	10
2	44	15	Married	P10 A3	Free	Heavy	Vaginal discharge	Menorrhagia	11
3	53	13 46	Married	P12	Hypertension	Moderate	Post menopausal bleeding	Postmenopausal bleeding	10
4	40	16	Married	P10	Lower abdominal pain	Heavy	Lower abdominal pain	Menorrhagia	10

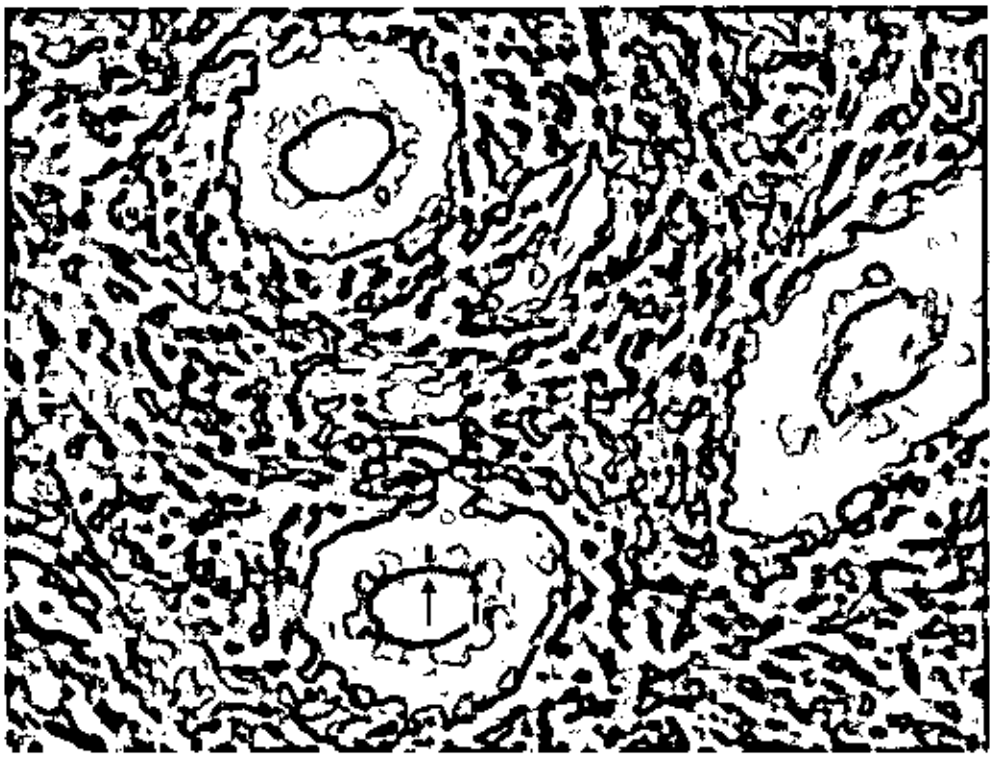
Table 15: Summary of clinical data of group 12;Carcinoma.

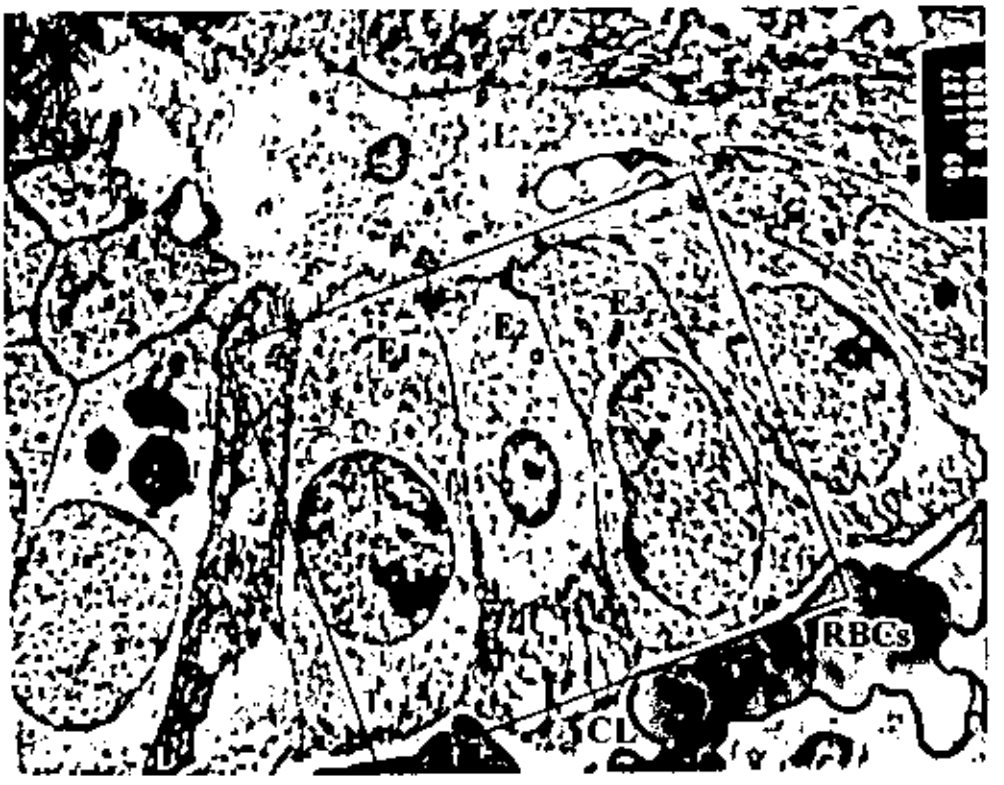
Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	49	13	Married	P11 A3	Hypertension	Irregular	Intermenstrual discharge	Per vaginal bleeding	12

Table 16: Summary of clinical data of group 13; Cervical polyps.

Case No.	Age (year)	Menarche/ Menopause (year)	Marital Status	Obst. History	Past History	Menstrual History		Present Complain	
						Period	Symptoms	Symptoms	Duration (day)
1	31	10	Married	P2 A0	Free	Heavy	Dysmenorrhea menorrhagia	Menorrhagia	15
2	61	16 50	Married	Infertility	Asthma	Moderate	Lower abdominal pain	Postmenopausal bleeding	9
3	54	16 51	Married	P2 A3	Asthma	Moderate Irregular	Back pain	Postmenopausal bleeding	8
4	55	15 48	Married	P14 A0	Free	Heavy	Severe lower abdominal pain	Menorrhagia	7
5	38	15	Married	Infertility Ovarian cyst	Fibroid uterus	Heavy Irregular	Lower abdominal pain	Lower abdominal pain	14
6	41	14	Married	P7 A3	Free	Heavy Irregular	Free	Lower abdominal pain	13
7	40	13	Married	P6 A3	Hypertension	Heavy Irregular	Lower abdominal pain	Menorrhagia	14
8	50	12	Married	P5 A1	Free	Heavy Irregular	Lower abdominal pain	Menorrhagia	13
9	52	13 49	Married	P11	Hypertension	Moderate Irregular	Lower abdominal pain	Lower abdominal pain	7
10	46	14	Married	P8 A2	Diabetes mellitus on insulin	Moderate Irregular	Back pain	Back pain	13
11	43	11	Married	P6 A0	Free	Moderate	Back pain	Menorrhagia	8



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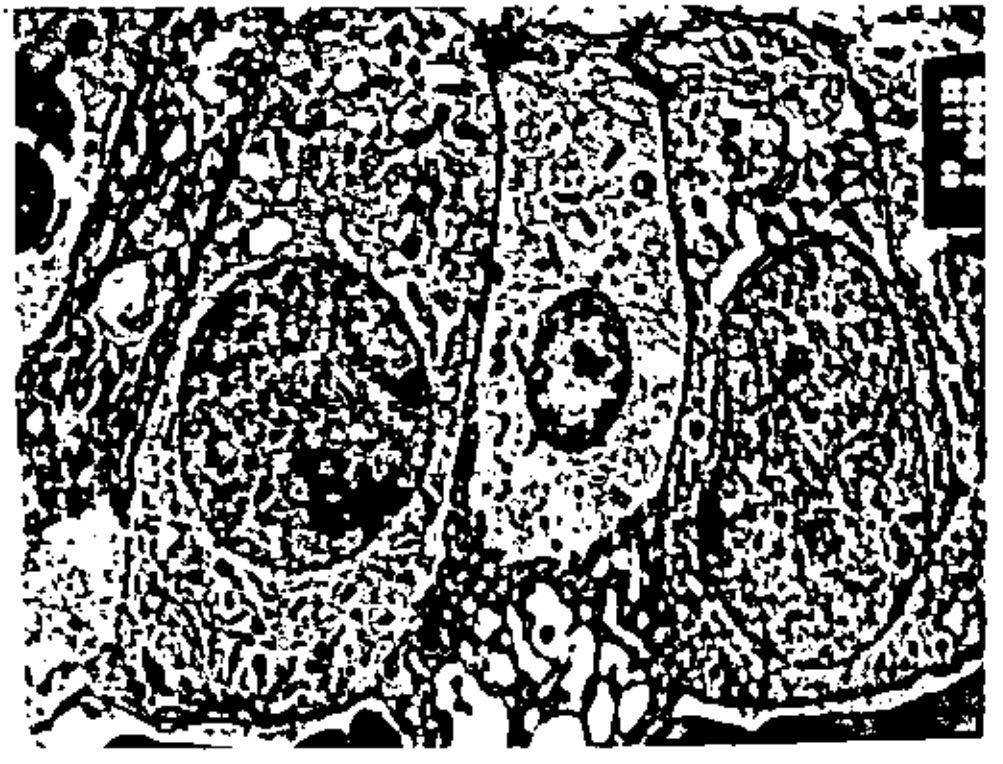


