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Original Research Article

A Retrospective Analysis of Abnormal Uterine Bleeding and Its Histopathological Correlation

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Abstract:

Background: Abnormal Uterine Bleeding (AUB) is one of the most common gynecological problems among females of reproductive ages, pre- and post-menopause. This disease can result in significant morbidity associated with physical, psychological, and social aspects and may be due to hormone imbalance, endometrium inflammation, excessive growth, or cancerous disorders. The histologic study of the endometrium plays a crucial role in determining the causes of this disease.

Aim: This research work was undertaken in order to observe and understand the clinical and pathological aspects of the patients with abnormal uterine bleeding, as well as to see whether any correlation could be observed between the pathological aspect and the clinical condition along with the age factor of these patients.

Methodology: It is a hospital-based, retrospective and observational study conducted at Department of Obstetrics and Gynaecology, Gauri Devi Institute of Medical Sciences &Hospital, Durgapur, West Bengal, India. within one-year period. A total number of 120 cases diagnosed as abnormal uterine bleeding were included in the study. Data were collected from clinical records and histopathology report form. Age, parity, menstrual history and complaints were recorded. Endometrial histopathological examination was done through biopsy, curettage or hysterectomy.

Results: The most patients were between 41-50 years old, which constituted 40.0% of all the patients under study. Menorrhagia was the common symptom observed in 45.0% of patients. Multigravida comprised 66.7% of all the people under study. The results obtained through histopathology revealed that proliferative endometrium was the most frequently occurring lesion accounting for 30.0%. Other findings include secretory endometrium (20.0%) and endometrial hyperplasia (18.3%). There were also some instances of endometrial carcinoma recorded at 3.3% and these are common among women.

Conclusion: It was concluded that AUB is usually associated with women in their perimenopausal period or who are multiparous. Histopathological examination was found to be an important method of diagnosis, enabling the establishment of endometrial lesions and differentiating between benign, precancerous, and cancerous lesions. Clinicopathological examination is critical during the early stages of diagnosis of AUB.

Keywords: Abnormal uterine bleeding, Histopathology, Endometrial hyperplasia, Menorrhagia, Endometrial carcinoma, Clinicopathological correlation.

Introduction

Abnormal Uterine Bleeding (AUB) is among the most common complications that occur in females belonging to reproductive age, peri-menopause age, and postmenopausal age group [1]. It significantly impacts the physiological, psychological, and reproductive health status of females and leads to a large proportion of consultations and admissions to hospitals. AUB is a condition that can occur in different ways, and this includes conditions such as menorrhagia, metrorrhagia, polymenorrhea, and post-menopausal bleeding [2]. Etiology of AUB can vary from one woman to another depending on a variety of factors, including hormonal abnormalities, endometrial dysfunction, inflammation, benign and malignant diseases. Prevalence of AUB is particularly increased in the perimenopausal period owing to anovulation and hormonal imbalances [3].

Histopathology of endometrial tissue continues to be the best technique used to determine the underlying pathology in cases of abnormal uterine bleeding [4]. The collection of tissues from endometrium using methods like biopsy, dilatation, and curettage, or hysterectomy helps in gaining

knowledge about normal endometrial transformation, precancerous disease, and cancer of the uterus [5]. It is essential to correlate the presentation of the patient with histopathological results in order to facilitate early diagnosis, treatment plan formulation, and identification of patients at risk, particularly those aged more than 40 years [6]. Hence, the current retrospective study was conducted at the Kanti Devi Medical College Hospital and Research Center in relation to the clinicopathological pattern of abnormal uterine bleeding [7].

Background of the Study

Abnormal Uterine Bleeding is one of the commonest problems in gynaecology which is associated with considerable morbidity and affects the quality of life in women of all ages [8]. Abnormal uterine bleeding includes a wide range of medical conditions caused by a simple hormone disorder up to a pathologic condition like endometrial hyperplasia and carcinoma. There are differences in the form of bleeding depending on age, reproductive state, and endometrial pathology [9]. The correct diagnosis of the cause of abnormal uterine bleeding is necessary for effective treatment and for preventing complications because women in the menopause period have increased chances for precancerous and cancer changes [10]. The analysis of endometrium is one of the methods which allow finding out whether there is any pathology in the uterus or not. That is why the histopathological spectrum of abnormal uterine bleeding should be known.

