# EVALUATION OF THE DIFFERENT TYPES OF ENDOMETRIAL HYPERPLASIA CYTOPATHOLOGICALLY, HISTOPATHOLOGICALLY AND BY DNA ANALYSIS

Thesis

Submitted for Partial Fullfilment of

M.D. Degree in Obstetrics and Gynaecology

BY

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1993

وَ الْمُوالِمِينَ الْمُعَامَلُنَا إِلَّا مَا عَلَمْتَنَا لِمُعَامِنَا فَ الْمُعَامِنَا فَا كَالْمُعَامِنَا فَا كَالْمُعَامِنَا فَا كَالْمُعَامِنَا فَا كَالْمُعَامِنَا فَا كَالْمُعَامِلُهُمُ الْمُحَاكِمِيمُ الْمُحَاكِمُ الْمُحْمُ الْمُحْمِلُومُ الْمُحْمِلِكُمُ الْمُحَاكِمُ الْمُحْمُ الْمُحْمُ الْمُحْمِلُومُ الْمُحْمِلُومُ الْمُحْمِلُومُ الْمُحْمِلُومُ الْمُحْمِلُ الْمُحْمِلُومُ الْمُحْمُ الْمُعُمُ الْمُحْمُ الْمُعُلِمُ الْمُعُمُ الْمُحْمُ الْمُعُمُ الْمُعُمُ الْمُع

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### **ACKNOWLEDGEMENT**

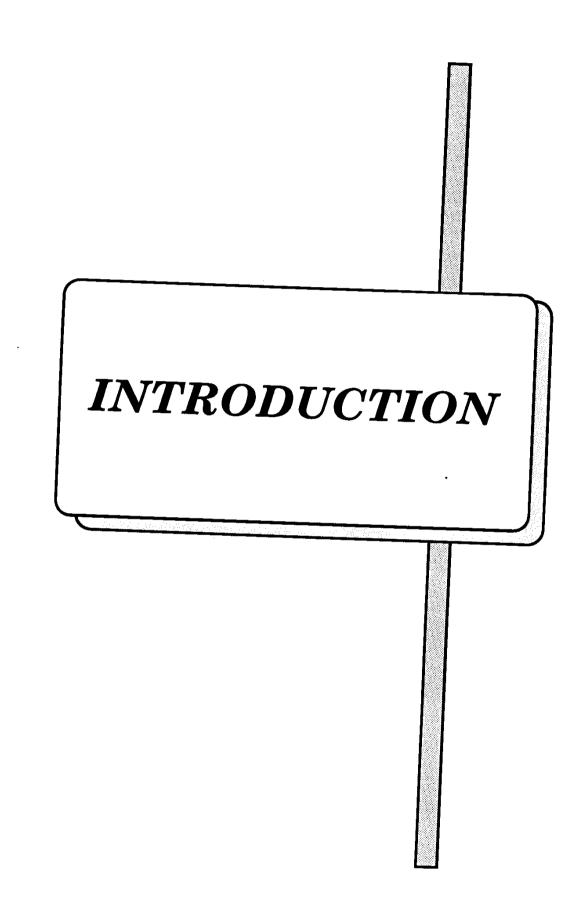
It gives me great pleasure and honour to present my deepest gratitude to **Prof. Dr. Mohamed Ezz El-Din Azzam,** Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for accepting the supervision of my work and for his helpful guidance, directions and encouraging attitude throughout this work. To him, I feel greatly indebted.

My sincere thanks and gratitude are due to **Prof. Dr.**Mohamed Nabegh El-Mahalawy, Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for his honest supervision, constructive criticism and valuable efforts which are highly appreciated.

I would like to express my sincere gratitude and deepest appreciation to **Dr. Ragaa Amin Fawzy**, Lecturer of Pathology, Faculty of Medicine, Ain Shams University, who spared no effort in helping me throughout this work, her valuable advice and efforts are unforgettable.

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## INTRODUCTION

Cancer of the uterine corpus is the commonest female gynaecological cancer seen today, although this has evolved through a reduction in the incidence of cervical cancer, evidence exists to support the premise that the incidence of the disease is increasing (Disaia et al, 1993, Mencaglia et al 1990, Oram, 1990, Iversen 1986).