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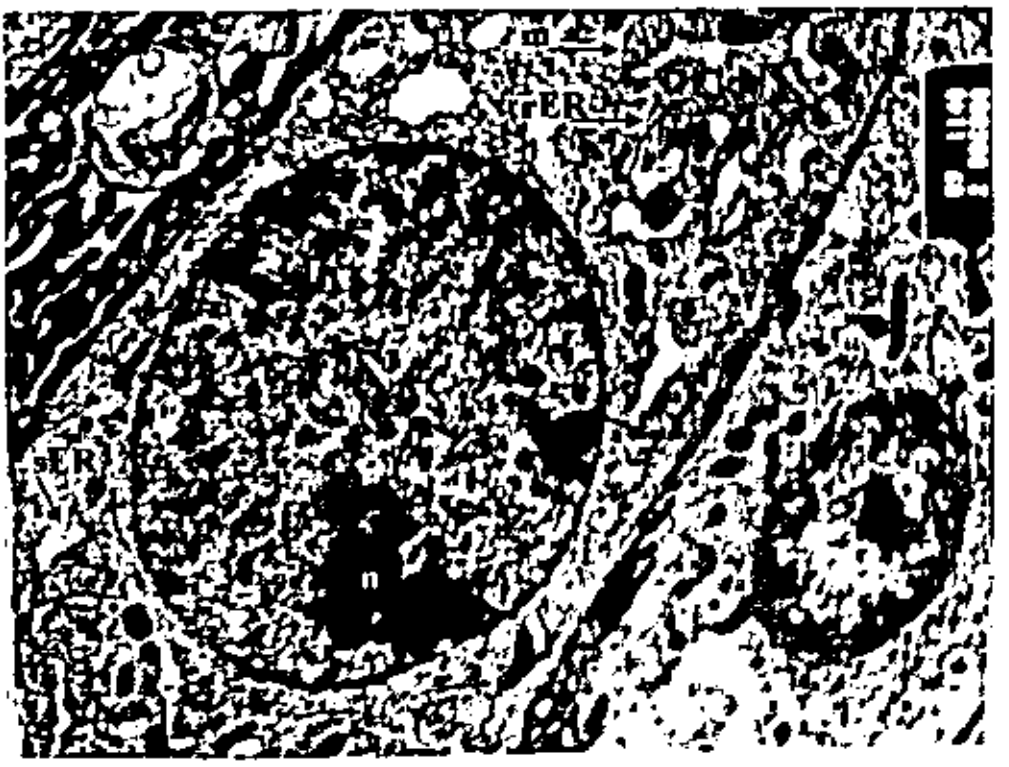
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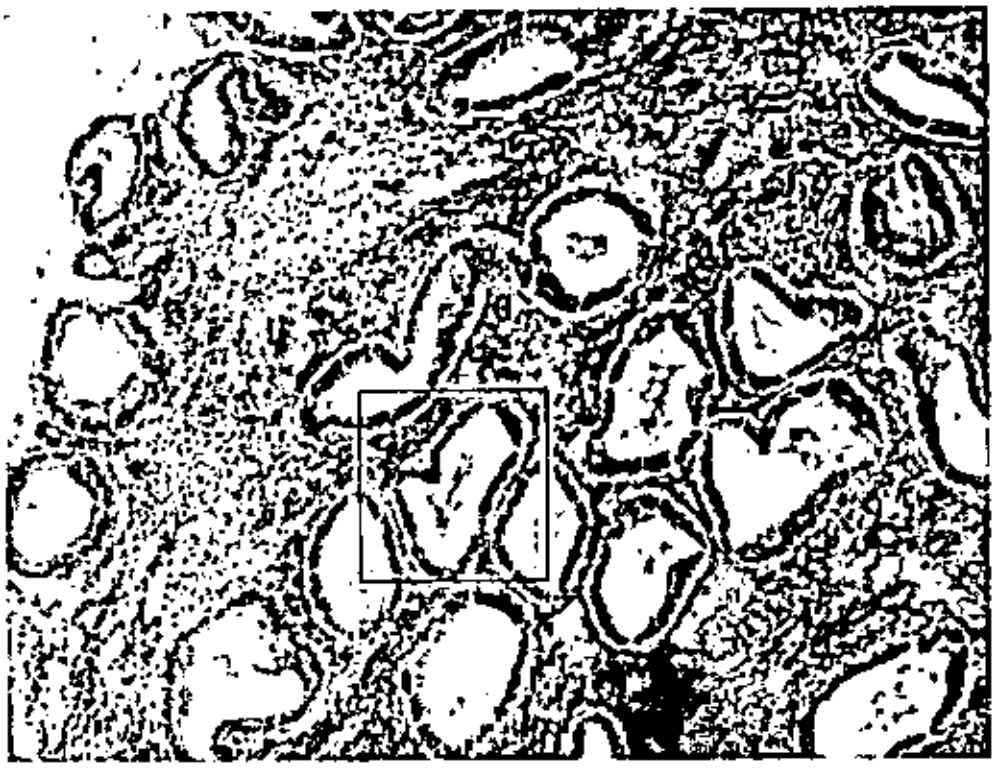