Clinicopathological Evaluation of Abnormal Uterine Bleeding: A clinicopathological study of abnormal uterine bleeding is fundamental in recognizing the factors responsible for abnormal menstruation and irregular uterine bleeding [11]. Abnormal uterine bleeding can be attributed to a variety of conditions such as hormonal dysfunctions, disorders, inflammatory states, hyperplasia, polyps, and cancers. Clinicopathological evaluation is very important in the determination of the cause, since clinical assessment is not always enough in finding out the cause of the condition [12]. Therefore, an analysis of endometrial specimens through biopsy, curettage, and hysterectomy is essential. There is a need to correlate clinical information such as the history of the patient, age, parity, symptoms, and examination results with the microscopic features of the endometrium in order to determine whether it is benign or has premalignant or malignant potential especially in menopausal women.

Research Objectives

The research objectives of the study are:

- To evaluate the demographic and clinical profile of patients presenting with abnormal uterine bleeding at a tertiary care hospital.
- To analyze the histopathological patterns observed in endometrial samples of patients with abnormal uterine bleeding.
- To correlate clinical presentation and age-wise distribution with histopathological findings in cases of abnormal uterine bleeding.

Methodology: This current retrospective study was carried out with the intention of determining the histological features of patients experiencing AUB and developing a relationship between clinical presentations and histopathology. The research methods were structured in such a way that they facilitate systematic collection, evaluation, and analysis of the data.

Study Design: This study was performed as a retrospective observational study conducted in the hospital. Clinicopathological analysis was done for all those cases diagnosed with abnormal uterine bleeding by reviewing the case files and their histopathological reports.

Study Area: This research was conducted at Department of Obstetrics and Gynaecology, Gauri Devi Institute of Medical Sciences &Hospital, Durgapur, West Bengal, India

Study Duration: The research took place within the span of one year.

Study Participants: Total 120 patients clinically diagnosed with abnormal uterine bleeding were selected for the study. Those patients undergoing endometrial sampling, dilatation and curettage or hysterectomy with their histopathology reports were taken up for this study.

Inclusion Criteria

- Patients with abnormal uterine bleeding.
- Patients aged 20 years or more.
- Patients with full clinical data and histopathology reports.
- Patients that have had endometrial biopsies, curettage, or hysterectomies.

Exclusion Criteria

- Pregnant patients with bleeding disorders associated with pregnancy.
- Patients with incomplete medical history or histopathology reports.
- Patients with diagnosed coagulation disorders.
- Patients on hormone therapy before endometrial biopsy.
- Unsatisfactory samples of endometrium for histopathological examination.

Sample Size: The number of cases included in the study was 120 cases of abnormal uterine bleeding that met the inclusion criteria.

Procedure: The data for the study were obtained through the process of retrieving data through retrospective analysis of hospital records, pathology register, and histopathology reports. Data on demographic characteristics including age, parity, menstrual history, clinical symptoms, and diagnosis were collected using a standard procedure for obtaining the data. The specimens obtained through procedures such as endometrial biopsy, curettage, and hysterectomy were analyzed using pathological guidelines.

The findings obtained from histopathological examinations included proliferative endometrium, secretory endometrium, endometrial hyperplasia, disordered proliferative endometrium, atrophic endometrium, endometritis, endometrial polyp, and endometrial malignancy. The connection between the clinical diagnosis and histopathology findings was established to identify various pathologies associated with the disorder under study.

Statistical Analysis: The gathered data were inputted in Microsoft Excel and analyzed using proper statistical programs. The use of descriptive statistics like frequency, percentage, mean, and standard deviation was applied in presenting the data. The relationship of the results from the clinical evaluation and the histopathological patterns was assessed using the Chi-square test. A level of significance of less than 0.05 was considered statistically significant.

