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Original Research Article.

A Study on the Clinical and Pathological Evaluation of Dysfunctional Uterine Bleeding

Pradeep Kumar Nagaich[1*], Mrinal Kanti Malik[2]

[1*]Associate Professor, [2]Professor & Head, Department of Pathology,
Varun Arjun Medical College and Rohilkhand Hospital, Banthra, Shahjahanpur, Uttar Pradesh, India.

ABSTRACT

Background: Abnormal uterine bleeding, a common gynecological problem is caused by a range of etiologies that may be functional or organic. Histo-pathological analysis of endometrial sample is considered gold standard for the study of endometrial pathology. Thus here we made an attempt to study endometrial pattern in women with AUB and correlate that with clinical parameters.

Materials and Methods: This hospital based study involved 50 patients with AUB and attending Varun Arjun Medical College and Rohilkhand Hospital. The patients were divided as reproductive (<40), perimenopausal (41-50) and post-menopausal group (>50). The endometrial samples were processed and histopathological analysis was conducted.

Result: Most of study patients were under reproductive age group (52.8%) and multigravid (28%). Functional abnormalities were the common causes of AUB (72%). Menorrhagia was most frequent bleeding pattern observed (36%) followed by metrorrhagia (18%). In case of reproductive age group and perimenopausal, the common histopathological abnormality was proliferative endometrium (18% and 12%) while for post-menopausal age group, it was 8 %. For primipara group disordered proliferative endometrium (8%), for multipara group proliferative endometrium (24%) and for grand multipara group endometrial hyperplasia (10%) were the most frequently observed abnormalities. A single case of malignancy was observed in post-menopausal multipara female.

Conclusion: Histopathological study of endometrial biopsy helps the clinicians in selecting the appropriate therapeutic approach. It is simple and cheap method hence should be used as first line strategy thus reducing the need of other expensive and complicated approaches.

Key words: Bleeding, Endometrium, Pre-Menopause, Post – Menopause.

***Correspondence to:**

Dr. Pradeep Kumar Nagaich,
Associate Professor,
Department of Pathology,
Varun Arjun Medical College and Rohilkhand Hospital,
Banthra, Shahjahanpur, Uttar Pradesh, India.

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INTRODUCTION

The endometrium in females of reproductive age undergoes a complex and regular phases of proliferation secretion and regeneration.[1] Normal menstruation may be defined as the cyclic endometrial bleeding associated with ovulatory cycle and the length of bleeding not exceeding more than 5 days.[2] Bleeding is referred to be abnormal if it is irregular, lasting for longer (more than 7 days) or occurs in abnormal amount (less than 80 ml per cycle).[3] The abnormal uterine bleeding can be defined as a condition of scanty or excess bleeding, prolonged or irregular bleeding regardless of the cause. AUB may be categorized as anovulatory or ovulatory depending upon the occurrence of ovulation.[4]

Abnormal uterine bleeding is a common gynecological problem that accounts for 25-30% of gynecological operations or hysterectomies.[5] Excessive and abnormal menstrual bleeding comes with various untoward health effects such as iron deficiency and anemia, increased burden to healthcare cost and quality of life.[4] Females with AUB are at increased risk of endometrial hyperplasia and carcinoma.[6] AUB is also sign that indicates a number of uterine disorders like dysfunctional or non-organic abnormalities, complications associated with pregnancy organic lesions (Polyps, carcinoma, hyperplasia).[7]

Thus, it is necessary to determine the actual cause of AUB so that appropriate treatment modalities could be implemented. Endometrial biopsy using a thin and small catheter to obtain endometrial cells, aid the pathologist to examine endometrial samples and detect the hormonal status or existing pathology. Thus in this study, an attempt was made to assess the endometrial pathology in the patients with AUB and correlate it with the clinical condition.

MATERIALS AND METHODS

This study comprised 50 females attending obstetrics and gynecology department of Varun Arjun Medical College and Rohilkhand Hospital with complaints of AUB. The histopathological analysis was conducted in the department of pathology from December 2018 to December 2019.