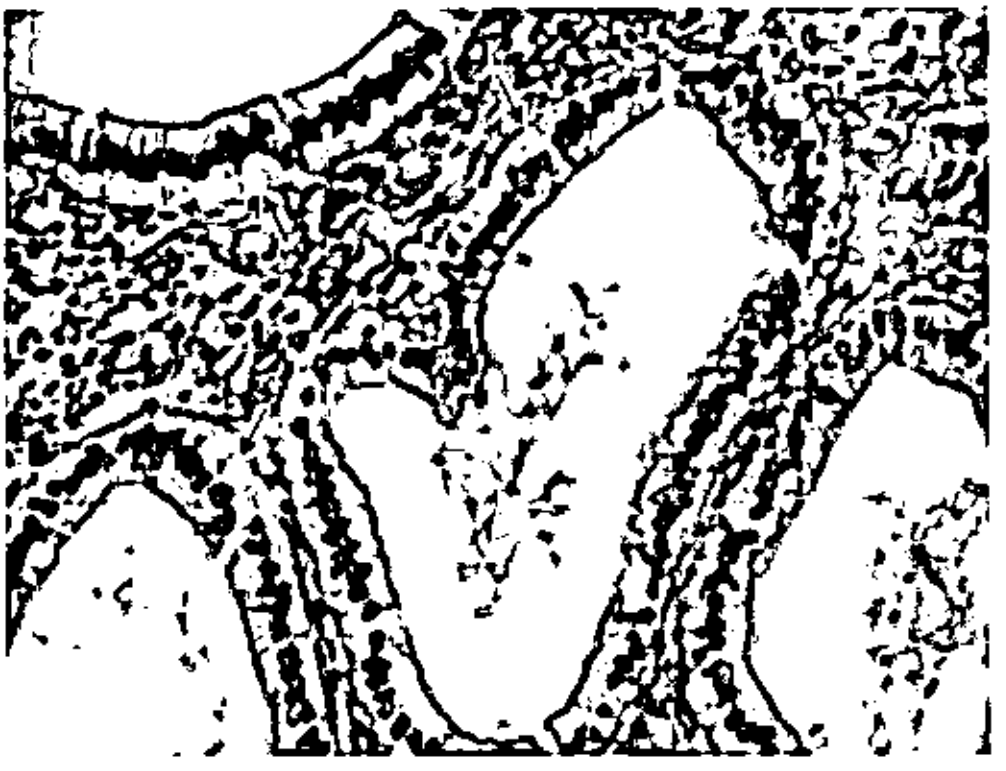

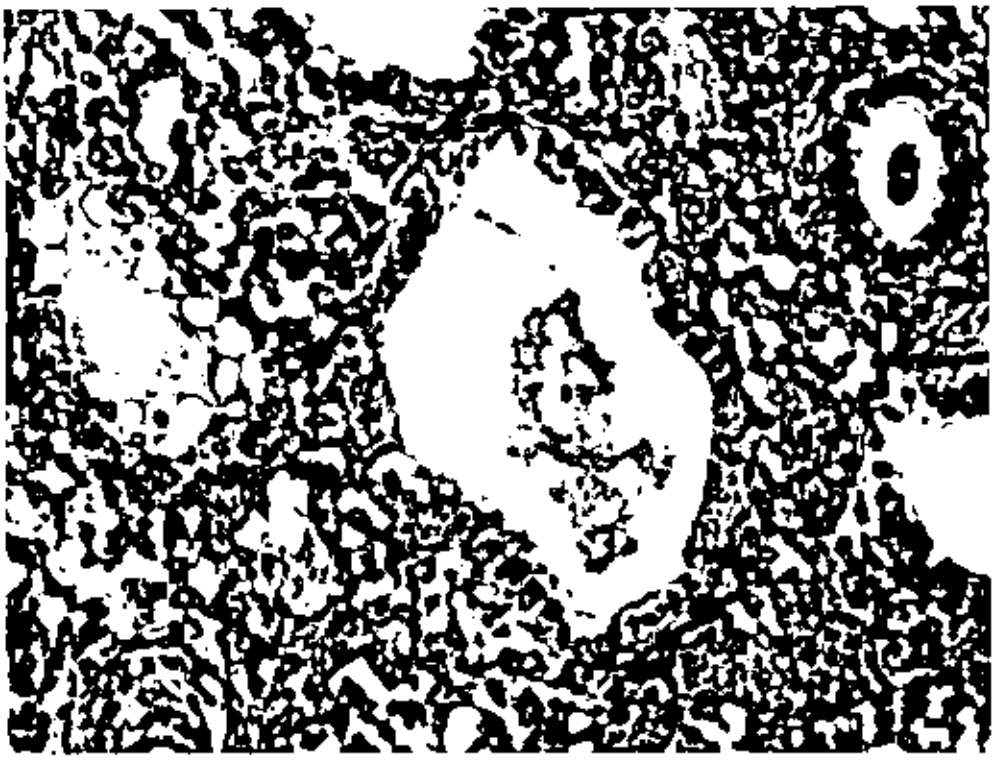

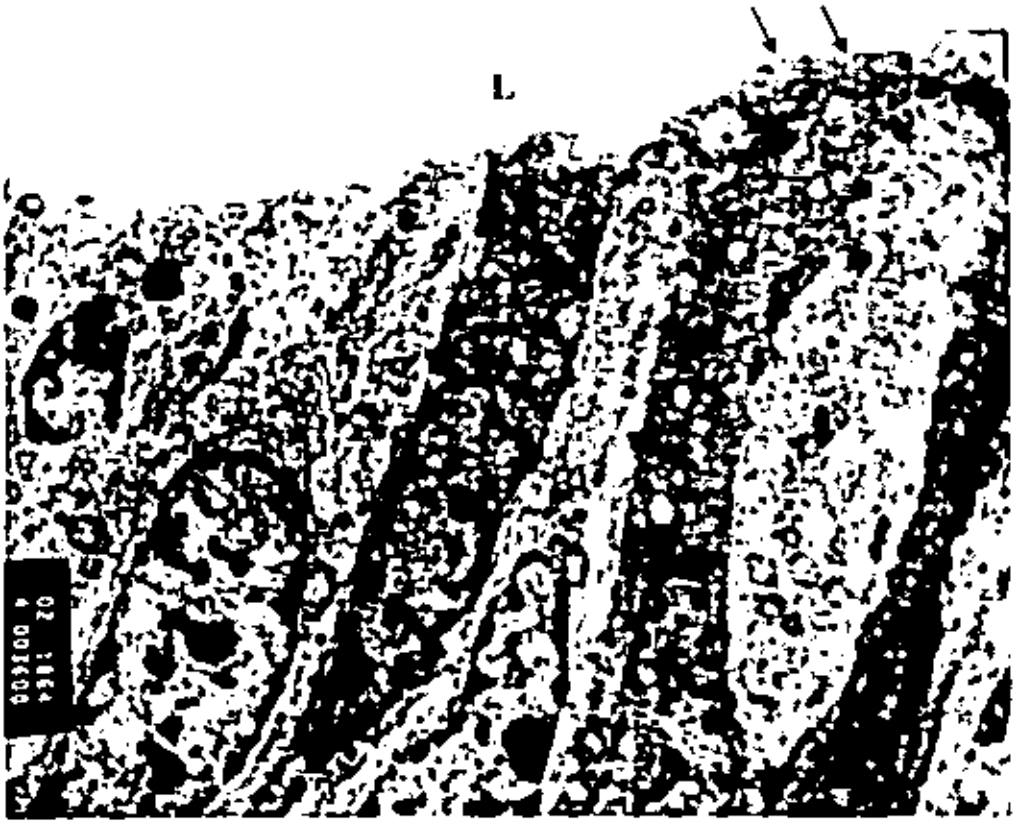
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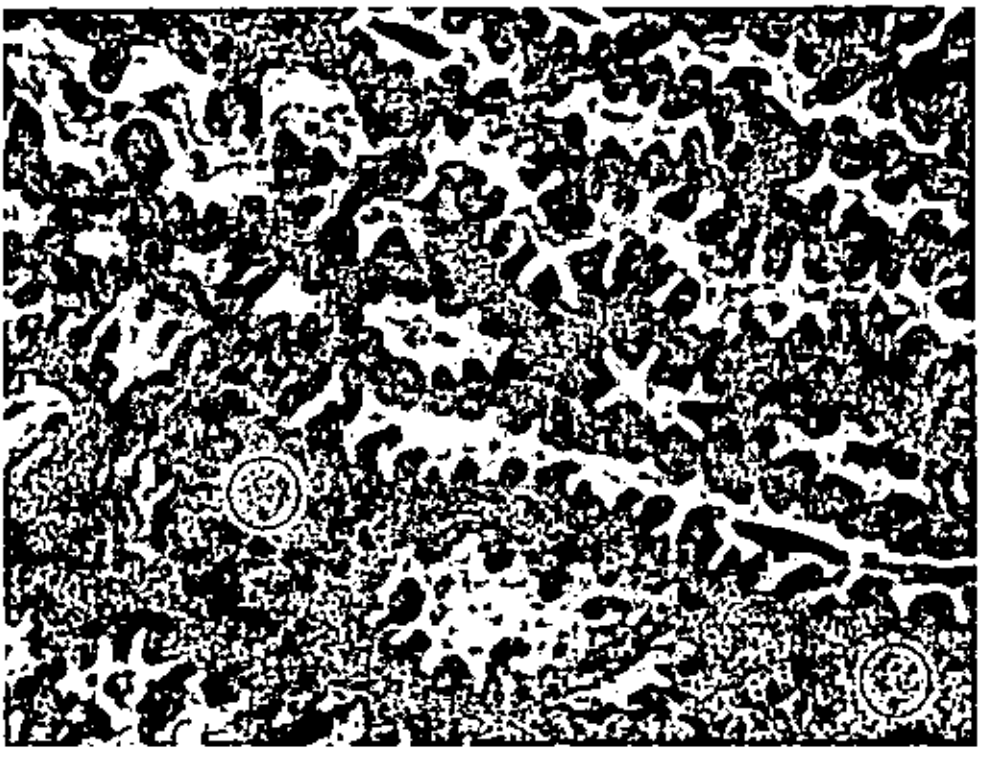


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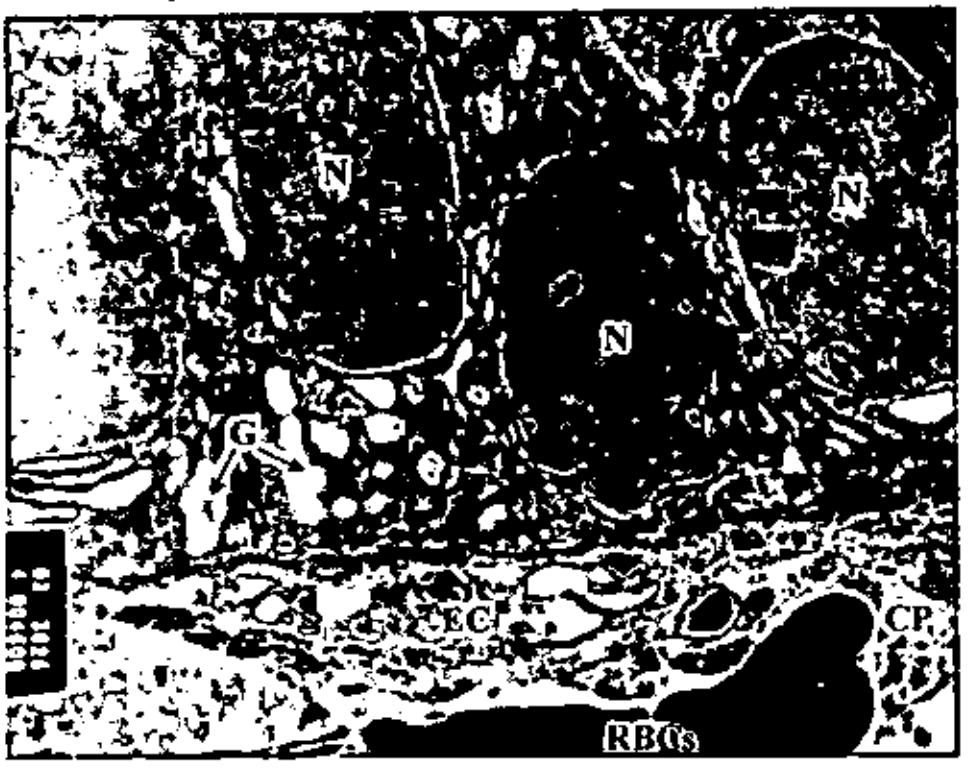
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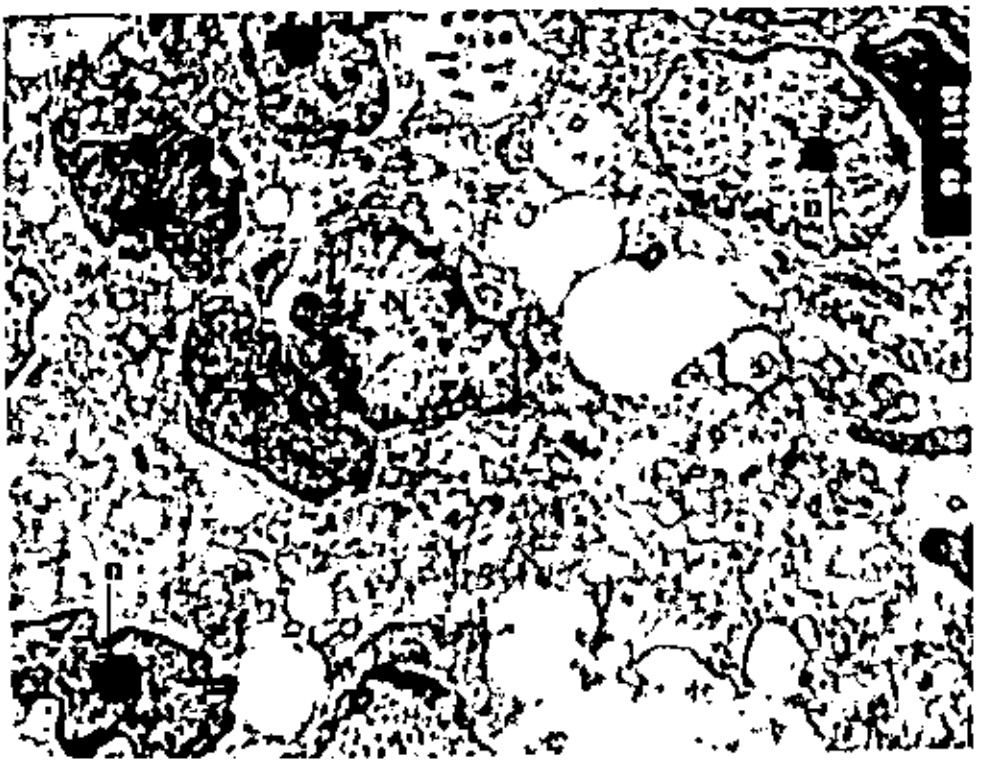

