Acknowledgement

First and formost, I would like to acknowledge my debt and deepest thanks to Prof. Dr. El Said El Mahgob, Professor of Obstetrics and Gynecology for his generous and very precious help and guidance to which I owe more than I can express. I wish he would kindly accept my gratefulness and appreciation for his generosity and kindness.

I am also greatly indebted to Dr. Hatem Saad Ismail, Lecturer of Obstetrics and Gynecology who, with unfailing kindness, has assissted me with his experience and advice. He sincerely suggested many useful improvements and made really practical comments which helped to make this work what it is.

I have also to pay special tribute to my father and mother, who supported me with their care and love and to whom I most affectionately offer this work as a present.

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Introduction

It is well known that early references to malignancies of the uterine corpus are rare. In 1792, it was found that in women at or past the age of menopause, prolonged periods and passage of blood clots indicated a diseased womb and often ended in cancer. Surgical extirpation of the diseased uterus was attempted, but the 18th century closed without any serious effort on the part of the profession to deal with this problem. **(Ricci, 1943)**. Adenomatous hyperplasia of the endometrium was first described in 1900. In the late 1940s the interrelationship between estrogens and endometrial hyperplasia was described. The successful use of progestational agents in the treatment of endometrial cancer was reported in 1956, and in 1970, the original staging system for endometrial carcinoma was outlined. This system was revised in 1988. **(Sutton et al., 1990)**.

Endometrial carcinoma has, until recent years, been erroneously thought to be relatively bening form of cancer. It is now considered far from bening in its course or outcome having an overall five - year survival of about 67 percent. **(Pettersson et al., 1985)**. Nevertheless, endometrial carcinoma does not have a reputation of rapid dissemination. **(Sivridis et al., 1987)**.

Endometrial carcinoma tends to occur in women who are obese and above average hight, of low parity and have a late menopause **(Amias, 1991)**. Endometrial hyperplasia induced by endogenous or exogenous estrogen is a precursor of endometrial carcinoma and a progression can be traced between adenomatous hyperplasia, atypical adenomatous hyperplasia and invasive adenocarcinoma. **(Fox and Buckley, 1991)**.

ANATOMY

Abbreviations

CT ---------- *Computerized Tomography*

D & C ------ *Dilation and Curttage*

DMPA ----- *Depot - Medroxy Progesterone Acetate*

FIGO ------ *International Federation of Gynecology
and Obstetrics*

GOG ------ *Gynecologic Oncology Group*

HPV ------ *Human Papilloma Virus*

MRI ------ *Magnetic Resonance Imaging*

US -------- *Ultrasonography*

INTRODUCTION

ANATOMY

The *uterus* is a muscular, hollow organ that lies in the true pelvis between the bladder and rectum. Its measurements are usually stated to be 7 to 7.5 cm long, 4.5 to 5 cm wide, and 2.5 to 3 cm thick. The cephalic portion of the corpus is known as the fundus and is characterized by lateral flarings known as horns, or cornua. The oviducts enter the fundus in the region of these cornua and demarcate the fundus from the main body of the uterus. The constricted area that separates the corpus from the cervix and is known as the isthmus. The cavity of the corpus has an average depth of about 6 cm and a capacity of 3 to 8 ml. The corpus possesses anterior and posterior surfaces, both of which are covered by visceral peritoneum. The anterior surface lies in contact with the most cephalad portion of the urinary bladder. The posterior surface of the corpus is completely invested with a peritoneal covering. Caudally this peritoneal envelope is continued over the uterosacral ligaments, cervix, and upper portion of the posterior vaginal wall and is then reflected dorsally to form pouh of Douglas, The anterior and posterior coverings of the corpus join at the lateral uterine margin and form the leaves of the *board ligament.* The upper border of broad ligament consists of the peritoneal fold over the oviduct and the lateral extension from the ovary encircling the infundibulopelvic ligament. The midportion encompasses the round ligament, and the most inferior portion is thickened and contains a condensation of connective tissue and muscle fibers called the cardinal ligament or transverse cervical ligament of Mackenrodt. The uterus possesses a dual *blood supply,* receiving branches from both the uterine and ovarian arteries. The uterine artery is derived from the hypogastric anterior truck. It divides into ascending and descending limbs. The former runs tortuously upward giving horizontal anterior and posterior branches. As it reaches the cornu, a