Results

In this retrospective study, 120 cases of abnormal uterine bleeding were evaluated to analyze the clinical and histopathological patterns among women visiting the tertiary care hospital. Various demographic and clinical factors were assessed in order to study the distribution of abnormal uterine bleeding according to age groups and parity status. The histopathology of endometrium was done in order to find out the pathologies responsible for abnormal uterine bleeding. Results of the study have been tabulated below along with their analysis.

Abnormal uterine bleeding is found to be common among women of all reproductive as well as post-menopausal age groups. Age is one of the important factors that help in knowing about the cause and pattern of abnormal uterine bleeding in relation to endometrial pathology. The age groups of the participants in the current study were categorized to observe the distribution of abnormal uterine bleeding among different age groups.

Table 1: Distribution of Patients by Age Group (n=120)

Age Group (Years)	Number of Patients	Percentage (%)
20–30	18	15.0
31–40	34	28.3
41–50	48	40.0
51–60	16	13.3
>60	4	3.4
Total	**120**	**100**

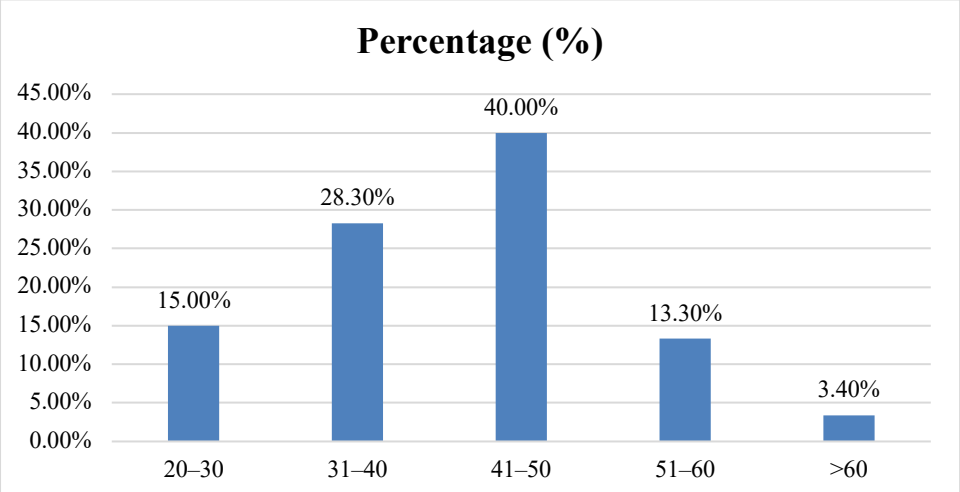

Figure 1: Graphical Representation of Percentage in Age-wise Distribution of Patients

It was observed that the maximum numbers of subjects were recorded in the age group of 41-50 years, with 48 subjects (40%). The second most common age group of subjects was found to be in

the age group of 31-40 years, with 34 subjects (28.3%). On the other hand, the minimum number of subjects were recorded in the age group above 60 years with just 4 subjects (3.4%).

The clinical presentation of abnormal uterine bleeding differs depending on the cause as well as the patient's hormonal condition. Menorrhagia, metrorrhagia, and postmenopausal bleeding were among the bleeding types identified in the study subjects. Identification of the presenting symptoms played an integral role in determining the correlation between the clinical diagnosis and pathological findings.

Table 2: Distribution of Clinical Presentation

Clinical Presentation	Number of Patients	Percentage (%)
Menorrhagia	54	45.0
Metrorrhagia	20	16.7
Menometrorrhagia	24	20.0
Polymenorrhea	12	10.0
Postmenopausal Bleeding	10	8.3
Total	**120**	**100**