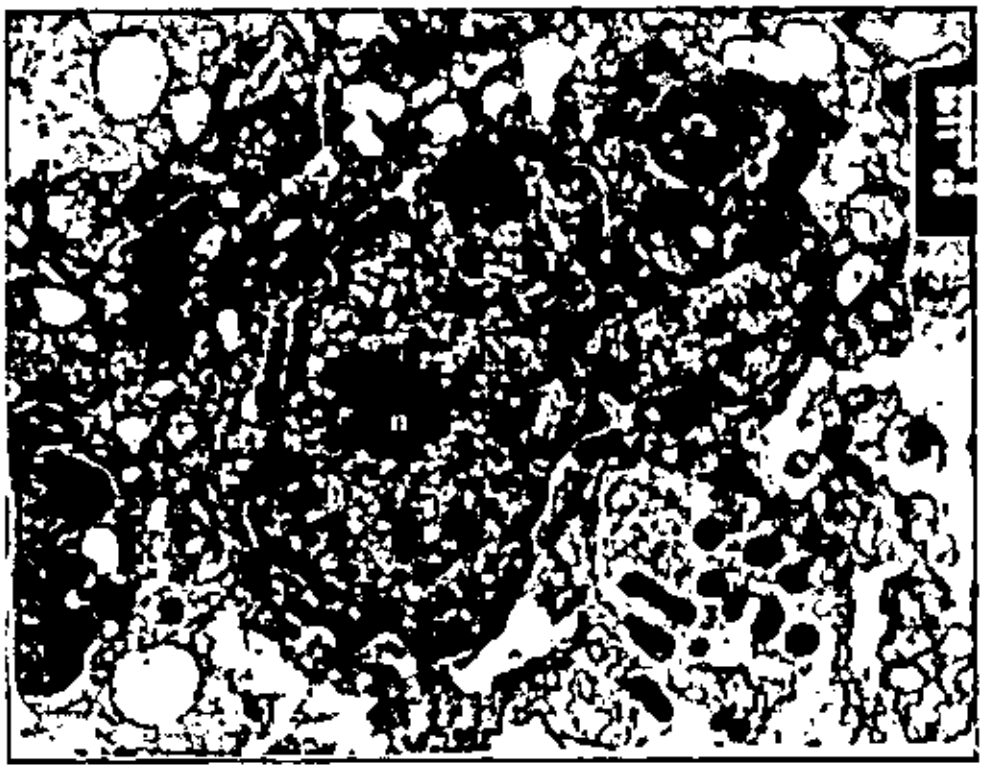

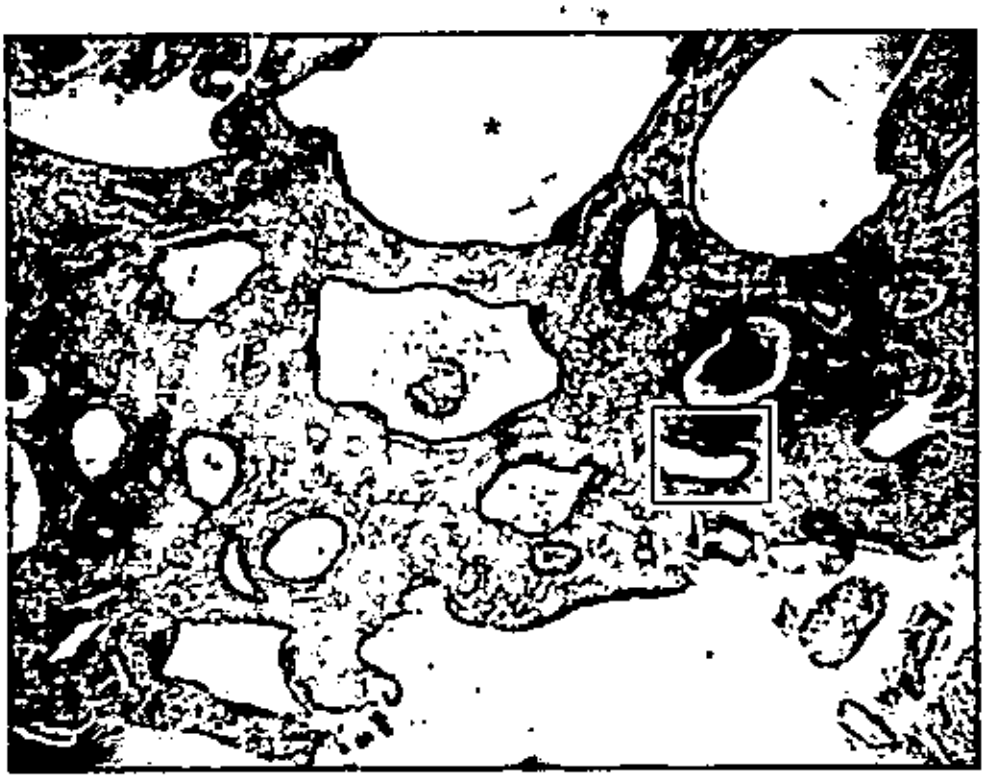

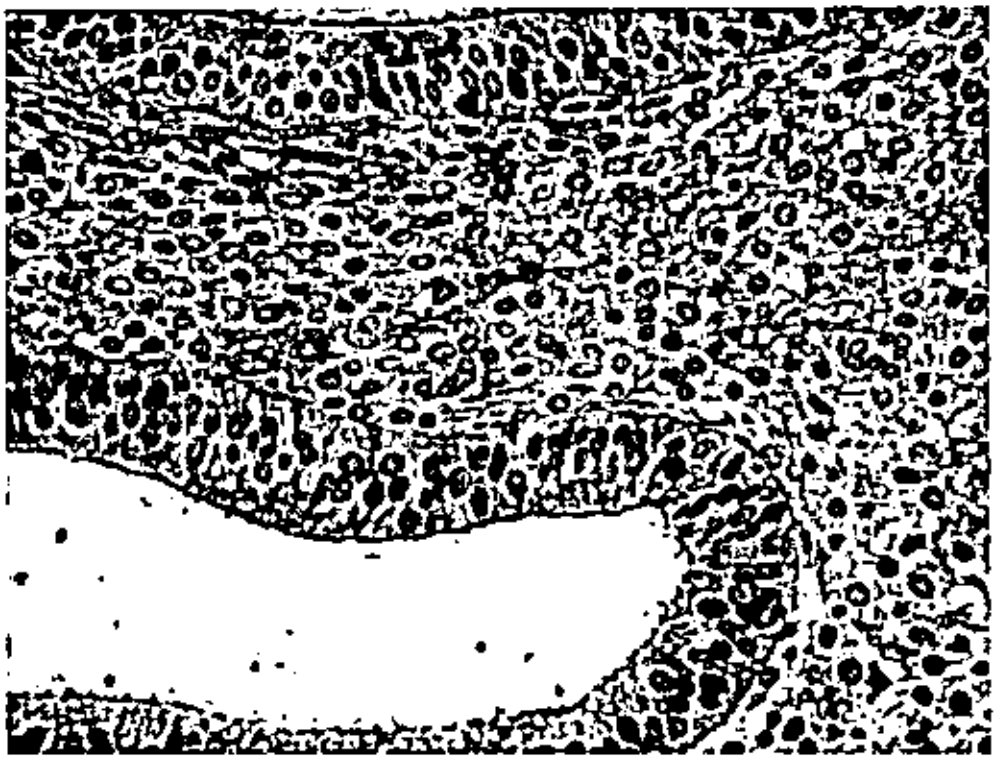

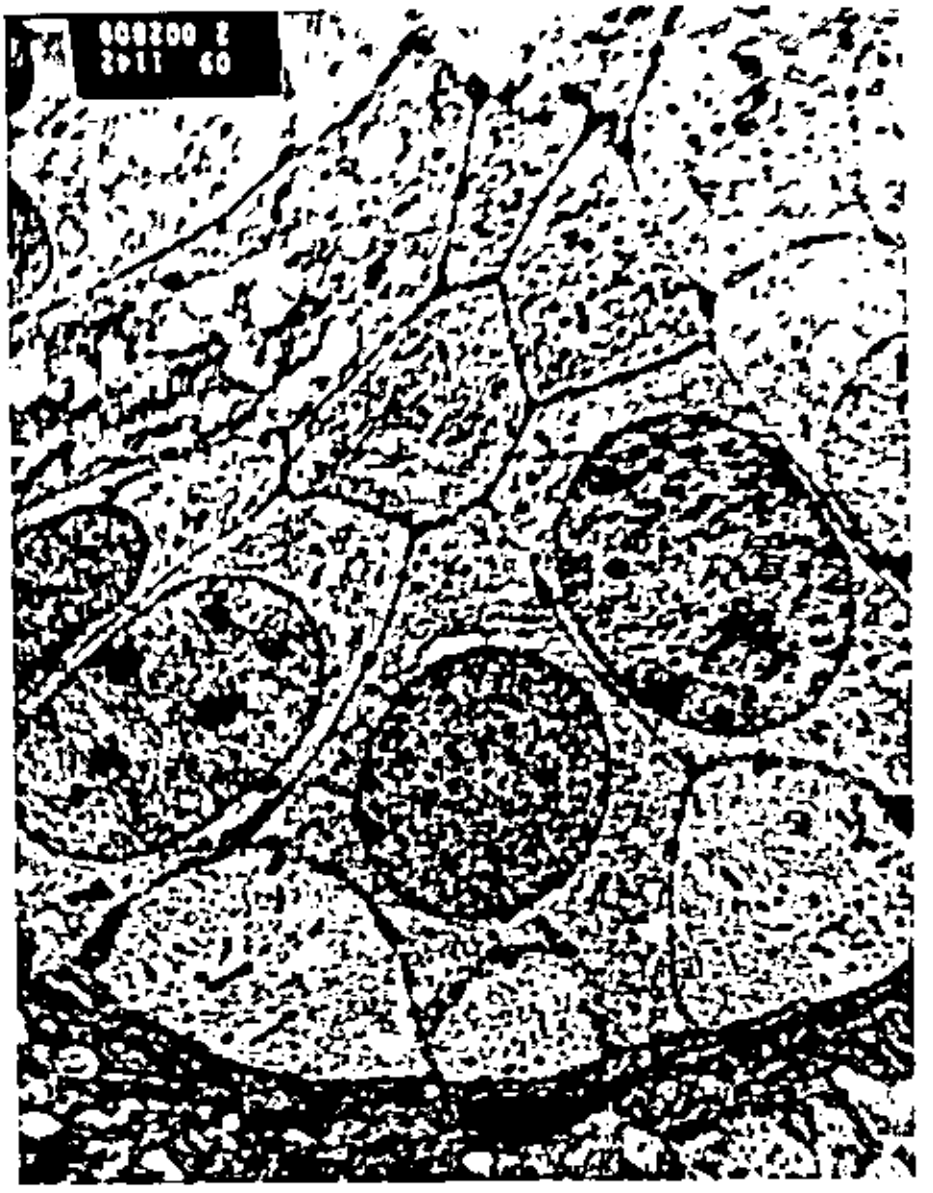

