شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

B1.119

Correlation of Ultrasound Findings and Endometrial Histo-pathology in Pre- and Post- menopausal Bleeding

Thesis

Submitted in Partial Fulfilment for M.S. Degree
(Obstetrics and Gynaecology)

By

Nader Yacoub Girgis Yacoub
M.B., B.Ch.

Supervised by

Prof. Dr. Aly Alian Khalaf Allah
Professor of Obs.& Gyn.
Ain Shams University

Prof. Dr. Aly Farid Mohamed Aly
Professor of Obs.& Gyn.
Ain Shams University

Prof. Dr. Karima Fahmy Sidhom
Professor of Pathology
Ain Shams University

Faculty of Medicine,
Ain Shams University

1995

Acknowledgement

I would like to express my deepest gratitude to Professor Dr. Aly Alian Khalaf Allah, Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for giving me the privilege and honour of working under his supervision and for clearing many obstacles during this work.

All appreciation, utmost respect and indebtedness to Professor Dr. Aly Farid Mohamed Aly, Professor of Obstetrics and Gynaecology, Faculty of Medicine, Ain Shams University, for his constructive supervision, valuable guidance and advice.

Likewise, I am deeply indebted to Professor Dr. Karima Fahmy Sidhom, Professor of Pathology, Faculty of Medicine, Ain Shams University, for her unforgettable help, meticulous supervision and enthusiastic support.

Table of Contents

Introduction & Aim of the Work

INTRODUCTION

Postmenopausal bleeding is widely recognized as an early presenting feature of endometrial carcinoma *(Ross, 1988)*, which is considered the commonest female genital neoplasm *(Mendelson, Bohm-Velez, 1992)*.

Diagnostic curettage has for many years been the method of choice to diagnose endometrial cancer in these patients *(Granberg et al., 1991)*. However, many of these patients are elderly and have additional medical problems such as diabetes mellitus, hypertension and obesity. These conditions and their sequalae of coronary and other arterial diseases make such patients poor anaesthetic risks. In addition, the costs for the vast number of curettages performed are tremendous *(Ross, 1988)*. With this in mind and the knowledge that only approximately 10% of women with postmenopausal bleeding will be diagnosed with endometrial cancer, there is still a need to evaluate simpler, less expensive and safer diagnostic methods that can exclude endometrial pathologic conditions.

With the improvement of soft tissue interfaces afforded by real-time ultrasonographic scanners, it became possible that changes in thickness and texture of the endometrium could be depicted *(Fleischer et al., 1986)*.

Many investigators have studied the possibility to find out a correlation between the ultrasonographic appearance of the endometrium with its histo-anatomic pattern in patients with postmenopausal bleeding, aiming at using this technique diagnostically and as screening method to exclude endometrial pathology in such patients. *Nasri and Coast (1989)* found that a normal

ultrasonographic appearance of the endometrium reliably excludes significant endometrial pathology. *Goldstein et al. (1990)*, using vaginal probe ultrasonography, found that an endometrial thickness of ≤ 5 mm can be used as a cutoff limit to exclude endometrial pathology. *Smith et al. (1991), Degenhardt et al. (1991) and Varner et al. (1991)* have all reported that transvaginal ultrasonography (TVS) seems to be a relatively reliable technique in assessing the endometrium in postmenopausal women with vaginal bleeding. *Botsis et al. (1992), Karlsson et al. (1993) and Goldchmit et al. (1993)* have also concluded that endovaginal ultrasonography is a valuable diagnostic instrument for detecting pathological conditions in the endometrium. Similarly, *Tsuda et al. (1993)* have evaluated the usefulness of transabdominal sonography (TAS) for detection of endometrial abnormalities.

Some investigators have extended their studies to include patients with premenopausal bleeding, hoping that ultrasonography will be valuable for detection of endometrial pathology in these patients. *Klug and Leitner (1989)* have examined 215 pre- and postmenopausal women by TVS and compared the results with histological findings. They concluded that TVS is a simple, non-invasive technique that can improve the possibility of diagnosing endometrial carcinoma at an early stage. *Smith et al. (1991)* had also included 51 premenopausal women in their study and found that there was a good agreement between histology and ultrasound, and suggested that TVS might be used in clinical routine for diagnosing endometrial pathology.

AIM OF THE WORK

This work was designed to study:

1. Uses of ultrasonography in detecting endometrial abnormalities in cases with premenopausal or postmenopausal bleeding.
2. Correlation of ultrasonographic findings and histopathology in cases with premenopausal or postmenopausal bleeding.

Review of Literature

ENDOMETRIUM

There are two main layers of the endometrium which are designated the functionalis and the basalis. The functionalis layer consists of a compactum and spongiosum stratum which thickens and is shed with each menses. The basalis layer, on the other hand, remains intact with each menses, and contains the nutrient vessels which elongate to supply the endometrium when it thickens *(Jones, 1988).*

Under the effect of ovarian hormones, the endometrium shows cyclic changes. The follicular stage of the cycle is stimulated by rising follicle stimulating hormone (FSH) levels and the developing follicles secrete large quantities of oestrogen. Ovulation occurs at approximately mid-cycle in response to a surge of luteinizing hormone (LH), which is provoked by a critical oestrogen level. After expulsion of the ovum, the follicle undergoes conversion into a corpus luteum. Under the influence of LH, the corpus luteum secretes considerable amounts of both oestrogen and progesterone, but in absence of pregnancy, it degenerates after approximately fourteen days, luteolysis being accompanied by a sharp decline in oestrogen and progesterone levels *(Fox, 1991).*

The menstrual cycle may be divided into four phases according to histomorphologic changes in the endometrium *(Jones, 1988).* They are menstrual, postmenstrual, proliferative and secretory.

In the **menstrual phase**, the functionalis layer of the endometrium is shed, leaving only the basal layer which is adjacent to the myometrium *(Fleischer et*

al., 1986). Even before the menstrual flow ceases and the **postmenstrual phase** begins, the epithelium from the persisting basal portions of the uterine glands grows inward over the denuded surface of the endometrium. The endometrium is usually less than 1 to 2 mm in thickness and is lined by a low cuboidal epithelium *(Hendrickson & Kempson, 1980)*. The glands are straight, narrow and collapsed, whereas the stroma is dense and compact. This phase lasts about 4 days *(Jones, 1988)*.

During the **proliferative phase**, which lasts 8 to 9 days after the end of menses, the oestrogen levels are high, and various elements of the functionalis layer proliferate and grow synchronously. There is a growth of the endometrium which thickens to about 2 to 4 mm *(Hendrickson & Kempson., 1980)*. The surface epithelium becomes taller and columnar, as does that of the glands. In the first few days of this phase, the glands within the functionalis are straight and perpendicular to the basalis. As the time of ovulation approaches, these glands elongate and become more tortuous. By the time of ovulation, the endometrium is moderately thick, reaching about 3 to 5 mm *(Fleischer et al., 1986)*.

The **secretory phase** occurs during the next 14 days. Its duration is relatively constant when compared to the proliferative phase. The functionalis layer becomes much thicker, and at the mid-secretory phase may be 5 to 6 mm *(Fleischer et al., 1986)*.

The morphologic changes that identify the *early* secretory phase take 24 to 36 hours to develop. This phase normally lasts for about four days and during this time the glands increase in diameter and become more tortuous.