branch is sent to the round ligament (artery of sampson) and then is project-
ed along the oviduct to anastomose with the ovarian vessels in the mesosal-
pinx. A series of radial arteries are given off at right angles from the uterine
artery as it courses along the corpus. These radial arteries branch in the in-
ner third of the myometrium into straight and spiral (coiled) vessels. The
straight arteries pass only as far as the basal layer of the endometrium and
terminate in capillaries in that region. The spiral arteries, however, follow a
coiled course throught the thickness of the endometrium give off a few
branches in the endometrium, then fork and give rise to superficial capillar-
ies just below the surface epithelium. These capillaries form plexuses in the
stroma and a meshwork around the glands **(Finkler and Friedman,
1990).** The *lymphaties* of the uterine corpus pass with each artery to the in-
ternal iliac group of lymph nodes **(Last, 1986).** The lymphatic drainage of
the uterus involves several chains of lymph nodes. From the subperitoneal
plexus, the collecting trunks of the lower uterine segment may drain by way
of the cervix to the external iliac chain or by way of the isthmus to the later-
al sacral nodes. Drainage along the round ligaments progresses to the super-
ficial inguinal nodes, then to the femoral, and finally to the external iliac
chain. Drainage laterally to the suspensory ligament of the ovary involves
the lumbar pedicle and progresses in a retroperitoneal manner across and
anteriorly to the ureter, to the lumbar nodes (interaorticocaval) that lie along
aorta, and inferiorly to the kidney. **(Frantz, 1991).** The lymphatic drainage
of the uterus proceeds in four or five channels through the broad ligament
just below the oviducts, then upward along the ovarian vessels. In the course
of their passage through the parametrium and ovarian ligament, they com-
municate with the ovarian lymphatics to terminate in the lumbar lymph
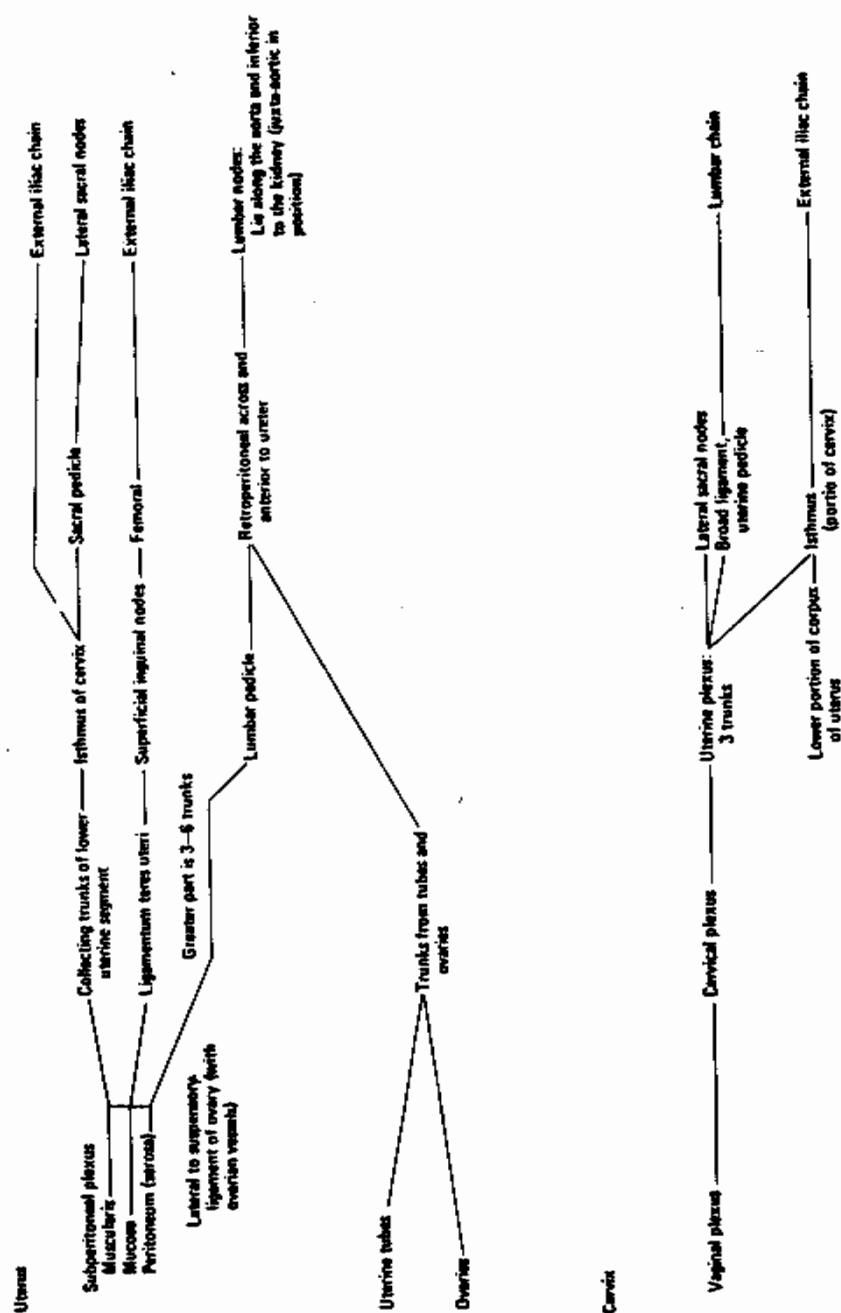nodes found in front of the aorta from its bifurcation to the diaphragm. The