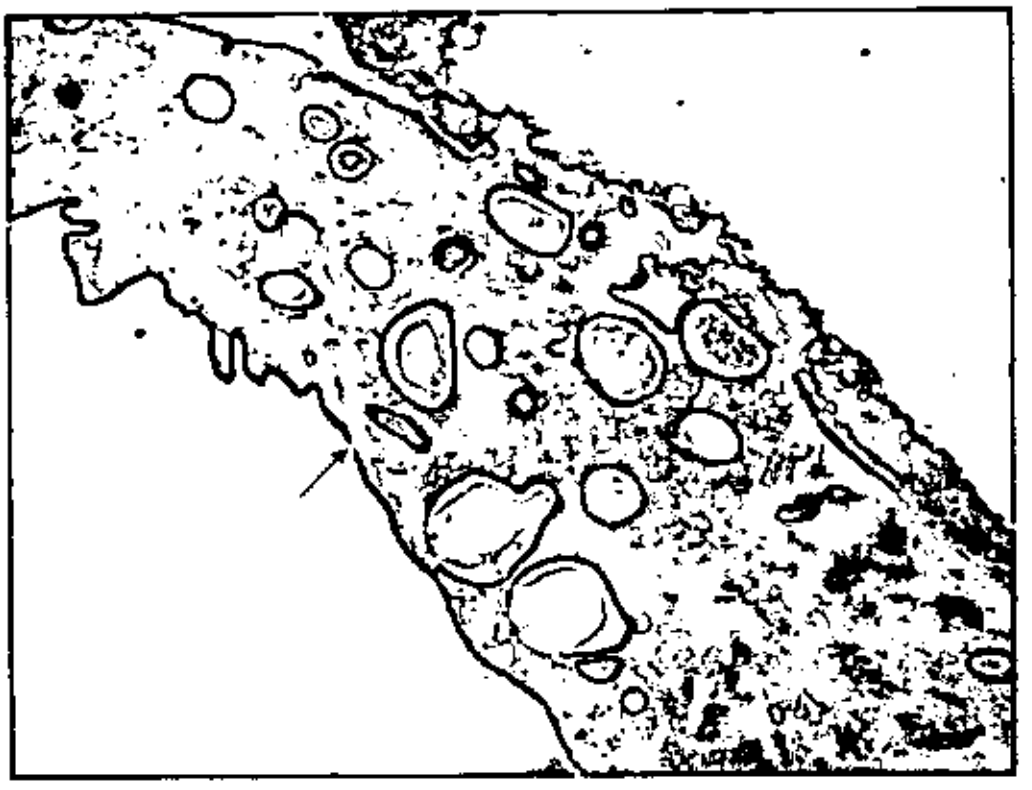

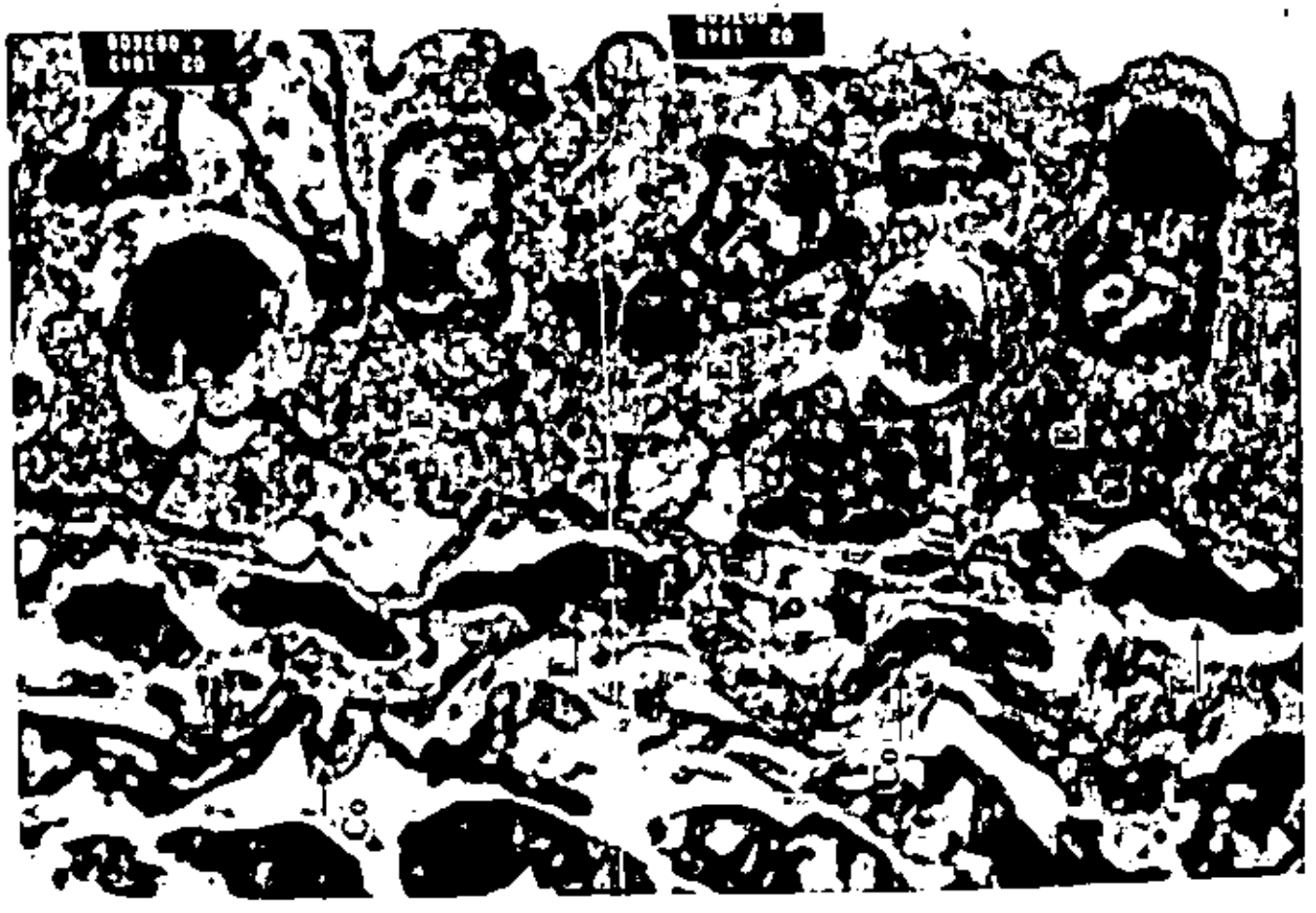

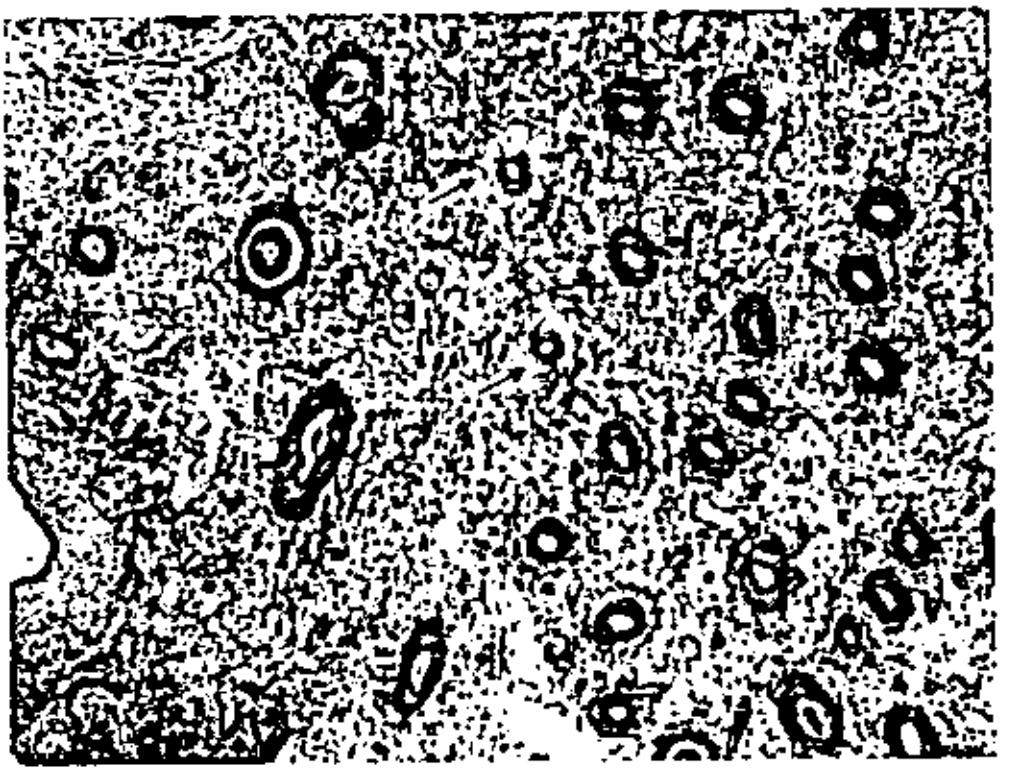

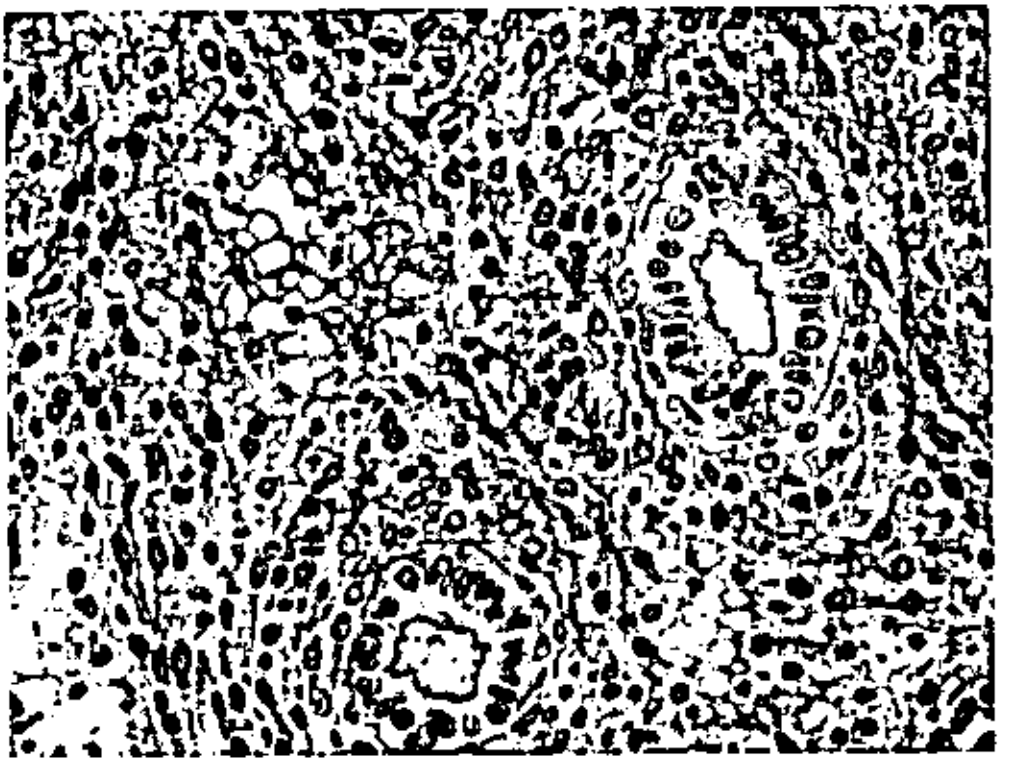


