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SIGNIFICANCE OF USG AS A DIAGNOSTIC AID IN HEAVY MENSTRUAL BLEEDING -A PROSPECTIVE STUDY

Obstetrics & Gynaecology

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ABSTRACT

Heavy menstrual bleeding is common gynecological complain observed in most of the female in their reproductive age group.Ultrasound usually used as a first line investigation in diagnosis of HMB. It is a primary diagnostic tool in evaluating women with abnormal vaginal bleeding, being able to demonstrate anatomic findings not frequently detected in pelvic examination Ultrasonography has markedly increased the accuracy of clinical diagnosis and it emerges as one stop diagnostic tool for diagnosis of heavy menstrual bleeding and help in proper management of patient.

Aims and objective:

1.To study the role of ultrasound in diagnosis of heavy menstrual bleeding in term of accuracy and reliability.

2.To decrease the undue risk associated with invasive procedure

Method and materials : The present study was conducted at Mahila hospital SMS Medical college ,50 non pregnant patient in their reproductive age with complain of heavy menstrual bleeding were examined and evaluated during the period of april 2021 to april 2022 by proper history, clinical examination and ultrasound. Result were observed and compared with finding of endometrial biopsy and histopathology report.Standard treatment methodology was listed in each case. **Result:** In our study 44%patients presented with heavy menses, 40% patients with irregular menses, 20% patients experienced pain in lower abdomen and 10% of patients presented with bleeding PV with passage of clots and 64% patients were anemic. In ultrasound almost 60 % of patients with complaint of heavy menstrual bleeding had finding of bulky uterus, among them 46% patients had fibroid, adenomayotic changes seen in 20% patients . 28% patients had >5mm thick endometrium, 20% patients had 5-10mm thick endometrium and 24% patients had>10mm thick endometrium, So endometrial biopsy and pap smear was perfomed in these patients and managed accordingly. **Conclusion:** Ultrasound is a non invasive, safer, rapid, highly acceptable,easily available, affordable tool with high accuracy of diagnosis in patients with heavy menstrual bleeding and decreases the undue risk associated with invasive procedure.

KEYWORDS

Heavy menstrual bleeding, Ultrasound, Fibroid. Endometrial Biopsy

INTRODUCTION

Heavy Menstrual Bleedingis defined as heavy cyclical menstrual blood loss over several consecutive menstrual cycles in a woman of reproductive years, or more objectively, a total menstrual blood loss of more than 80 ml per menstruation[1].

Heavy menstrual bleeding, is an important cause of ill health in women. It is estimated that 9 to 30 percent of women of reproductive age suffer from heavy menstrual bleeding, the prevalence increasing with age, and peaking just prior to menopause[2]. It has been found that once referred to a gynaecologist, 60% of women with menorrhagia will have a hysterectomy within five years, accounting for up to 75 percent of all hysterectomies performed worldwide[3].

There is poor correlation between a woman's perception of heavy menstrual bleeding and menstrual blood loss of more than or equal to 80 ml/cycle, and between the amount of sanitary pads used and the complaint of heavy bleeding[1,4].

Ultrasonography is a primary diagnostic tool in evaluating women with abnormal vaginal bleeding, being able to demonstrate anatomic findings not frequently detected in pelvic examination.

These include small ovarian cysts, leiomyoma, endometrial hyperplasia as well as evaluation of the endometrium with respect to thickness, which would indirectly reflect the endometrial histology, and hormonal status of patients[5]. Focal pathology such as fibroids and polyps as well as extrauterine pathology can be accurately diagnosed.

Transvaginal ultrasonography (TVS) is an accurate test for diagnosing endometrial hyperplasia when the endometrial thickness is 12 mm or more . In women more than 40 years old and who failed medical treatment, 50% have an abnormal TVS[6]. This study aimed to evaluate the role of ultrasound in diagnosis of heavy menstrual bleeding in term of accuracy and reliability and to decrease the undue risk associated with invasive procedure.