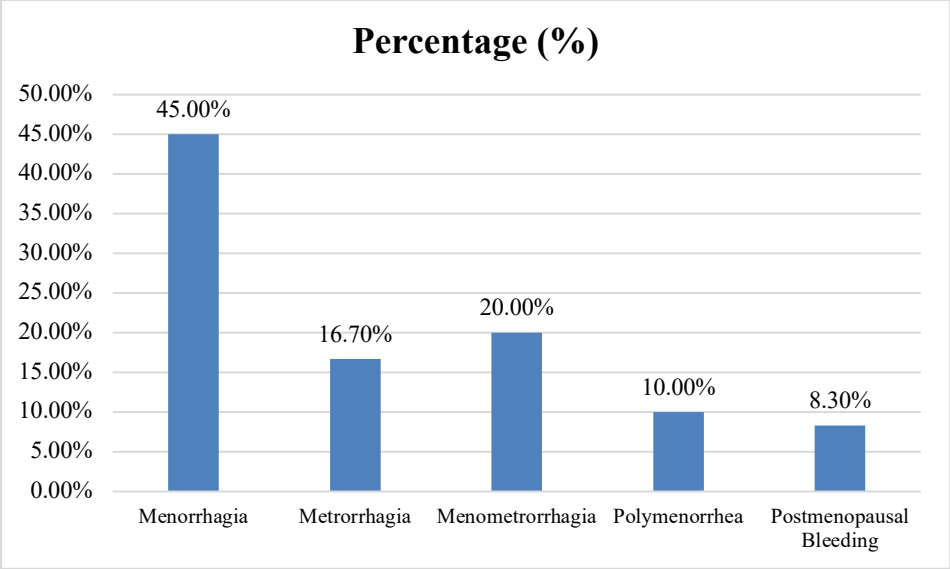

Figure 2: Graphical Depiction of Percentage Occurrence in Clinical Manifestations

In relation to clinical presentations, menorrhagia was recorded among 54 patients (45.0%) while menometrorrhagia was present among 24 patients (20.0%). Metrorrhagia occurred among 20 patients (16.7%) while postmenopausal bleeding was seen in 10 patients (8.3%). The results indicated that the primary complaint among females experiencing abnormal uterine bleeding was excessive menstrual bleeding.

Parity has been viewed as a major factor affecting gynecological problems such as abnormal uterine bleeding. In this study, the reproductive history of patients was examined for the correlation between parity and the incidence of abnormal uterine bleeding. Parity was classified into three categories including nulliparity, primiparity, and multiparity according to the obstetric history of patients. The patient distribution by parity is shown below.

Table 3: Parity Distribution of Patients

Parity Status	Number of Patients	Percentage (%)
Nulliparous	14	11.7
Primiparous	26	21.6
Multiparous	80	66.7
Total	**120**	**100**

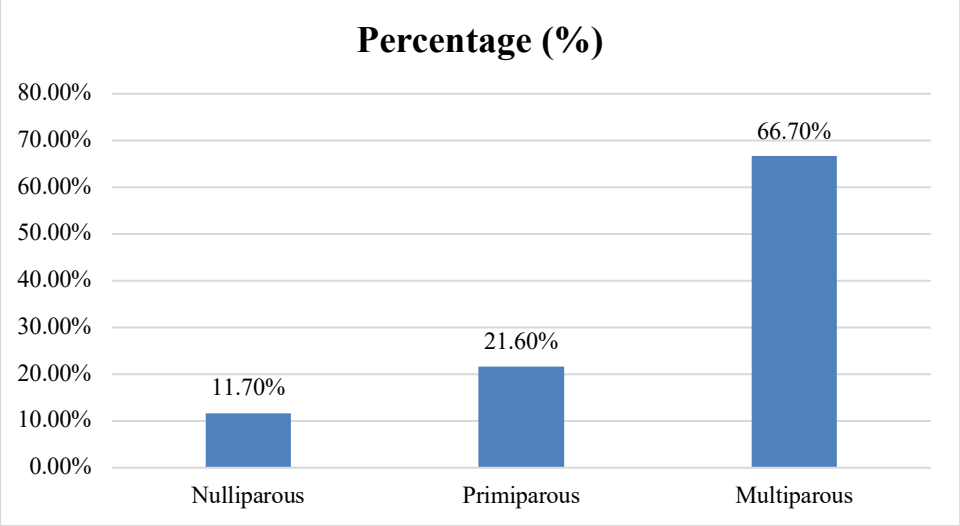

Figure 3: Graphical Representation of Percentage in Parity Distribution of Patients

The majority of the participants were multiparous women at 80 (66.7%), then followed by primiparous women at 26 (21.6%). Nulliparous patients accounted for 14 women (11.7%). As can be inferred from the above results, there was a greater number of patients with abnormal uterine bleeding in multiparous women.