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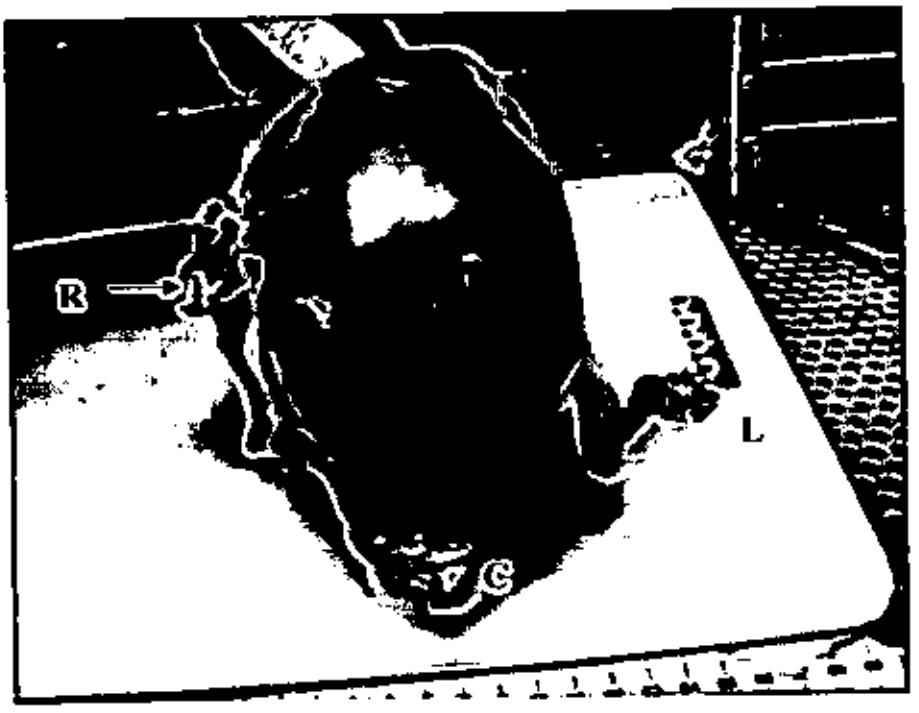
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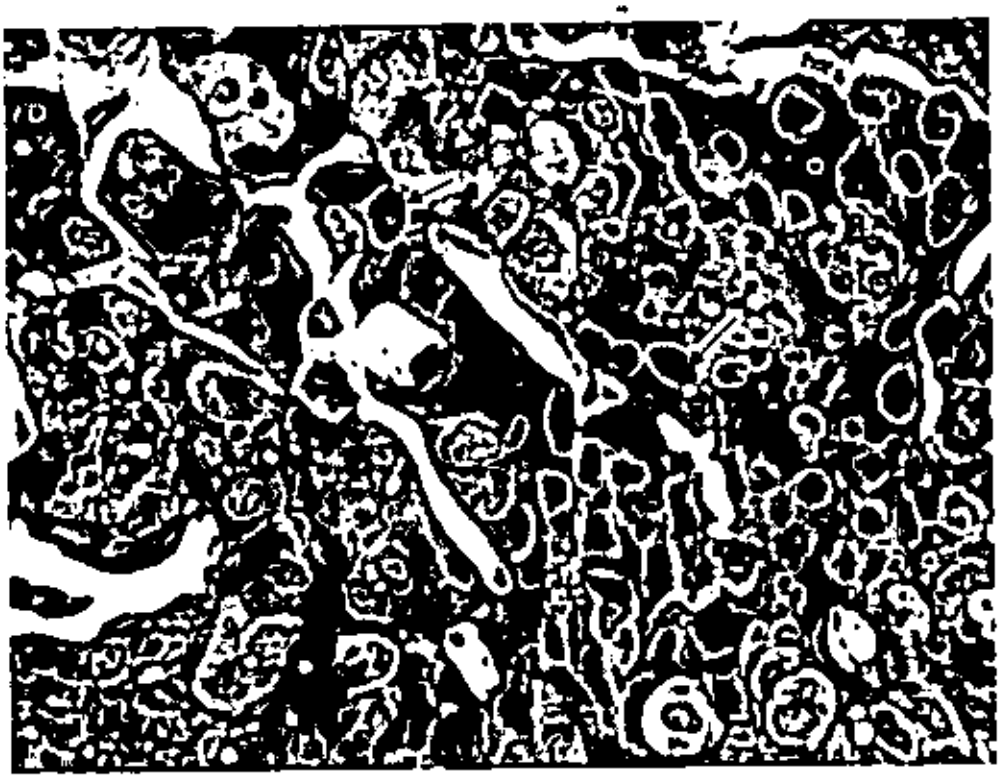