Inclusion Criteria

- Patients with endometrial thickness of more than 16 mm in case of reproductive and perimenopausal age group.
- Post-menopausal patients with endometrial thickness of more than 5 mm.
- Patients having postmenopausal bleeding.

Exclusion Criteria

- Pregnancy or other related conditions.
- Blood disorders.
- Cervical pathology associated bleeding.
- Pelvic inflammatory disease.
- Intrauterine contraceptive device.

Details of each patient such as age, menstrual status (dysmenorrhea, menorrhagia, cycle regularity), general and systemic findings were recorded. Endometrial samples were collected from endometrial biopsy. Patients were grouped into 3 categories

- Reproductive (< 40 years)
- Pre-menopausal (40-50)
- Post-menopausal (> 50)

Inadequate samples were excluded from the study. Routine investigations like hemoglobin, urinary sugar, albumin or microscopy were conducted. CBC, ESR, BT and CT were also analyzed to exclude any blood dyscrasias. The samples obtained were transported for histopathological analysis.

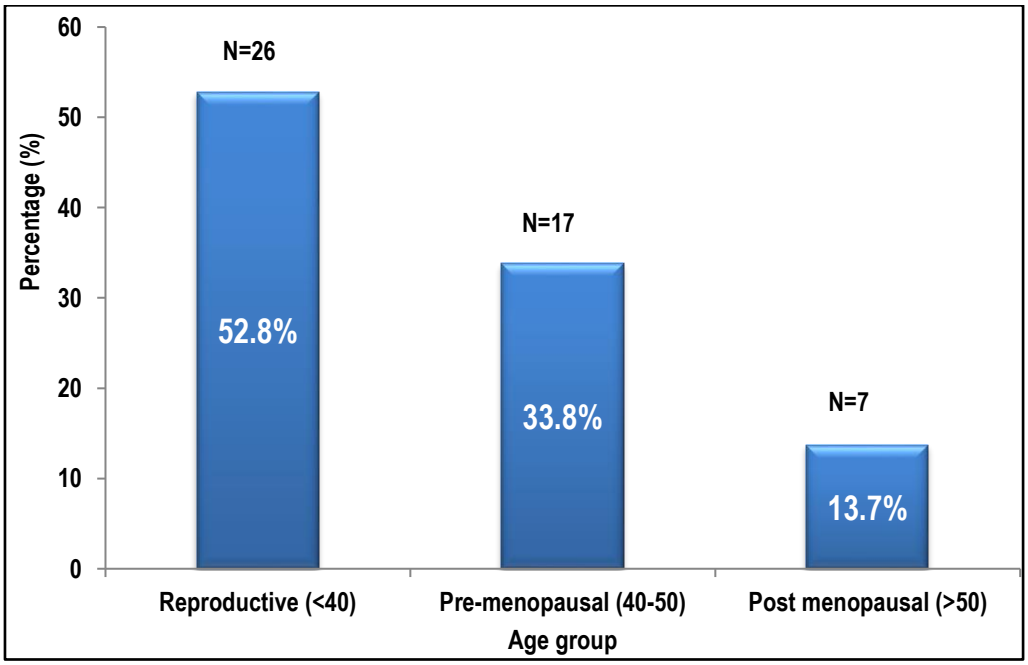

Figure 1: Distribution of patients based on menstrual status

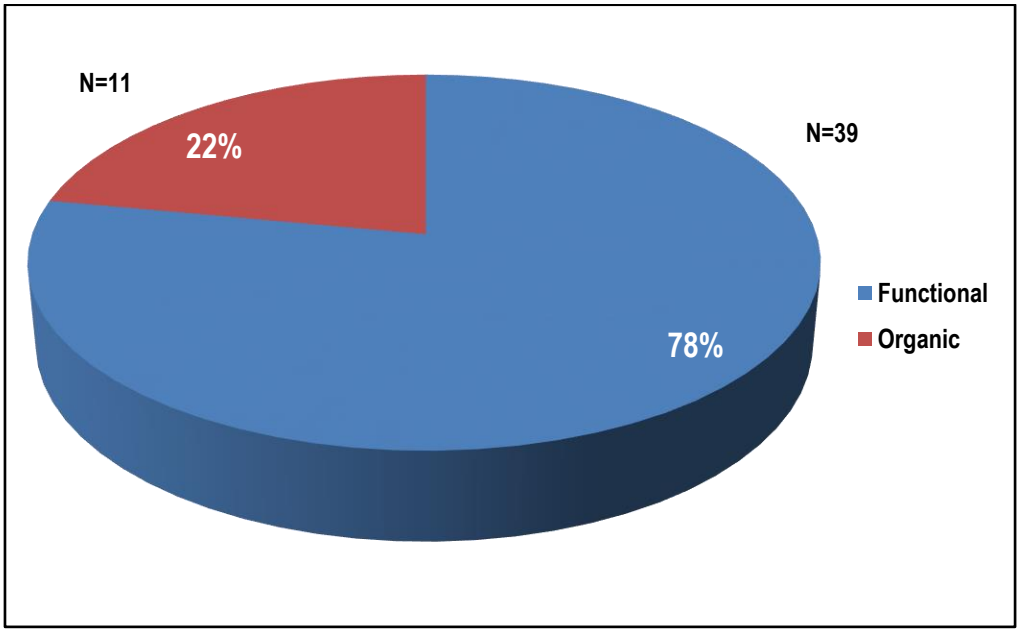

Figure 2: Distribution of patients based on etiology

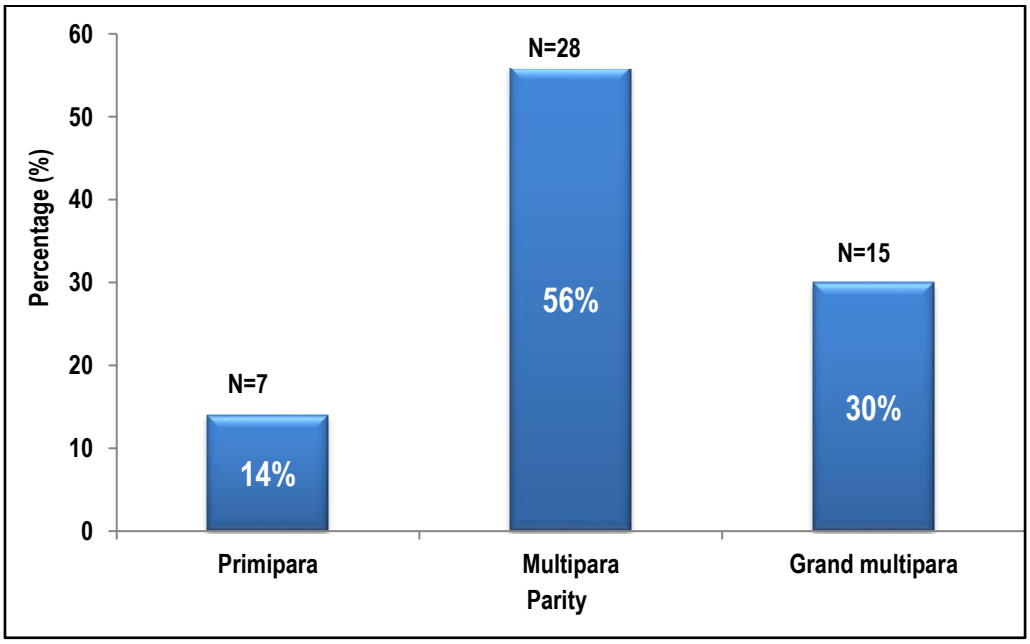

Figure 3: Distribution of patients based on Parity

Table 1: Bleeding pattern in the study group

Bleeding Pattern	Number	Percentage (%)
Menorrhagia	18	36
Metrorrhagia	9	18
Metromenorrhagia	8	16
Oligomenorrhoea	2	4
Polymenorrhoea	5	10
Polymenorrhagia	9	16

