

**Retrospective Analysis of Hysteroscopic
and Histopathologic Diagnosis in
Egyptian Women Presented with
Abnormal Uterine Bleeding**

Thesis

*Submitted for Partial Fulfillment of Master Degree
Of **Pathology***

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2017



وَقُلْ اَعْمَلُوا فَسَيَرَى اللّٰهُ
عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ

صَلَّى
الْعِظَمِ

سورة التوبة الآية (١٠٥)



Acknowledgment

- ✍ After all my thanks to *Allah* for helping me to complete this work and forever, I would like to express my gratitude to *Prof. Dr. Amira Khalifa Ismail*, Professor of Pathology, Ain shams University for her great support and her encouragement.
- ✍ Very special thanks to *Dr. Magda Mohamed Abdulsalam*, Professor of Pathology, Ain shams University for her valuable time and effort in reviewing this work and her useful advice till the last word of this work.
- ✍ I am also grateful to *Dr. Rola Mohamed Farid*, Assistant Professor of Pathology, Ain shams University for her proper advice and tender care.
- ✍ I can not forget to offer many thanks to my mother, father and my husband for their support until I finish this work.
- ✍ Finally, I would like to thank all staff members in the pathology department, Ain shams University and Early Cancer Detection Unit, Maternity Hospital, for their kind care throughout this work.

✍ *Haema Mohamed*

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List of Abbreviations

APTT	: Activated partial thromboplastin time
AUB	: Abnormal uterine bleeding
BhCG	: Beta human chorionic gonadotropin
CBC	: Complete blood count
CK20	: Cytokine 20
CK7	: Cytokeratin 7
CT	: Computerized tomography
CTNNB1	: Catenin beta
EIN-Endometrial	: Endometrial intra-epithelial neoplasia
intra	
EMZ	: Endometrial myometrial zone
ER	: Estrogen receptor
ESGE	: European Society of Gynecological Endoscopy
FIGO	: International Federation of Gynecology and Obstetrics
FSH	: Follicle stimulating hormone
KRAS-V	: -Kirsten rat sarcoma viral oncogene homolog
LFT	: Liver function test
LH	: Leutinizing hormone
MMPs	: Matrix metallo-proteinases
MRI	: Magnetic resonance imaging---
P16	: Proteinase inhibitor
PAX2	: Paired-Box containing
PI3K-AKT	: Phosphatidylinositol 3-kinase
PIK3 CA	: Phosphatidylinositol-3-kinase, Catalytic, Alpha

List of Abbreviations

	polypeptide
PT	: prothrombin time
PTEN	: Phosphate and tensin homolog
PTT	: Partial thromboplastin time
RIDIA	: AT-rich interactive domain containing protein 1A
S.Ferritin	: Serum ferritin
S.Iron	: Serum iron
SIS	: Saline infusion sonography
TIBC	: Total iron binding capacity
TP53-	: Tumor protein
TSH	: Thyroid stimulating hormone
TVUS	: Trans-vaginal ultrasonography
Von Willebrand factor Ag	: Von Willebrand factor antigen
WHO	: World Health Organization

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Introduction

Hysteroscopy is an endoscopic procedure by which the uterine cavity can be visualized directly (*Clark et al., 2002*).

It helps in evaluation of endometrial cavity that is before could be only reached by dilation and curettage (*brooks and Serden, 1988 and Vallie et al., 1988*).

Hysteroscopy is the best way for exploration of endometrium in cases of abnormal uterine bleeding (*Garuti et al., 2001*), which defined as any bleeding, its amount, duration or frequency is increased for individual patient.

This bleeding is the main cause for more than one third of gynecologic consultations and about two thirds of hysterectomies (*Hillard, 2005*).

In predicting endometrial histopathology, *Garuti et al., 2001* have estimated that the sensitivity of hysteroscopy is 94.2 % and the specificity is 88.8 %. The incidence of focal uterine lesions in patients with abnormal uterine bleeding is about 74%.