MATERIALAND METHODS

This was a prospective observational study conducted at Mahila Hospital SMS Medical college,Jaipur,50 non pregnant patient in their reproductive age with complain of menorrhagia were examined and evaluated during the period of april 2021 to april 2022 by proper history, clinical examination and ultrasound.

Exclusion Criteria :

Women with pelvic organ prolapse, with any cervical or uterine malignancy, with pregnancy, on medications like steroids, neuroleptics, anticoagulants, and cytotoxic agents are excluded from study.

Inclusion Criteria :

All reproductive women with complain of heavy menstrual bleeding.

Result was observed and compared with finding of endometrial biopsy and histopathology report.Standard treatment methodology was listed in each case.The quantitative data was represented as their mean±standard deviation (SD). Categorical and nominal data were expressed in percentage.

After an informed consent of each participant, the following data were collected: age, parity, obstetric history, detailed menstrual history (age of menarche and menopause, bleeding pattern, severity, and pain associated with bleeding), associated co-morbidities- obesity, hypertension, diabetes, hypo/hyperthyroidism, past history (medical history focussing on risk factors of endometrial cancer, coagulopathies, and surgical history), and detailed drug history.

OBSERVATION &RESULT

Table No -1

Age(in Years)	No. of patients	Percentage (%)
26-30	2	4
31-35	7	14
36-40	10	20
41-45	14	28
46-50	10	20
51-55	5	10
61-63	2	4
Total	50	100%

Table 1 shows majority of patient 82% belonged to 31-50 years, reflect heavy menstrual bleeding mainly problem in reproductive age group till age of menopause .

Table 2: Distribution of cases according to Haemoglobin level

Haemoglobin level (gm %)	No. of patients	Percentage (%)
7-9	11	22
9-11	21	42
11-13	17	34
13-15	1	2
Total	50	100%

Table 2 shows majority 42% patients had haemoglobin level 9-11 gm% followed by 34% patients with 11-13 gm% and 22% had haemoglobin level 7-9gm%.

Table 3: Distribution of cases according to Duration of bleeding in menses

Duration of bleeding in menses (days)	No. of patients	Percentage (%)
4-6	12	24
7-9	22	44
10-12	12	24
>12	4	8
Total	50	100%

Table 3shows that majority 44% patients hadduration of bleeding are 7-9 days followed by only 8% had duration of bleeding are more than 12 days.

Table 4: Distribution of cases according to presenting complaint

Presenting complaint	No.of patients	Percentage (%)
Pain abdomen during menses	6	20
Heavy menses	22	44
Irregular menses	20	40
Bleeding PV with passing clot	0	10
Total	50	100

Table 4 shows that 44% patients had heavy menses followed by 40% patients with irregular menses and 10% patients complained abdominal pain during menses and only few patients 10% came with complain of passage of clots during menses.

Table 5: Distribution of cases according to Finding in USG

Finding in USG	No. of patients	Percentage (%)
Fibroid	23	46
Adenomayotic changes	10	20
Nebothian cyst	10	20
Chronic cirvicitis	5	10
Endometrial hyperplasia	2	4
Total	50	100

Table 5 shows that in USG fibroid was diagnosed in 46% patients followed by 20% of patients had adenomayotic changes ,20% patients hadnebothian cyst. Endometrial hyperplasia was seen in 4% patients.

Table 6: Distribution of cases according to endometrial thickness

Relation to menopause		No. Of Patients	Percentage (%)
Pre menopausal	<5 mm	20	40
	5-10 mm	10	20
	>10 mm	16	32
Postmenopausal	>5 mm	4	8
	2-5 mm	0	0
	<2 mm	0	0
Total		50	100

Table 6 shows that 40% patients in pre-menopause had endometrial thickness <5mm followed by 32% patients with >10mm. In post-menopausal 8% patients had >5mm endometrial thickness.