Fig. 1 Lymphatic drainage of the uterus
(Frantz, 1991)

lymphatics from the lower uterine segment anastomose with adjacent lymph channels from the cervix and drain to the obturator, iliac, hypogastric, and sacral nodes. A third route of lymphatic drainage, especially from the fundal areas, is via the round ligament to the superficial inguinal nodes. (**Finkler and Friedman, 1990**). Carcinoma of the fundus may occasionally spread along the round ligament to superficial inguinal nodes, but this does not mean that lymph from the uterus normally drains along this pathway. (**Last, 1986**).

The uterine corpus has a thick muscularis, the *myometrium*. Its internal surface is lined by mucous membrane, the *endometrium*, composed of columnar epithelium and simple tubular glands that extend deep into the lamina propia. Under the influence of the hypothalamus the hypophysis, and the ovary, the endometrium undergoes the changes of the menstrual cycle. The lamina propria of the uterus consists of three layers: a superficial stratum compactum, a middle stratum spongiosum, and a deep stratum basale. The compactum and spogiosum are made of cellular connective tissue and are nourished by coiled arteries. The stratum basale is made of dense cellular connective tissue and is vascularized by the stright arteries. The stratum compactum and stratum spongiosum together form the stratum functionale, most of which is sloughed during the menstrual period . In the early *proliferative* phase the mucosa is low and the glands are short narrow, and straight. As the proliferative phase advances, the glands become longer, thicker, and more tortuous. Mitotic figures are seen in the endometrial epithelium throughout the proliferative but not in the secretory phase. The first sign of *ovulation* that can be detected with the light microscope is the subnuclear vacuole, on approximately the sixteenth day of a typical 28-day cy-