The study of histopathology of endometrium is of critical importance in finding out the cause of abnormal uterine bleeding. The endometrium can be classified into various kinds depending on the stage, ranging from normal to precancerous or cancerous state. In this study, the endometrial tissue collected from patients' biopsies, curettes, and hysterectomies underwent histopathologic examination. The distribution of various histopathological findings is as follows.

Table 4: Histopathological Changes in Abnormal Uterine Bleeding

Histopathological Finding	Number of Cases	Percentage (%)
Proliferative Endometrium	36	30.0
Secretory Endometrium	24	20.0
Endometrial Hyperplasia	22	18.3
Disordered Proliferative Endometrium	14	11.7
Atrophic Endometrium	8	6.7
Endometritis	6	5.0
Endometrial Polyp	6	5.0
Endometrial Carcinoma	4	3.3
Total	**120**	**100**

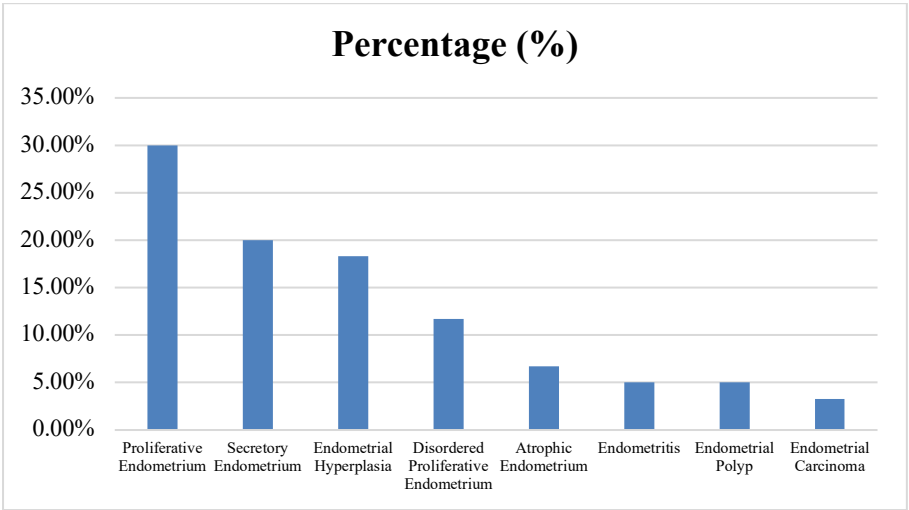

Figure 4: Graph Showing Percentage of Histopathological Changes in Abnormal Uterine Bleeding

There were 36 cases showing Proliferative Endometrium, accounting for 30% of the total number of observations. Next to proliferative endometrium, secretory endometrium was found in 24 cases (20%). Hyperplastic endometrium was diagnosed in 22 cases (18.3%), whereas only four women were found to be suffering from endometrial carcinoma (3.3%). Based on the above results, it was shown that benign changes in the uterus are more widespread compared to malignant lesions.

Age differences in histopathological findings were studied in order to determine the correlation between an increasing age factor and development of specific pathological changes in the uterus. It is well known that hyperplasia and endometrial carcinoma develop in elderly females, therefore, histopathological findings were correlated with patient age groups in order to determine distribution of lesions in younger vs. elderly females. Below is the result obtained.

Table 5: Correlation Between Age Group and Histopathological Findings

Histopathological Finding	≤40 Years	>40 Years	Total
Proliferative Endometrium	24	12	36
Secretory Endometrium	18	6	24
Endometrial Hyperplasia	6	16	22
Disordered Proliferative Endometrium	4	10	14
Atrophic Endometrium	0	8	8
Endometritis	4	2	6
Endometrial Polyp	2	4	6
Endometrial Carcinoma	0	4	4
Total	**58**	**62**	**120**

In the cases where the age of the patient was 40 years or younger, endometrium proliferation was the most common diagnosis in 24 cases, while endometrial hyperplasia was the most frequent in cases where the patient's age exceeded 40 years, with 16 diagnoses. Among the four endometrial carcinomas and eight cases of atrophic endometrium, the patients had an age exceeding 40 years.

Discussion

The retrospective study design was chosen in the current research to estimate the demographic characteristics, clinical symptoms, and the histopathological types associated with the condition of abnormal uterine bleeding. It is important to note that, according to the findings, the age group that had the highest occurrence of the condition was the 41-50 years old group with 40.0% of all participants; therefore, it can be stated that the problem under discussion mostly affects perimenopausal women. In accordance with the studies by Doraiswami S et al. (2011) [13] and Sajitha K et al., (2014) [14] abnormal uterine bleeding occurs among perimenopausal women more often due to the hormonal imbalance and anovulatory cycle. Menorrhagia was the most common form of clinical presentation among abnormal uterine bleeding in the present study, as it was diagnosed in 45.0% of patients, which corresponds with the results obtained by Shukla M et al. (2017) [15].

Proliferative endometrium was found to be the most commonly diagnosed type of uterine pathology (30.0%), followed by secretory endometrium (20.0%) and endometrial hyperplasia (18.3%). This pattern correlated well with the results of studies by Baral R (2011) [16] and Bhatta S (2012) [17] on women suffering from abnormal uterine bleeding. In addition, the prevalence of endometrial hyperplasia in the present study was similar to the findings reported by Chhatrasal C et al., (2017) [18] where the higher frequency of occurrence of such pathological processes was associated with the age range of menopause. It is important to mention that the rate of detection of endometrial carcinoma in the present study (3.3%) was also similar to previous research; in particular, the results suggested that malignancies comprised only a minor proportion of abnormal uterine bleeding cases.

Age and pathological findings in relation to each other in the current study have shown that pathological changes like endometrial hyperplasia, atrophic endometrium, and endometrial carcinoma were mostly seen in patients above the age of 40 years. Endometrial carcinoma and atrophic endometrium in the present study was found only in women above 40 years, indicating a strong correlation between aging and endometrial pathology. This conclusion is supported by the findings from a study conducted by Sharma S et al., (2014) [19] where it was seen that postmenopausal women and older females had more chances of developing hyperplasia or cancerous lesions. Similarly, Doddamani UG et al. (2014) [20] noted that a proper histopathological examination helps in detecting premalignant and malignancies in women with abnormal uterine bleeding, especially postmenopausal women. Thus, the results from the

current study indicate the importance of histopathology in determining abnormal endometrial conditions in females with abnormal uterine bleeding.

Conclusion

The present retrospective study proved that patients in the perimenopausal stage of life exhibited a higher prevalence of abnormal uterine bleeding, and the condition was common among multiparous women aged 41–50 years. It should be noted that menorrhagia was found to be the primary type of clinical manifestation seen in patients involved in the study. Moreover, proliferative endometrium was discovered to be the most common type of endometrial pathology in terms of histological evaluation, and other types included secretory endometrium, hyperplasia, and malignancies. What is more, this study showed that advanced age significantly increased the risk of pathological endometrial changes, including hyperplasia and carcinoma, and such lesions were mostly recorded in patients aged over 40 years. Thus, it can be argued that histological analysis of the endometrial tissue is a necessary means for the diagnosis of abnormal uterine bleeding and clinicopathological correlation.

