ORIGINAL ARTICLE

Radiological Evaluation of Post Menopausal Bleeding

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ABSTRACT

Objective: To describe a radiological approach for evaluation of postmenopausal bleeding as an alternate to Diagnostic D&C.

Materials and Methods: First 100 patients referred from the Dept of Obstetrics & Gynecology with postmenopausal bleeding for ultrasound evaluation and in some cases to confirm the findings of per vaginum examination. These patients later underwent Diagnostic D&C and the results were compared.

Results: The results of our study showed that findings in patients with postmenopausal bleeding evaluated with USG (both grey scale and color Doppler per abdomen and per vaginal) were equivocal to Diagnostic D&C.

Conclusion: Study concludes that USG is a non-invasive and safe alternate approach to invasive Diagnostic D&C.

Key words: Post menopausal bleeding, Ultrasound, dilatation and curettage.

INTRODUCTION

Post menopausal bleeding (PMB) is a form of abnormal uterine bleeding defined as vaginal bleeding after a period of amenorrhoea of 6 months or more in the perimenopausal age group. It is a common problem affecting women in the age group of 50-60years (average 55 years).[1] Frequently encountered causes of PMB are usually benign but endometrial carcinoma can be the most serious potential underlying cause.

Thorough history and clinical evaluation will guide the judicious use of imaging modalities. Although the differential diagnosis of post menopausal bleeding is wide but mainly includes atrophic endometrium, endometrial hyperplasia, endometrial polyp, uterine leiomyoma and endometrial carcinoma/cervical cancer.[2]

In this article, we present a detailed analysis of differential diagnosis of the conditions causing postmenopausal bleeding with the aim to establish that evaluating such patients by USG(including trans abdominal and trans vaginal on grey scale and color Doppler)can easily replace Diagnostic D&C. It is highly appropriate to use USG considering economy, patient comfort level, invasiveness and sensitivity as key factors in successfully evaluating patients e.g. Endometrial carcinoma can be perceived as 'curable cancer', given that the pathology is met with prompt detection and intervention.[3]

During menopause, the endometrium primarily consists of a thin basalis layer. Measurement of the endometrial echo complex consists of measuring both the opposing basal layers and endometrial cavity. Atrophic changes occurring at menopause demonstrate an endometrial echo complex of less than 5mm thick (as the glands and blood vessels have outlived due to senile degeneration)and is the most common cause of post menopausal bleeding.[2] Normally it is 5-7mm thick but may measure up to 8-10mm in patients on hormone replacement therapy.[2,4.]

Endometrial hyperplasia is the result of unopposed estrogens on the endometrium as there is hormone imbalance in this age. At USG, endometrial hyperplasia appears as echogenic thickening which represents endometrium on opposed surfaces of the uterine walls along with central endometrial canal (with or without cystic degeneration). This finding must be differentiated from RPOC's or blood clots on the basis of the history and Doppler evaluation (RPOC's will have blood flow). (Fig 1)

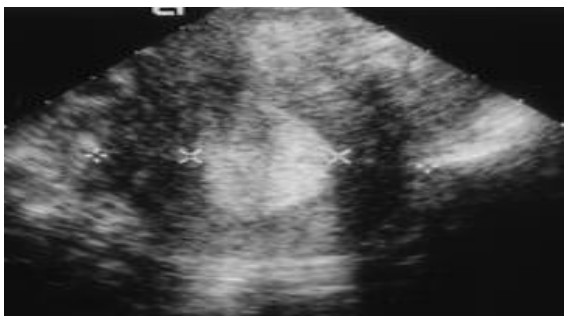

Fig 1: Endometrial Hyperplasia

Endometrial polyp may be identified as echogenic pear shaped soft tissue mass with or without a stalk (in case of stalk a feeding vessel displaying rich blood flow on Color Doppler and sometimes having fluid all around it may be identified). They may become malignant in some patients.[3] (Fig 2a and 2b)

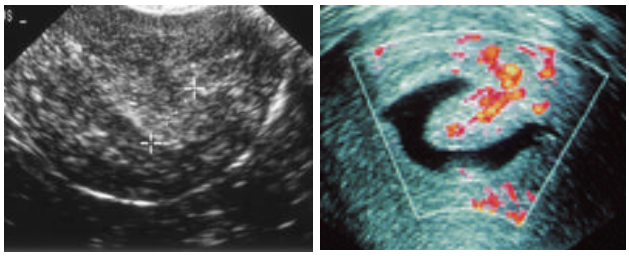

Fig 2a: TVS Fig 2b: Doppler USG

Endometrial carcinoma is most commonly prevalent in the postmenopausal age group over 50 years. Patient presents in OPD with postmenopausal bleeding alone or combined with serosanginous discharge.[2] At USG, mass like thickening of the endometrium is present, which may have a heterogeneous echo texture, which needs to be differentiated from necrotic fibroid. Postmenopausal endometrium thicker than 5-6 mm should always be evaluated with a suspicion of malignancy. [5](Fig 3 and Fig 4)

Fig 3: Endometrial Carcinoma

Fig 4: Submucosal Fibroid

MATERIALS & METHODS

Setting: The study was carried out at the Department of Diagnostic Radiology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore in collaboration with the Department of Ob & Gy for a period of six months from March 2015 to Aug 2015

Research Design was qualitative, descriptive and cross sectional.

Inclusion criteria: All patients presenting with abnormal uterine bleeding after 6 months of complete cessation of periods.

Exclusion criteria: Patients having coagulation or bleeding disorders or have undergone pelvic surgery for some other disorder.

Sampling Technique: Random/ Non Probability convenient sampling.

Data Collection: 123 patients were referred from the Dept of Ob & Gy during this period with postmenopausal bleeding for ultrasound .USG was done on APLIO using both convex low frequency (per abdomen) and transvaginal (per vaginum)high frequency end firing probes. Both grey scale and color Doppler options were used. Transabdominal ultrasound was not sufficient to assess the uterus as it has less penetration, hence was always complemented by a TVS. The uterus and adnexae were evaluated in longitudinal and transverse dimensions and measurements were taken. Length was taken from fundus to ectocervix. The endometrium was evaluated in both longitudinal and transverse directions (on transabdominal and TVS scans during the same visit) .The thickest measurement of the endometrium in the midline was reported. Any focal abnormalities/bumps/abnormal blood flow on colour doppler were noted and their appearance and location described. Both resistive and pulsatility index was calculated. Fluid within the endometrium was not included in the measurement but described. In cases of endometrial fluid, endometrial thickness (ET) was the sum of the thickness of the 2 endometrial layers. Non-visualized endometrium should not be considered as a normal endometrium and should be documented.

Data Interpretation: SPSS version 18 was used to enter the data and simple percentages were

calculated. These were then tabulated and compared with the work done around the world.

RESULTS

One hundred twenty-three women with PMB were enrolled in our study. 25 patients did not meet the inclusion criteria and were excluded. The remaining 98 patients ranged in age from 41 to 85 years (mean age 56.6 years).The USG results in the 98 patients were as follows: normal in 29 (30%) patients, polyps in 46 (47%), leiomyoma in 11 (11%), cancer in four (4%), and hyperplasia in eight (8%).In three of the four patients with endometrial cancer, an accurate diagnosis was made with transvaginal USG. The fourth patient with endometrial cancer, who had positive endometrial biopsy findings, had a small focus of carcinoma. The most common USG finding associated with cancer was a thickened endometrium with rich blood flow and having heterogeneous echotexture due to necrotic areas. The polyps appeared as polypoid masses and those with a stalk, appeared with a single feeding vessel at color Doppler USG. At USG, the leiomyoma appeared as broad-based sub mucosal mass and at color Doppler USG, they appeared to have diffuse hypervascularity. Endometrial Hyperplasia appeared as diffuse endometrial thickening with endometrial cysts.

DISCUSSION

Postmenopausal vaginal bleeding can be the most nagging complaint of growing old and presenting symptom of endometrial cancer, the most common gynecologic malignancy. In older literature the usual reason for PMB was endometrial atrophy.[6] More recently, however, the results of several studies[7] including ours, have indicated that anatomic causes of PMB, such as polyps, leiomyoma, and hyperplasia, are more common than was previously thought. Grimes[8] study showed that D&C was inadequate for the diagnosis of benign disorders, although it is excellent for enabling the detection of endometrial carcinoma.

The most important aspect of this study was that USG was a useful tool to detect endometrial /cervical carcinoma. Upto 50% of patients who are prescribed hormonal replacement therapy show poor compliance for many reasons , but an important one is the fear of uterine cancer [9].With USG, a patient can be examined, and should an anatomic reason for the PMB—for example, a polyp—be found, it can be removed. In cases of other benign causes for the bleeding, such as leiomyoma, the patient can be sufficiently reassured that chances of malignant transformation are minimum .[10]

Although the reference standard in the literature is that endometrial thickness of 5 mm or less generally excludes carcinoma and other endometrial abnormalities, 22% of our study patients with polyps or leiomyoma had an endometrial thickness that was 5 mm or less. Timmerman et al [11]in a randomized crossover trial, found that USG had a higher accuracy rate and was better accepted by patients. In addition, the incremental professional cost for D&C is at least twice that for USG .[12]In our practice all patients referred for PMB, we routinely perform transabdominal USG coupled with transvaginal USG examination followed by Color Doppler and thus eliminate the need for a return visit.

Endometrial blood clot sometimes may be mistaken for a polyp. The more difficult differential diagnoses were those of pedunculated leiomyoma that mimicked polyps and flattened adherent polyps that mimicked focal hyperplasia or fibroids. Using the color Doppler criteria of a single central vessel for a polyp and generalized hypervascularity for a leiomyoma helped in establishing these sometimes difficult differential diagnoses.[13.]

CONCLUSION

Postmenopausal bleeding is a common problem in the 50-60 yrs age group. Ultrasound is a non invasive method for assessment of the endometrium and rule out the possible differential diagnosis thus avoiding unnecessary intervention. This suggests that USG should become the routine rather than diagnostic D&C.

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