cle. During the first few days of the *postovulatory (secretory)* phase, the subnuclear vacuoles move past the nuclei to reach the lumina of the endometrial glands. By about day 21 (midsecretory phase) the glandular epithelium has become low and the endometrial secretions and stromal edema have provided an ideal bed in which the ovum may implant. By day 25 (late secretory) the cytoplasmic borders of the glandular cells have become regged and secretory exhaustion occurs. The second half of the secretory phase, or the last week of the menstrual cycle, is concerned with changes in the stroma. In a cycle in which pregnancy does not occur, the secretory (premenstrual) endometrium regresses and menstruation follows. (**Wynn, 1988**).
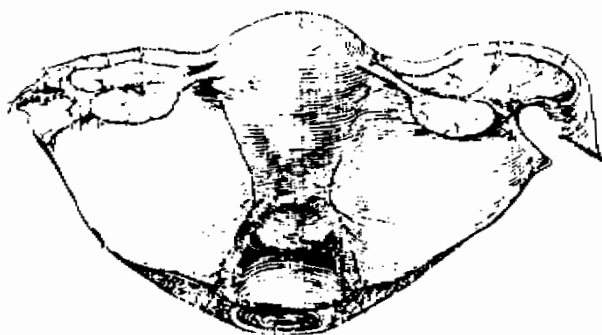
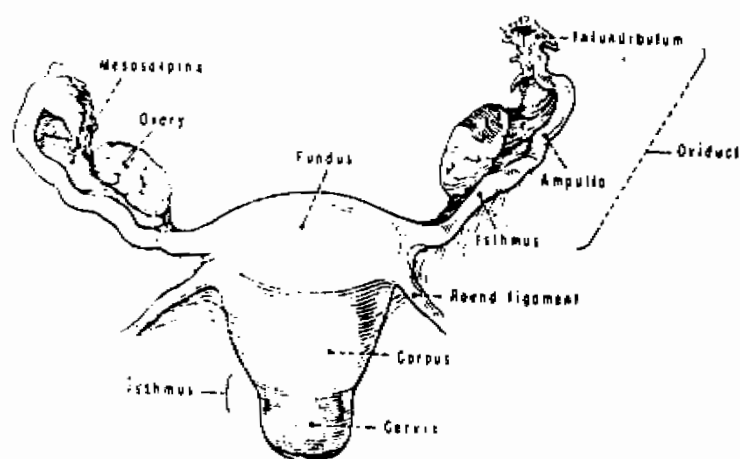**Fig. 2 Posterior view of the uterus**
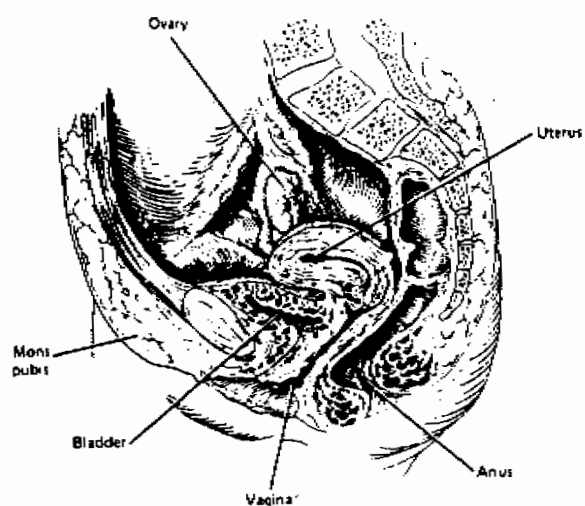**(Frantz, 1991)**

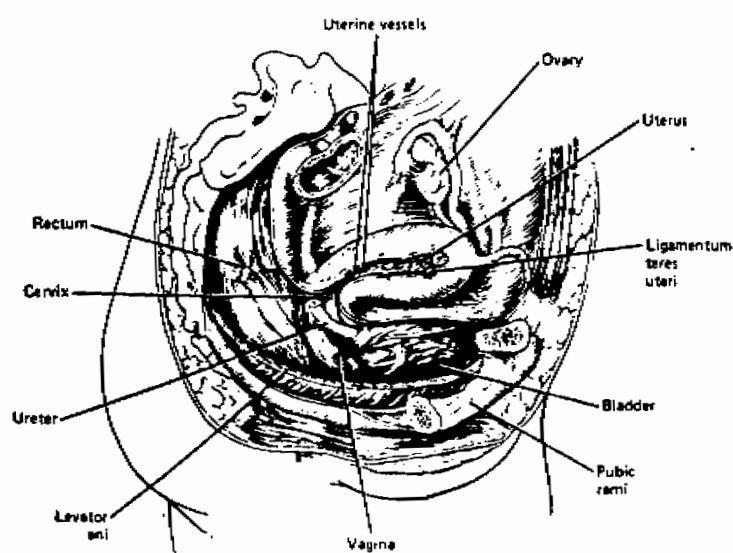**Fig. 3 Anterior view of the uterus**
(Frantz, 1991)

Fig. 4 A

Fig. 4 B

Pelvic viscera (sagittal view)
(Frantz, 1991)