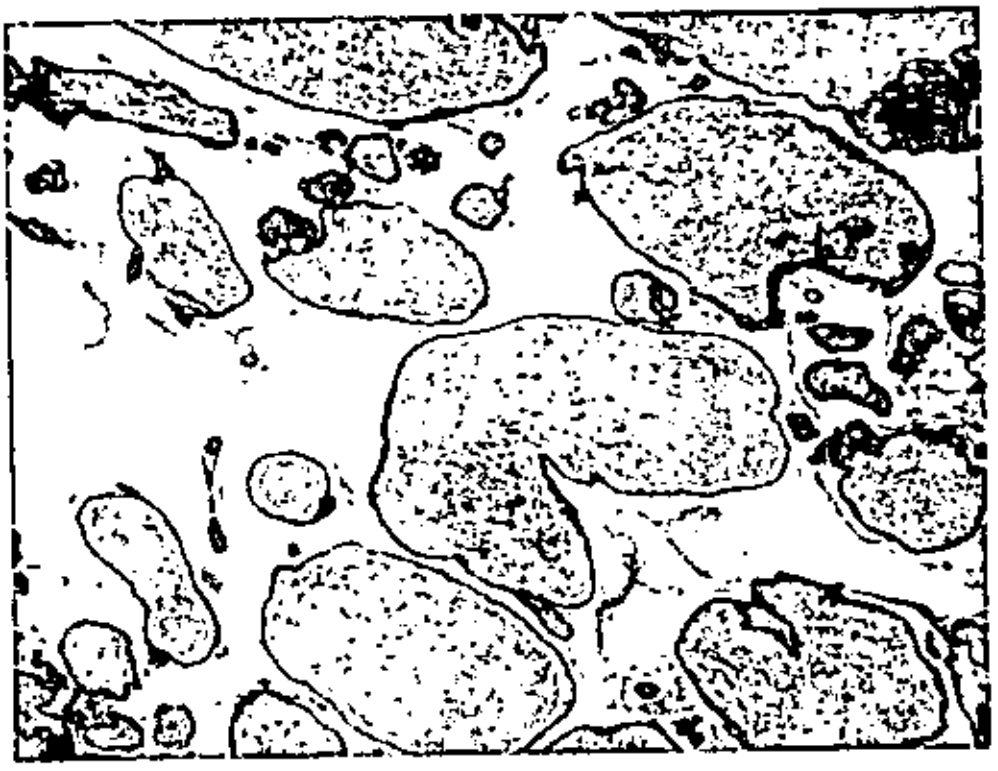

DISCUSSION

Discussion

Abnormal uterine bleeding is a common but complicated clinical presentation. It is a common reason for women of all ages to consult doctors. In a study conducted in the year 2000 in USA, it was estimated that 25% of gynaecologic surgeries involved abnormal uterine bleeding (Goodman, 2000).

Another study in USA found that menstrual disorders were responsible for 19.1% of the visits to the physician offices for gynaecologic conditions (Nicholson et al., 2001).

In a study conducted in Australia in 1998, it was estimated that up to 30% of outpatient visits to gynaecologists were because of disorders of the menstrual cycle (Wren, 1998).

In the present study, a trial is made to evaluate the causes of AUB among women visiting Ibn Sina hospital in Sirte, the Arab Libyan Jamahiriya (the teaching hospital of the college of medicine, Al-Tahadi University).

According to hospital admission records, a total number of 4925 women attended the hospital during 16 months from January 1st 2007 to April 30th 2008.

Among these, 587 presented as AUB; 245 had AUB not related to pregnancy, while 342 had pregnancy related AUB.

About 11.9 % of the total admission is attributed to AUB. This figure is lower than figures in USA and Australia (19.1 % and 30 %, respectively), most probably due to strict insurance programs of the health care in these western countries and the conservative attitude of our ladies to consult doctors for all gynaecologic problems.

In the present study the most frequent cause of AUB was attributed to simple endometrial hyperplasia (23.67%). The majority of cases ($^{38}/_{58}$

or 65.5 %) were in the perimenopausal age group which is postulated to be from 41 to 55 years ((Fazio & Ship, 2007), while 13 were in the child-bearing period, and 7 were in the postmenopausal age group (tables 7a, b & c).

Endometrial hyperplasia is a proliferative response to estrogenic stimulation. Most simple and complex hyperplasia in the reproductive and perimenopausal age groups are related to anovulation and are self-limited (Lee & Scully, 1989). Women in the postmenopausal-age group with AUB have a significant risk for having carcinoma or atypical hyperplasia. In this group, biopsy proved the presence of simple hyperplasia without atypia. This type of hyperplasia is usually related to unopposed estrogenic stimulation, either from exogenous hormone treatment or because of peripheral conversion of androgens to estrogen in adipose tissue (Ferenczy, 1983).

The second main cause of AUB in our study is disordered proliferative endometrium based on tissue biopsy (tables 5a & b). Foci of simple endometrial hyperplasia are seen in proliferative endometrium. This is usually related to anovulatory cycles, where we find proliferative endometrium at the time of the cycle when a secretory pattern is expected. The majority of the cases ($^{21}/_{35}$ or 60 %) are in the child-bearing age group and this agrees with the fact that anovulatory cycles are seen in this age group and the disordered proliferative pattern is considered at the beginning of the wide spectrum of endometrial hyperplasia (Hendrickson and Kempson, 1980).

Leiomyoma uteri is the third common cause of AUB in the studied group (tables 4, 14a & 14b). Thirty one (31) cases are included; they represented 12.65 % of the cases of AUB not related to pregnancy. This agrees with the results obtained in UK in the year 1995 by Akkad and his colleagues who found that 14 % of the causes of AUB where due to

uterine myomas. It was noted that $^{22}/_{31}$ of the patients were single and this agrees with the study of Prazzini et al. in 1988, which showed that leiomyoma are more common in nulliparous women. It was noted also in our study that two out of nine ($^{2}/_{9}$) married women in this group had no living children and this may suggest a clear cause for their infertility.

Problems related to secretory phase of the menstrual cycle were seen in 29 patients, which is 11.83 % of causes of AUB. The mean age group was 35.24 years, which coincides well with being in the child-bearing group. All women in this group were married and 86.2 % had living children.

It is known that following ovulation, there are high levels of both estrogen and progesterone and the endometrium is in the secretory phase, which is characterized by the twin processes of glandular secretion and stromal differentiation. The described changes are those seen in a cycle in which pregnancy does not occur (More, 1987). If a conceptus forms during a cycle, the corpus luteum persists and the estrogen and progesterone levels remain high.

Abnormalities in the secretory phase of the menstrual cycle are termed luteal phase insufficiency. This abnormality is also known as; corpus luteum defect, short luteal phase, or luteal inadequacy. It can be due to a variety of causes in which the common denomination is a diminished production of progesterone by the corpus luteum. Low levels of LH and FSH may be also responsible in some cases.

A state of luteal insufficiency occurs sporadically in normal women (Jones et al., 1970), but persistent inadequacy is of considerable importance in the aetiology of dysfunctional uterine bleeding, early abortion, and infertility.

In the present study, the fifth common cause of AUB was the presence of the atrophic pattern in the endometrial biopsies. Twenty five

(or 10.2 %) cases were present in this group, and the mean age was 57.36 years. This group included relatively older women; 60 % ($^{15}/_{25}$) were in the postmenopausal age group, while 40 % ($^{10}/_{25}$) were in the perimenopausal age group (tables 10a & b).

The reduction in estrogen levels at the time of the menopause may be quite abrupt and this is followed by endometrial atrophy, the endometrium becomes shallow, the glands are small and inactive, and the stroma is compact. Atrophic endometrium is responsible for AUB in up to 80 % of postmenopausal women (Rubin, 1987).

The next common cause of AUB in the present study, which was responsible for 8.16 % of the cases, includes two different endometrial lesions; one is complex type of endometrial hyperplasia and the second is the endometrial polyps (table 8a & b). The majority of patients ($^{16}/_{20}$ or 80 %) were in the perimenopausal and postmenopausal age groups and none of them had cytological atypia, and malignancy was not suspected in any of them. It is estimated that fewer than 2 % of endometrial hyperplasia without cytological atypia progress to carcinoma, whereas 23 % of hyperplasia with cytological atypia progress to carcinoma (Baak et al., 1992).

Twenty patients had endometrial polyps as the cause for their AUB (table 11a & b). All women in this group were in the child-bearing age group. This does not agree with the work of Mazur & Kurman (1994) who found that endometrial polyps occur frequently between 40 and 50 years. This may be explained by the fact that women under this study have extended child-bearing period and do not stop getting pregnant until the natural menopause stops them.