Table 7: Distribution of cases according to endometrial biopsy report

Endometrial biopsy report	No. of patients (n=50)	Percentage 100%
1.Proliferative Endometrium	15	30
2.Secretory Endometrium	12	24
3.Atypical hyperplasia	4	08
4.Disordered proliferative endothelium	10	20
5.Inadequate biopsy	2	4
6.Hyperplasia Without atypia	7	14

Table 7 shows in endometrial biopsy report 30% had proliferative endometrium,24% had secretory endometrium,08% had atypical hyperplasia,20% had disordered proliferative endometrium, 14% had hyperplasia without atypia and 4% had inadequate biopsy .These cases were managed according to their biopsy report.

DISCUSSION

Ultrasound is the imaging modality of first choice in evaluating the patients with complain of HMB. Transabdominal and transvaginal ultrasound are both appropriate imaging modalities, though transvaginal ultrasound usually gives more detailed information. Endometrial thickness varies substantially throughout the menstrual cycle and normal endometrial thickness ranges from 4mm in the follicular phase up to 16mm in the late luteal phase. Although often difficult from a practical perspective, endometrial thickness is ideally measured in the follicular phase, when a finding of an endometrial thickness over 10mm is suggestive of pathology. It is also useful to time ultrasound assessment if further scans are planned for comparative purposes. The finding of an endometrial thickness endometrium greater than 15mm is associated with a higher chance of endometrial pathology[7], as is the finding ofinhomogeneous echoes and vascular flow within the endometrium.

In our study 92% patients are between 31-55 years. A similar study by Ait-Allah A S et al[8] found that the menorrhagia group had a highly statistically significant older age , which is agreed with the finding of Tokyol et al. [9] and Shapley et al. [10]

We found that 40% patients in pre-menopause had endometrial thickness <5mm followed by 32% patients with >10mm. In post-menopausal 8% patients had >5mm endometrial thickness.Ait-Allah A S et al[8] found thatthe endometrial thickness was significantly higher in cases of menorrhagia which attributed to associated hormonal disturbance leading to increased thickness and vascularity. This is in accordance with the finding of Aleem et al.[11] who found that endometrial thickness had better sensitivity and specificity to discriminate between benign and malignant or normal and pathologic endometrium.

In our study majority of women 44% women presented with complain of heavy menses followed by 40% women presented with irregular menses which was similar to study done by Rathi J et al[12]He found that most common presenting complaint was heavy menstrual bleeding (74%), followed by scantybleeding (13.5%), increased frequency (8.5%) of bleeding, intermenstrual bleeding in 3.5 % cases.Panda et al[13] series had 60% cases of HMB followed by Irregular and heavy menstrual bleeding . Goyal et al[14] also found menorrhagia (heavy menstrual bleeding) as one of the most common presenting symptoms in the study population (58%), followed by irregular heavy menstrual bleeding.

We found that in ultrasound fibroid was diagnosed in 46% patients , 20% of adenomayotic changes ,20% patients with nebothian cyst. Endometrial hyperplasia was seen in 4% patients similar to study done by Rathi J et al[12]found that most common diagnosis was leiomyoma (29.5%) and adenomyosis (19.5%), while endometrial hyperplasia, polyp, and malignancy (two cases were of endometrial cancer and three were of cervical cancer) were reported in 3.5%, 8% and 5.5% cases respectively.Ait-Allah A S et al[8] found Fibroidin 8 cases (16% of cases with menorrhagia) which in agreement with the finding of Stovall[15], who found that fibroid was found in about 20% of cases with menorrhagia.

In our study in endometrial biopsy report 30% had proliferative endometrium followed by 24% had secretory endometrium ,20% had disordered endometrium ,14% had hyperplasia without atypia and 4% had inadequate biopsy report. These cases were managed according to their report.

CONCLUSION

Ultrasound is a non-invasive ,safer, cheap, rapid, highly acceptable, easily available, one stop affordable tool with high accuracy of diagnosis in patients with heavy menstrual bleeding. With advancement of ultrasound technology and improved training in ultrasonography it become an first line highly accurate method for diagnosing HMB.

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