References

1. Anuradha, M. (2017). Endometrial patterns in abnormal uterine bleeding: a retrospective study. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 6(11), 4966-4971.
2. Ghani, N. A., Abdulrazak, A. A., & Abdullah, E. M. (2014). Abnormal uterine bleeding: a histopathological study. Journal of Pathology Research, 3(2), 68.
3. Gopalan, U., Rajendiran, S., & Karnaboopathy, R. (2017). Study of endometrial histopathology in women with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol, 6(3), 824-8.
4. Jairajpuri, Z. S., Rana, S., & Jetley, S. (2013). Atypical uterine bleeding-Histopathological audit of endometrium A study of 638 cases. Al Ameen J Med Sci, 6(1), 21-8.
5. Khan, S., Hameed, S., & Umber, A. (2011). Histopathological pattern of endometrium on diagnostic D & C in patients with abnormal uterine bleeding. Annals of King Edward Medical University, 17(2), 166-166.
6. Mahmoud, M. M., & Aseel, G. R. (2013). Endometrial histopathological changes in women with abnormal uterine bleeding in Kirkuk city, a clinicopathological study. Med J of Babylon, 10, 567-82.
7. Mehla, S., Singh, M., & Chutani, N. (2014). Clinicopathological correlation of adenomyosis and leiomyoma in hysterectomy specimens as the cause of abnormal uterine bleeding: A retrospective study. Sch J App Med Sci, 2(6G), 3320-3323.
8. Neena, Y., & Honey, B. (2013). Clinico-pathological correlation of hysterectomy specimens for abnormal uterine bleeding in rural area. Journal of Evolution of Medical and Dental Sciences, 2(39), 7506-7512.
9. Ozer, A., Ozer, S., & Kanat-Pektas, M. (2016). Correlation between transvaginal ultrasound measured endometrial thickness and histopathological findings in Turkish women with abnormal uterine bleeding. Journal of Obstetrics and Gynaecology Research, 42(5), 573-578.
10. Pillai, S. S. (2014). Sonographic and histopathological correlation and evaluation of endometrium in perimenopausal women with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol, 3(1), 113-7.
11. Salvi, A., Mital, P., Hooja, N., Batar, A., Soni, P., & Beniwal, R. (2015). Spectrum of endometrial histopathology in women presenting with abnormal uterine bleeding. Parity, 1(2), 3.
12. Singh, A., & Bai, P. R. (2016). Study of histopathological pattern of endometrium in abnormal uterine bleeding and its management. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 5(2), 432-437.
13. Doraiswami, S., Johnson, T., Rao, S., Rajkumar, A., Vijayaraghavan, J., & Panicker, V. K. (2011). Study of endometrial pathology in abnormal uterine bleeding. The journal of Obstetrics and Gynecology of India, 61(4), 426-430.
14. Sajitha, K., Padma, S. K., Shetty, J. K., KishanPrasad, H. L., Permi, H. S., & Hegde, P. (2014). Study of histopathological patterns of endometrium in abnormal uterine bleeding. CHRISMED journal of health and Research, 1(2), 76-81.
15. Shukla, M., Fonseca, M. N., Kharat, D., & Tekale, P. (2017). A study to correlate histopathological findings in patients with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol, 6(2), 654-7.
16. Baral, R., & Pudasaini, S. (2011). Histopathological pattern of endometrial samples in abnormal uterine bleeding. Journal of Pathology of Nepal, 1(1), 13-16.
17. Bhatta, S., & Sinha, A. K. (2012). Histopathological study of endometrium in abnormal uterine bleeding. Journal of pathology of Nepal, 2(4), 297-300.
18. Chhatrasal, C., Shelgaonkar, G., Kulkarni, C. V., Ghanghoria, S., Yadav, A., & Aggarwal, P. (2017). Evaluation of endometrial histopathological patterns in abnormal uterine

bleeding: A study of 1545 cases. Int J Med Sci Public Health, 6(7), 1.
19. Sharma, S., Makaju, R., Shrestha, S., & Shrestha, A. (2014). Histopathological findings of endometrial samples and its correlation between the premenopausal and postmenopausal women in abnormal uterine bleeding. Kathmandu University Medical Journal, 12(4), 275-278.
20. Doddamani, U. G., Doddamani, G. B., Katageri, G., & Mallapur, A. (2014). Clinicopathological correlation of endometrium in abnormal uterine bleeding. Sch J App Med Sci, 2(1A), 46-49.