Cervical polyps were seen in 4.48 % of studied cases (table 16). Sixty percent (60 %) of them were in the perimenopausal age group and 80 % of them are multigravida. This agrees with Aaro et al. (1963) who

stated that cervical polyps are found most often during the fourth to sixth decades and in multigravidas.

Irregular ripening of the endometrium was responsible for 2.04 % of the causes of AUB (table 9). Islands of secretory glands are seen in proliferative pattern endometrium, this is due to inadequate progesterone (Rubin, 1987).

Non-specific chronic endometrium was responsible for 1.63 % of causes of AUB in this study, No source of infection could be traced in any of the cases examined (table 12). Adenomyosis was seen in these cases following examination of hysterectomy specimens. All were in the perimenopausal age group and grand multiparous ($P_{10} - P_{13}$; table 15).

Two cases were diagnosed as chronic specific granulomatous endometrium (tuberculosis), both were complaining of AUB and infertile, and had positive history of chest tuberculosis.

Only one case (0.4 %) was diagnosed as carcinoma of the body of the uterus (table 17). She has adenocarcinoma of endometrium.

AUB in relation to pregnancy:

A total number of 342 females are present in this group. They had AUB related to molar pregnancy and ectopic pregnancy. The majority of the cases ($^{255}/_{342}$; 74.5 %) were related to variable stages of abortion.

Lewis and Chamberlain (1990) reported the incidence of placenta abruption to be 1 in 85 to 1 in 200. In our work, the incidence is 1 in 107. They reported an incidence of placenta praevia to be 1 in 250, and the result of our work is 1 in 242 cases. These data confirm the accurate methods employed in our hospital for diagnosis of these quite serious obstetric problems.

Miscellaneous causes were responsible for 10 cases in this group; $^{4}/_{10}$ had coagulation problems (2 had blood diseases and 2 were on

anticoagulant therapy); $^{6}/_{10}$ had AUB due to variable traumatic causes and all were young premenarchal girls.

Conclusion & Recommendations:

Abnorml uterine bleeding is a common complaint of women of all age groups all over the world. We had the opportunity to study this problem in our country. The majority of women complaining of AUB, had reasons related to pregnancy.

Since AUB had serious effects on women's health, and these effects range from mild discomfort to serious life threatening conditions and even death, the study has the following recommendations:

- Serious and continuous efforts should be made to encourage women to seek help in these circumstances.
- It is important to prepare centers for women care in each possible place, in a trial to save lives of mothers.
- Histopathological examination of specimens is of a vital role in establishing diagnosis, which helps early treatment and reduces complications.
- The use of EM helps to clarify many facts about female genital tract pathology, and it is a useful tool for both diagnostic work and research activities.
- We finally recommend more work on different aspects of AUB. and annual reports about the different causes to be correlated for the planning of health care services in our hospitals and all over the Jamahiriya.

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كما توصي الدراسة بإجراء المزيد من الأبحاث للأسباب المختلفة للنزف الرحمي غير المعتاد و إعداد تقارير سنوية للإستفادة منها في برامج الرعاية الصحية و في المستشفيات على نطاق الجماهيرية.

أظهرت الدراسة أن السبب الأول للنزف الرحمي غير المعتاد كان فرط التنسج البسيط لبطانة الرحم (Simple endometrial hyperplasia) وبنسبة 23.67 %: وكانت أغلب الحالات في عمر البلوغ (65.5 %) : بينما كانت 22.4 % ممن كن في عمر الحمل: و 12.1 % ممن هن في عمر ما بعد سن اليأس.

وكان السبب الثاني لحالات النزف هو النمو غير المنتظم لبطانة الرحم (Disordered proliferative endometrium) والذي يعزى للدورات عديمة الإباضة حيث كانت أغلب الحالات (60 %) ممن هن في عمر الحمل.

أما السبب الثالث لحالات النزف الرحمي فهو ورم عضلة الرحم الذي يدعى (Leiomyoma) حيث كان بنسبة 12.65% وهي مقاربة لنسبة 14 % المسجلة عام 1995 في المملكة المتحدة. كما لوحظ أن 70.9 % من الحالات كن من العازبات وهذا يتفق مع دراسة أظهرت أن هذا السبب أكثر شيوعاً بين النساء غيرالمنجبات.

أما المشاكل المتعلقة بالطور الإفرازي(Secretory phase) للدورة الشهرية فقد شكلت نسبة 11.83 % من أسباب النزف و كان متوسط العمر لهذه المجموعة 35.24 عاماً و هو يتوافق مع عمر الحمل، كما كان جميع نساء هذه المجموعة من المتزوجات وكان 86.2 % منهن لديهن أطفال أحياء.

وأظهرت الدراسة أن السبب الخامس وهو ضمور بطانة الرحم (Atrophic endometrium) بنسبة 10.2 % من الحالات و قد شملت هذه المجموعة نساء كبيرات نسبياً بلغ متوسط أعمارهن 57.36 عاماً و كان 60 % منهن في عمر ما حول سن اليأس. وقد أشارت إحدى الدراسات إلى أن ضمور بطانة الرحم مسؤول عن حالات النزف في نسبة تصل إلى 80 % من النساء ما بعد سن اليأس. وكانت بقية الحالات لأسباب أخرى مختلفة و بنسب صغيرة.

أما حالات النزف الرحمي المتعلق بالحمل و التي كان عددها 342 حالة فقد كان أغلبها (74.5 %) يعود لمراحل متنوعة من الإجهاض.

ولما كان للنزف الرحمي غير المعتاد تأثيرات جدية على صحة المرأة تتراوح بين الشعور البسيط بعدم الإرتياح الى التهديد الخطير للحياة و ربما الموت، لذا فإن من الضروري القيام بجهود حثيثة لتشجيع النساء في بلدنا لطلب المشورة الطبية مع توفير مراكز الرعاية الصحية للنساء في مختلف المناطق.

الملـــخـــص

يحدث النزف الرحمي غير المعتاد لكل النساء في فترة ما من حياتهن ويعتبر مقلقاً للمصابات به لكونه غالباً ما يكون مصحوباً بالشعور بالتعب و عدم الارتياح و الكآبة مما يؤثر على مجرى حياتهن بما في ذلك قلة النشاط وتغيرات في الوظائف الجنسية.

وقدرت الدراسات أن النزف الرحمي غير المعتاد يعتبر مسؤولاً عن حوالي 20% من الزيارات للعيادات النسائية في الولايات المتحدة الأمريكية، كما أنه يتسبب في أكثر من نصف مليون حالة استئصال للرحم فيها سنوياً.

وفي الجماهيرية العربية الليبية تقوم أعداد كبيرة من النساء بزيارة الأقسام النسائية في المستشفيات والعيادات الخاصة بسبب النزف الرحمي غير المعتاد. إن حجم هذه المشكلة غير مثبت بشكل دقيق، كما أن هناك بعض العادات والتقاليد التي قد تؤثر في المشكلة مثل حالات زواج الفتيات المبكر و قلة إستخدام موانع الحمل وبالتالي الإنجاب المتكرر وما قد يسببه .

تناولت هذه الدراسة مشكلة النزف غير المعتاد للرحم لدى المريضات اللواتي إرتدن مستشفى بن سينا التعليمي في مدينة سرت لمدة 16 شهراً من أي النار(1) 2007 و لغاية شهر الطير (4) 2008 .

أجريت للمريضات الفحوصات السريرية و المختبرية المعتادة و أخذت العينات (الخزعات) بعد إجراء التوسيع والقشط (D & C) أو إستئصال الرحم.

أعيد فحص الشرائح النسيجية المحضرة من خزعات جميع الحالات بطريقة الهيماتوكسلين/ إيوسين المعتادة للفحص بالمجهر الضوئي في مختبر الأمراض النسيجية في المستشفى ، كما أعيد تحضير شرائح إضافية للتأكد من بعض الحالات. وكذلك أخذت عينات من بعض الحالات لأغراض الفحص بالمجهر الألكتروني النافذ.

بلغ عدد المريضات اللواتي إرتدن المستشفى خلال مدة الدراسة 4925: و كان 11.9 % منهن بسبب النزف الرحمي غير المعتاد، و تعتبر هذه النسبة أقل مما في الولايات المتحدة (19.1 %) و أستراليا (30 %) و يعزى ذلك لنظام الرعاية الصحية المتطور في الدول الغربية من جهة وبسبب عدم ميل النساء في بلادنا لمراجعة الطبيب في أغلب الحالات.

ومن بين العدد الكلي تم تشخيص 587 حالة نزف رحمي غير معتاد: كان منهن 245 حالة لا تتعلق بالحمل بينما كان 342 حالة لها علاقة بالحمل. و قد قسمت الحالات إلى 18 مجموعة حسب أسباب النزف.

الأسباب المرضية

للنزف الرحمي غير المعتاد

رسالة مقدمة إلى

كلية الطب / جامعة التحدي

للحصول على درجة الإجازة العليا

في

علم الأمراض النسيجية

مقدمة من

الطبيبة / أسماء أحمد الكيلاني

بكالوريوس طب و جراحة

تحت إشراف

الدكتور / فالح حسن ديوان

أستاذ علم الأنسجة / كلية الطب / جامعة التحدي

و

الدكتورة / إلهام إبراهيم سيف

أستاذ علم الأمراض / كلية الطب / جامعة عين شمس

2008