Table 2: Histopathological diagnosis with respect to age group

Etiology	Histopathology	Age		
		< 40 (N/%)	40-50 (N/%)	>50 (N/%)
Functions	Proliferative endometrium	9 (18)	6 (12)	-
	Secretory endometrium	5 (10)	3 (6)	4 (8)
	Disordered proliferative endometrium	3 (6)	2 (4)	1 (2)
	Luteal phase defect	1 (2)	-	-
	Pill endometrium	3 (6)	2 (4)	-
Organic	Endometrial hyperplasia	2 (4)	1 (2)	3 (6)
	Atrophic endometrium	2 (4)	-	1 (2)
	Endometritis	1 (2)	-	-
	Malignancy	-	-	1 (2)

Table 3: Histopathological diagnosis with respect to parity

Histopathology	Primipara (N/%)	Multipara (N/%)	Grand multipara (N/%)
Proliferative endometrium	2 (4)	12 (24)	1 (2)
Secretory endometrium	1 (2)	9 (18)	2 (4)
Disordered proliferative endometrium	4 (8)	1 (2)	1 (2)
Luteal phase defect	1 (2)	-	-
Pill endometrium	3 (6)	1 (2)	1 (2)
Endometrial hyperplasia	1 (2)	-	5 (10)
Atrophic endometrium	1 (2)	-	2 (2)
Endometritis	-	1 (2)	-
Malignancy	-	1 (2)	-

RESULTS

Figure 1 shows the distribution of patients. Most of the patients were of reproductive age group (52.8%) followed by pre-menopausal group (33.8%) and post-menopausal group (13.7%).

Of total cases of AUB, 78% of cases were due to functional causes and 22 % were due to organic causes (figure 2)

In figure 3, it is shown that 56% of the patients involved were multipara while 14% and 30% were primipara and grand multipara respectively. In this study abnormal bleeding pattern was also determined 36% of the cases were of menorrhagia while 18% of the cases were of metrorrhagia. Similarly, oligomenorrhagia was observed in 4 % of cases. Polymenorrhea and polymenorrhagia were found in 10% and 16% of the patients respectively. 16% of the patients lied under metromenorrhagia group (Table 1)

Table 2 shows the age wise histopathological diagnosis of AUB. In the women under reproductive age (>40), proliferative endometrium was observed in 18% of cases. Similarly 10%, 6%, 2% and 6% of cases respectively showed secretory endometrium, disordered proliferative, endometrium, luteal phased defect and pill endometrium. In case of peri-menopausal group, the same were respectively 12%, 6%, 4%, and 4%.

DISCUSSION

Endometrium undergoes periodic changes during the reproductive phase of women. In normal case, menstrual shedding is proceeded by endometrial proliferation, thickening of endometrial wall and formation of spiral arteries.[8] However during abnormal cases irregular and excessive bleeding is one of the most common complaints observed in gynecology. The rate and cause of such abnormal bleeding varies with the reproductive age of patients. In case of females under reproductive age group, AUB indicates change in frequency, duration, amount of flow or bleeding in between cycles[9] whereas in case of postmenopausal age, AUB signifies vaginal bleeding at least after 12 months of cessation of menses or the unpredictable bleeding among the postmenopausal women receiving hormone therapy at least for 12 months.

In this study 52.8% of patients were under reproductive age group while 13.7% were under postmenopausal age group. This result was supported by that of Shilpa MD et al.[10] while conversely, Doraiswami S et al.[11] and Muzaffer M et al.[8] showed maximum incidences in perimenopausal group.

AUB may be due to functional abnormalities or organic conditions. 78% of cases of AUB were due to functional while 22% cases were due to organic etiologies in our study. Ara S et al.[12] and Moghal N et al.[13] also reported similar findings. According to them organic etiology of AUB were 21.73% and 22.5% respectively.