Accordingly to that hysteroscopy accompanied by endometrial biopsy is the best way for evolution of causes of this bleeding (*Pal et al., 1997 and Garuti et al., 2001*).

Previous studies clarify the implication of hysteroscopy in diagnosis and management of benign premalignant and malignant uterine bleeding (*Nagele et al., 1996, Gubbini et al., 1998, Serden et al., 2000, Goldstein et al., 2001 and Williams et al., 2002*).

Clark et al., 2002 and Lasmar et al., (2006) have estimated that the diagnosis which depends on hysteroscopy visualization is highly accurate for endometrial cancer but it is moderately accurate for other endometrial diseases however, a combination of hysteroscopy and directed biopsy has estimated to be the gold standard for diagnosis of endometrial diseases (*Bender et al., 2002*).

Aim of work

- To estimate the prevalence of hysteroscopic findings and histopathology diagnosis in patients presented with abnormal uterine bleeding.
- To explore the value of hysteroscopy and directed biopsy in: the diagnosis of causes of abnormal uterine bleeding.

Review of literature

Anatomy and Histology of the Uterus

The uterus is a hollow, pear-shaped, thick-walled muscular organ, suspended by ligaments and is located in the mid-sagittal plane of the pelvis. It measures about 7.5cm in length, 5cm in breadth at its upper part, 2.5cm in thickness and weighs 30-40gm (*Kadasne, 2009*).

The uterus is divided into the body and the cervix. The part of the body which lies superior to a line passing between the points of insertion of uterine tubes is called the fundus. The two lateral parts associated with fallopian tubes are called the cornua. The part connecting the body and the cervix is called the isthmus (*Rosai, 2011*).

The body of the uterus is related anteriorly to uterovesical pouch and the superior surface of the urinary bladder. It is related posteriorly to the rectouterine pouch (pouch of Douglas) and ileum coils or sigmoid colon inside it. The lateral aspects of the uterus are related to the broad ligaments, uterine artery and veins (*Snell, 2012*).

The uterus receives its blood supply from the uterine artery which is a branch from internal iliac artery, and

ovarian artery which is branch from the abdominal aorta. The venous drainage is through the uterine and ovarian veins which terminates in internal iliac vein. Lymphatic drainage of the uterus ends in internal iliac and para-aortic lymph nodes. The nerve supply of the uterus is via sympathetic and parasympathetic nerves of the inferior hypogastric plexuses (**Darke, 2008**).

Histologically, the uterine wall consists of three layers; perimetrium, myometrium, and endometrium.

Perimetrium is a serosal layer of connective tissue, covers the uterus and adheres to most of the body and fundus.

Myometrium consists of smooth muscle bundles separated by connective tissue in which blood vessels, nerves, and lymphatics are present. The muscle bundles are arranged in three poorly defined layers. The external layer fibers are arranged longitudinally parallel to long axis of the uterus. The internal layer bundles are arranged longitudinally and in circular manner. In the middle layer, the bundles are arrayed in different directions. At uterine contraction, all muscle layers act together to expel the contents of the uterine cavity (**Vasudeva and Mishra, 2011**).

Endometrium is formed of mucosa and stroma. The mucosa is a simple columnar epithelium, and the stroma is a highly cellular connective tissue. The epithelium is of two cell types; ciliated and secretory cells. The differentiation between these two types is by the presence of basal bodies in the ciliated cell type (**Ross and Pawlina, 2010**). The stroma is formed of type iii collagen fibers, and fibroblasts. It contains tubular uterine glands that extends and divides near the myometrium (**Mescher, 2010**).

Functionally, the endometrium is divided in to two zones or layers; functional layer, and basal layer.

The functional layer is the outer layer, which sloughed off during menstruation. It is subdivided into the compactum and the spongiosum toward the basal layer. The basal layer is the inner layer adjacent to the myometrium. It is not sloughed off during menstruation and it act as regenerator for sloughed functional layer (**Rosai, 2011**).

The endometrium undergoes cyclic changes and is divided into three phases; proliferative, secretory, and menstrual phase.