

Correlation Between Endometrial Histopathology, USG Findings and Clinical Symptoms in AUB

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Abstract

Background: Correlation between endometrial histopathology, ultrasound findings and clinical symptoms in patient of abnormal uterine bleeding.

Aim: To study the histopathology report of endometrial tissue in patients with abnormal uterine bleeding who all underwent dilatation and evacuation.

Objectives: (a) To compare the histopathology report with the ultrasonography findings and clinical symptoms. (b) To categorize Patients into benign and malignant disease.

Settings and design: This observational study was carried out in a tertiary health care center of Pune.

Materials and method: A retrospective observational study was conducted in 30 women having abnormal uterine bleeding, who presented to the department of obstetrics and gynecology, Bharati Vidyapeeth deemed university, Pune between Jan 2021 to October 2021.

Histopathology reports were traced for all the patients who underwent dilatation and curettage. The relevant clinical symptoms were noted. Patients were categorized into benign and malignant disease based on their histopathology report and ultrasonography findings.

Results: In this study, 6.6% of cases were confirmed to be of endometrial carcinoma. The maximum score of 16 in ultrasound was suggestive of malignancy.

Keywords: Endometrial histopathology; Ultrasound; Clinical symptoms; Dilatation and curettage; Abnormal uterine bleeding.

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Introduction

Abnormal uterine bleeding is the most common complaint that bring women of the reproductive age group to their gynaecologist. The hypothalamic and pituitary ovarian axis need to be intact for normal menstruation.¹ The normal human menstrual cycle can be divided into two: the ovarian cycle and the uterine cycle. The normal function of HPO axis is under the effect of gonadotrophins and gonadal steroids. The deviation of this normal hormonal axis

leads to the irregularities in the normal menstrual cycle. The classic terminology that describe AUB includes amenorrhea, oligomenorrhoea, Polymenorrhoea, Metrorrhagia, hypomenorrhoea.

As per the FIGO 2011, AUB divided into structural and non structural causes based on PALM-COEIN²:

Structural

- Polyp
- Adenomyosis
- Leiomyoma
- Malignancy&hyperplasia

Non Structural

- Coagulopathy
- Ovulatory dysfunction
- Endometrial
- Iatrogenic
- Non classified

According to FIGO 2009: Chronic AUB be defined as bleeding from uterine corpus that is abnormal in volume, regularity and/or timing has been present for the majority of the past six month. The various diagnostic techniques to determine the aetiology of abnormal uterine bleeding are dilatation and curettage, hysteroscopy, transvaginal ultasonography (TVS)and saline infusion sonography (SIS).³

Transvaginal ultasonography is the first imaging modality to diagnose structural causes of AUB, such as polyp, adenomyosis, leiomyomas, hyperplasia and malignancy. The traditional 2-dimensional imaging can be enhanced by the addition of 3-dimension imaging with coronal reconstruction and saline infusion sonohysterography.⁴

Endometrial thickness as measured by TVS (transvaginal ultasonography) also help in identifying the suspicious malignant pathology. Endometrial thickness of more than 8 mm suspicious of endometrial pathology in perimenopausal women with AUB while ET more than 4 mm is for postmenopausal women.^{5,6} The clinical evaluation aid in diagnosis co relating with ultasonography finding. The clinical symptoms like pain in abdomen, irregular menses, intermenstural bleeding, loss of weight, loss of appetite.

Hysteroscopy aids in examining the endocervical and uterine cavities under direct visualization and accurate localization of the pathology. The office endometrial sampling serve both diagnostic and

therapeutic value, which is not only safe its well tolerated by patient also.⁸

Materials and Methods

A retrospective observational study was carried out in 30 women (perimenopausal and post menopausal age group) visiting gynecological OPD with abnormal uterine bleeding in Bharati Hospital, Pune, between Janary 2021 to october 2021. The purpose and the procedure of the study was explained to them and a informed written consent was obtained.

Histopathology report were traced for all the patient who underwent dilatation and curettage. The relevant clinical symptoms were noted. Patients were categorized into benign and malignant disease based on their histopathology report and ultasonography findings such as vasucarity, endometrial thickness, colour etc. A scoring was done to the structural changes in the endometrium in case of benign or malignant group of disease.

Inclusion Criteria

All women b]etween the age group of 45-60 years, who underwent dilatation and curettage

Exclusion Criteria

- Patient already diagnosed with malignancy
- Patient on any hormonal replacement therapy

Results

Table 1: Usg Scoring Criteria
Ultrasound scoring was given as below on the basis of endometrial echo texture.

Endometrial thickness	
• Thickened endometrium	1
• Intracavitary fluid present along with thickness of endometrium	2
Echogenecity	
• Three layer pattern	1
• