COLOUR DOPPLER ULTRASOUND IN EVALUATION OF UTERINE VASCULATURE IN PATIENTS WITH ABNORMAL /IRREGULER UTERINE BLEEDING

A Protocol of Thesis Submitted for partial fulfillment
Of master degree in obstetrics and Gynaecology

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INTRODUCTION

Abnormal uterine bleeding is common gynaecological problem. It represents a major cause for patients to attend gynaecology clinics. It is among the common indications of hysterectomy in gynaecologic practice ***(Munro, 2001)***.

Uterine vascular lesions are a cause of uterine bleeding. Potentially lifethreatening lesions should be suspected in woman of reproductive age with unexplained vaginal bleeding and in postmenopausal woman in whom anechoic structures are detected at ultrasonography ***(Beller et al., 1998)***.

A wide spectrum of vascular abnormalities can affect uterine vasculature. These abnormalities may be categorized as those involving the uterus and those involving placenta (eg, chorioangioma) ***(Van Hook et al., 1994)***.

Recurrent vaginal bleeding (menometrorrhagia), which is resistant to treatment, is the most important clinical manifestation of these vascular disorders of the uterus and placenta. These lesions cause habitual or spontaneous miscarriage in pregnant women and may even be life-threatening. Early diagnosis and treatment of these lesions is crucial because of the potentially fatal outcomes ***(Geary, 1991)***.

Colour Doppler Ultrasound is useful in the early diagnosis and treatment of these potentially clinically significant disorders of the uterus and placenta. Response to treatment can also be assessed by this technique. It is valuable in detection and characterization of many uterine vascular lesions,including arterio-venous malformation (AVM) (especially arterio-venous fistulas), true aneurysms, pseudoaneurysms and chorioangioma of placenta. Arterio-venous fistulas demonstrate a mosaic pattern representing turbulent flow ***(Pynar, et al2002)***.

Uterine vascular malformation can be divided into three different groups. A first group consists of true uterine AVMs. Nearly all these patients present with heavy or even life-threatening vaginal bleeding and Colour Doppler ultrasonography can demonstrate typical sings of vascular malformation, i.e. areas of strong hypervascularity and strong turbulence in comparison with the normal surrounding myometrial perfusion ***(Sugiyama et al., 1996)***.

A second group of patients present with profound vaginal bleeding and on colour Doppler ultrasound they exhibit characteristics of a vascular malformation, but they lack a typical early venous contrast filling at angiography. Such cases are described as uterine non arterio-venous malformations (non-AVM), and they warrant embolization only when there is heavy vaginal bleeding ***(Chow et al., 1995 and Timmerman, et al., 2000)***.

A third group of patients has mild to moderate vaginal bleeding and exhibit ultrasound features of vascular malformation. But because no angiography is performed it is not clear whether these patients have true AVMs or non-AVMs. Therefore, in these cases the general descriptive term uterine vascular malformation is used ***(Jain et al., 1991 and Timmerman, et al., 2000).***

AIM OF THE WORK

- Visualization of uterine vasculature, normal and abnormal, in different Gynaecological disorders.
-Tailoring score diagnostic and prognostic for the management of non pathogenic uterine bleeding.

PATIENTS AND METHODS

This study will by conducted at the department of obstetric and Gynaecology, Ain Shams University Hospital on 40 patient with abnormal / irregular uterine bleeding.

All patients will be subjected to:

1- History:

Detailed history form each patient with special reference to:
a- Present history: amount, duration of bleeding and treatmen.
b- Past history (HTN).

2- General examination: Body weight, Body mass index.

3- Vaginal examination:

-Inspection: to visualize the presence of vascular lesion.
-Cusco speculum examination: to exclude any cervical lesion.
-Bimanual examination: to asses the uterine size, shape and mobility.

4- Transvaginal ultrasound.

5- Color Doppler ultrasound on uterine vasculature.

6- After hysterectomy:

Injection of radio-opaque dye into uterine artery followed by plain X-ray to visualize vasculature.

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بسم الله الرحمن الرحيم

" قَالُوْا سُبْحَانَكَ لا عِلْمَ لَنَا إِلا
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ العَلِيمُ
الحَكِيمُ "

صدق الله العظيم

(البقرة – الآية ٣٢)

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Marwa Saber Said

List of Contents

List of Figures

List of Graphs

List of Tables

List of Abbreviations

ACOG	American Collegue Of Obstetrics and Gynecology
APD	Antroposterior diameter
AVM	arteriovenous malformations
BMI	Body Mass Index
CA-125	Carcinogenic antigen
CBC	Complete Blood Count
CT	computed tomography
D&C	Dilatation & Curretage
DUB	Dysfunctional Uterine Bleeding
ebaf	endometrial bleeding associated factor
FGF	fibroblast growth factor
HTN	Hypertension
IUCD	Intra Uterine Contraceptive Device
IUD	intrauterine device
LD	longitudinal diameter
LH	luteinizing hormone
MMPs	matrix metalloproteinases
MRI	Magnetic Resonance Imaging
PG	Prostaglandin
PI	Pulsetality Index
PID	Pelvic Inflammatory Disease
POP	Progesterone Only Pills
RI	resistance index
S/D	systolic/diastolic
TD	transverse diameter
TVCD	Transvaginal color Doppler
TVS	transvaginal sonography
US	ultrasonography
VEGF	vascular endothelial growth factor