Role of diagnostic hysteroscopy and histopathology in evaluation of abnormal uterine bleeding

Thesis

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بسم الله الرحمن الرحيم

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

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Shaymaa Ismael Hussein Al-Ani

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List of Abbreviations

Abbr.	Full-term
ACOG	: American college for Obstetricians and Gynecologists
AUB	: Abnormal uterine bleeding
BMI	: Body mass index
CC	: Correct classification rate
CM	: Centimeters
CO2	: Carbon dioxide
CRF	: Case report form
DH	: Diagnostic hysteroscopy
DUB	: Dysfunctional uterine bleeding
E	: Eosin
ECP	: Endocervical polyp
E.g.	: Example
EH	: Endometrial hyperplasia
EMC	: Endometrial carcinoma.
EMH	: Endometrial hyperplasia
EMP	: Endometrial polyp
ESGE	: European Society of Gastrointestinal Endoscopy
FIGO	: International Federation of Gynecology and Obstetrics
FN	: False negative
FNR	: False negative rate
FNR	: False Negative Rate
FP	: False positive
FPR	: False positive rate
FPR	: False Positive Rate
H	: Haematoxylin
HP	: Histopathology
HRT	: Humen replacement therapy
HSP	: Hysterosalpingography
IU	: International unite
IUD	: Intrauterine device
LH	: Luteinizing hormone

LR : Likelihood Ratio
MC : Misclassification rate
Mg : Milli-gram
MIU : Milli-international unite
Ml : Milliliter
Mm : Millimeter
MMHG : Millimeter mercury
MMMT : Malignant mixed mesodermal tumor
MMPs : Matrix metalloproteinases
NPV : Negative predictive value
NPV : Negative Predictive Value
NSAIDs : Non-steroidal anti-inflammatory agents
OH : Office Hysteroscopy
PCOS : Poly cystic ovary syndrome
PPV : Positive Predictive Value
SD : Standard deviation
Se : Sensitivity
SMM : Submucous myoma
SMM : Submucous myoma
SPSS : Statistical Package for the Social Science
Sp : Specificity
TP : True positive
TURP : Trans-urethral resection of prostate
TN : True negative
SD : Standard deviation

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Abstract

Background: Abnormal uterine bleeding is a bleeding from uterine compose that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 6 months. Evaluation of women with abnormal uterine bleeding should be through history taking, systemic and local examination, laboratory investigations, imaging and different diagnostic procedures including hysteroscopy. **Aim of the Work:** to assess the accuracy of hysteroscopy in the diagnosis of the cause of bleeding in women with Abnormal Uterine Bleeding. **Patients and Methods:** This prospective observational study was conducted on 114 patients attended the Early Cancer Detection Unit, Faculty of Medicine, Ain Shams University between July 2017 and April 2018, to assess the role of diagnostic hysteroscopy and histopathology in evaluation of abnormal uterine bleeding. **Results:** hysteroscopy had a sensitivity of 91.9%, specificity of 86.5%, positive predictive value of 93.2%, and negative predictive value of 84.2% and diagnostic accuracy of 90.1% for diagnosing etiology of abnormal uterine bleeding. **Conclusion:** Hysteroscopy has a definitive role in evaluating patients with abnormal uterine bleeding especially with patient with thick endometrium and in any age group. Hysteroscopy is a safe and reliable procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity, positive predictive value and negative predictive value and the results of hysteroscopy are immediately available. Hysteroscopy and histopathology complement each other in evaluating patients with abnormal uterine bleeding for accurate diagnosis and further treatment.

Key words: hysteroscopy, histopathology, uterine bleeding

Introduction

Abnormal uterine bleeding is a bleeding from uterine compose that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 6 months. It may be excessively heavy or light and may be prolonged, frequent, or random ***(Khrouf and Terras, 2014)***.

Abnormal vaginal bleeding is a common complaint in primary care. The prevalence of some type of abnormal bleeding is up to 30% among women of reproductive age ***(Singh et al., 2013).***

Over 18% of all gynecology outpatient visits in the United States are for menorrhagia alone ***(Sharma and Yadav, 2013).***

Because most cases are associated with anovulatory menstrual cycles, adolescents and perimenopausal women are particularly vulnerable. About 20% of affected individuals are in the adolescent age group, and 50% of affected individuals are aged 40-50 years ***(Rezk et al., 2015)***.

In 2011, the International Federation of Gynecology and Obstetrics (FIGO) published a new classification system and the American College of Obstetrician-Gynecologists has also endorsed this new classification system ***(ACOG practice Bulletine, 2012).***

This system divides the etiology of abnormal uterine bleeding into structural and non-structural causes and follows the acronym PALMCOEIN (**Table 1**).

New nomenclature uses the acronym of AUB (abnormal uterine bleeding) with the initial from the classification system as a description of the disorder (eg, abnormal uterine bleeding caused by ovulatory disorders is referred to as AUB-O). Differential diagnosis will vary based on symptomatology as well as age.

Pregnancy is a possible cause of any type of abnormal bleeding in any woman of reproductive age (ie, after menarche and before menopause). Many systemic illnesses and medications can affect menstrual bleeding and should be included in a broad differential diagnosis of a presenting woman ***(Mukhopadhyay and Ashis, 2014).***

Table (1): Common Causes of Abnormal Vaginal Bleeding

PALM (structural causes)
Polyp Endometrial polyps Cervical polyps **A**denomyosis **L**eiomyoma Submucosal fibroids Other leiomyomas **M**alignancy and hyperplasia Endometrial hyperplasia Hyperplasia with atypia Endometrial carcinoma
COEIN (non-structural causes)
Coagulopathy Liver failure Anticoagulant use Inherited bleeding disorders (von Villebrand's disease most common) **O**vulatory dysfunction Physiologic (adolescence, perimenopause, lactation) Polycystic ovary syndrome Female athlete triad Hypothalamic dysfunction (eg, eating disorder, stress) Thyroid disease Hyperprolactinemia Pituitary disorder Primary ovarian insufficiency Iatrogenic (eg, from radiation or chemotherapy) **E**ndometrial Hormonal imbalance Endometrial atrophy **I**atrogenic Endogenous hormones (contraception, HRT, IUD) Anticoagulant use **N**ot yet classified Vaginitis Cervicitis

Until recent times, usual method of evaluating this symptom was dilatation and curettage. But this detects the cause in less than 50% of the cases. Hysteroscopy offers a valuable extension of the gynecologist's armamentarium. It can improve the diagnostic accuracy and can permit better treatment of uterine diseases. After hysteroscopy, the elective surgery of the patient can be planned better **(Shruti and Page. 2007)**.

Hysteroscopy allows direct visualization of the endometrial cavity and importantly, directed endometrial sampling of any suspicious areas **(Pamnani and Modi. 2014).**

Use of hysteroscopy in abnormal uterine bleeding is almost replacing blind curettage, as it "sees" and "decides" the cause. This is because the uterine cavity can be observed and the area in question can be curetted. In fact, it is an eye in the uterus ***(Phalak et al., 2015).***

The aims and objectives of this study is to study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding and to correlate hysteroscopic findings with histopathologic findings.

Aim of the Work

This study aim to assess the accuracy of hysteroscopy in the diagnosis of the cause of bleeding in women with Abnormal Uterine Bleeding.