We also categorised participants based on parity. Most of the patients in our study lied under multipara group (56%) which was in accordance with kishore V et al.[14]

In the present study, we also assessed pattern of AUB. The common bleeding pattern observed was menorrhagia (36%). Nayak SR et al.[15] and Moghal N et al.[13] reported menorrhagia in 49% and 41% of cases respectively. Similarly Ara S et al.[12] and Jairajpuri ZS et al.[16] showed the same to be 49.06% and 41% respectively. Further, Bhatta S et al[17], Wahda MT et al.[18] and Praveen SH et al.[19] showed menorrhagia among 30.32%, 34% and 18% of females involved in their study. The other frequently observed bleeding pattern was metrorrhagia accounting for 18% of cases. Abdullah LS et al.[20] reported it to be 23% while Muzaffar M et al.[8] reported the same to be 35.4% which was higher than that observed in our study.

On age wise histopathological diagnosis of AUB, we found that among the women of reproductive age group, the most frequent histopathological finding was proliferative endometrium (18%) followed by secretory endometrium. Similar results were observed in perimenopausal age group (i.e. 12% and 6% respectively). Our observations of incidence of proliferative endometrium among perimenopausal women was lower than that of Dhangal G et al (38.5%)[21] and Bhatta S et al (29.16%)[17] and Khare A et al (21.2%).[22] The incidence of secretory endometrium among peri-menopausal women observed in this study was slightly lower than that observed by Bhatta S et al.[17] and Bhosle A et al.[23]

Anovulatory cycle induced progressive increase in estrogen level followed by sudden decrease due to feedback inhibition under the effect of FSH results in bleeding in the proliferative phase. Likewise, the inability of active corpus luteum to secrete sufficient amount of progesterone results in bleeding in secretory phase.[24]

In case of post-menopausal, the common histopathological finding was secretory endometrium (8%) which was in contrast to that of Bhatta S et al who showed proliferative endometrium to be major abnormality.[17]

Disordered proliferative endometrial pattern was observed in 6% cases in reproductive age group, 4% cases in perimenopausal age group and 2% cases in post-menopausal age group. These observations were lower than that of Bhatta S et al.[17]

Pill endometrium was observed in 6% and 4% of females under reproductive and perimenopausal age group. Jairajpuri ZS et al[16], Baral R et al.[24] and Khare A et al.[22] showed the incidences ranging between 1.7%-4.8%. As per the authors, the women who receive hormonal pills, show the histological pattern of inactive glands, decidual reaction, thin blood vessels and abortive secretion.

In our study endometrial hyperphasia was observed in 4%, 2% and 6% cases of reproductive peri-menopausal and post-menopausal age group. Overall prevalence of endometrial hyperphasia was 9.1% in the study of Abdullah et al[20], 10% in the study of Gredmark et al.[25] and 5.79% in that of Jairajpuri et al.[16] Higher incidences were shown by Baral et al (18.3%)[24] and Muzaffar et al (24.7%).[8] We observed atrophic endometrium in 4% of reproductive females and 2% of post-menopausal females. In literature the incidence varied from 1.1%-7%. Though the exact cause is unknown, it is stipulated to be because of defective hemostatic mechanisms or anatomic vascular variation.[11]

Chronic endometritis and malignancy were found in 2% each case of reproductive and postmenopausal females respectively. The result observed in case of chronic endometritis was in concordance with that of Khare A et al.[22] and Abdulla LS et al.[20] Our results in case of endometrial malignancy i.e. all the cases (2%) were in post-menopausal age group. Similar results were also given by Dhangal G et al.[21]

On investigation of histopathology of AUB with regards to parity, we found that the most common pathology in case of primipara group was disordered proliferative endometrium (8%) followed by pill endometrium (6%). Similarly, in case of multipara group, the common histopathological finding was proliferative endometrium (24%) followed by secretory endoetrium (18%). In case of grand multipara group, the common finding was endometrial hyperplasia (10%).

CONCLUSION

Histopathological analysis of endometrium is an important aid to diagnose gynaecological problems as endometrial changes may range from normal to malignant. It can help clinicians for accurate diagnosis and decide proper management modalities. In this study most frequent histopathological finding in reproductive and perimenopausal female was proliferative endometrium while in post-menopausal women it was secretary endometriaum. Similarly for primipara, multipara and grand multipara, the frequent observations were disordered proliferative endometrium and endometrial hyperplasia respectively.

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