Any approach to the control of endometrial cancer must include a consideration of the individual at high risk and the endometrial hyperplasia has since long been proposed to be a predecessor to endometrial carcinoma (Lindahl et al 1991) and several investigators have provided well documented evidence that cystic, adenomatous and atypical hyperplasia if left untreated may ultimately progress to invasive cancer. (Gal et al 1983, Gusberg 1947, Kurman et al 1985, Terakawa et al. 1988).

Endometrial hyperplasia includes a varied group of histologic patterns characterized by overgrowth of

glandular and stromal elements together with increased vascularity and lymphocytic infiltration, it may occur in any age group, but it is seen frequently at the two extremes of the reproductive period (Kistner. 1990).

Most endometrial hyperplasia is thought to result from persistent, prolonged unremitting estrogen stimulation of the endometrium. (Creasman, 1991, Norris et al, 1989).

In classifying hyperplasia, to date, no agreement about terminology has been reached. On histologic grounds according to the patterns of growth of endometrial glands, hyperplasia of the endometrium can be classified into three types cystic, adenomatous, and atypical, more than one type may be present (Ramzy, 1990, Kashimura et al, 1988, Tavassoli et al,1978). In 1984, the International Society of Gynecological Pathologist presented a classification that primarily takes into account cytological abnormalities into four categories:

- simple hyperplasia (without cytological atypia).
- complex hyperplasia (without atypia).
- simple atypical hyperplasia (with cytologic atypia),and
- complex atypical hyperplasia (with cytologic atypia) (Clement, 1991, Kurman et al, 1985).

Many methods can be used to evaluate those patients with endometrial hyperplasia, non invsive methods include ultrasound to determine endometrial thickness in asymptomatic postmenopausl women (Sakamoto, 1984) and invasive methods which include many techniques for sampling of the endometrium either for cytological analysis or histological examination. The ideal sampling method for cytological sampling must be acceptable to the patient, of low cost, simple and appropriate for outpatient investigation without the need for hospitalization or general anaesthesia (Creasman et al., 1976, Mencaglia et al 1990).

In general, endometrial cytological samples may be obtained by - washing - aspiration, and - brushing and in the field of endometrial hyperplasia, cytology requir special

skills in its interpretation and cytologic evaluation of endometrial hyperplasia is difficult, although it provides excellent results in the hands of some investigators. (Kashimura et al, 1988, Oram, 1990).

Chromosomal instability leading to structural or numerical aberrations are recognized as an early feature of malignant transformation (Iversen, 1986) and the total chromosomal content of tumour cells can be reflected by quantitative DNA analysis of tumour cells using DNA cytometry (Friedlander et al. 1984). DNA findings would provide information that was not readily available using other criteria e.g about the likely behaviour of tumours or premalignant conditions (Atkin, 1991).

DNA cytometric aneuploidy, corresponding to numerical chromosomal aberrations turned out to represent an internationally accepted marker for malignancy. (Bocking et al, 1989) and this means that the detection of cells with aneuploid sets of chromosomes is equivalent to the detection of neoplastically transformed cells.

TV-based image cytometry allows DNA measurements on selected single cells in restained routine cytologic smears and it is becoming increasingly utilized in routine pathology (Sanchez et al 1990).



# AIM OF THE WORK

The aim of our study is to evaluate the different types of endometrial hyperplasia as regard histopathological and cytopathological diagnosis together with their DNA contents, and correlation between them, with comparison to normal endometrium and malignant endometrial lesions.

# REVIEW OF LITERATURE

### ENDOMETRIAL HYPERPLASIA

Since Thomas Cullen first described endometrial hyperplasia, in 1900 and conceded that benign endometrial lesions may become malignant, an extensive literature of documented cases have validated this concept.

According to Novak 1954, hyperplasia is estrogen induced, a purely pathological term and it seems well established that hyperplasia as seen during the menstrual era is a direct resultant of anovulation and prolonged unopposed estrogen stimulation, with no evidence of corpus luteum formation or resultant progesterone activity. It is described as an abnormality of endometrial growth in which the equilibrium between the proliferative and the desquamative processes is disturbed in favor of the proliferative phase (Koss, 1979).

Hyperplastic growth of the endometrium is somewhat analogous to dysplasia of the cervix, undoubtedly, some of these lesions revert to normal spontaneously or with medical therapy, some persist as hyperplasia, and a few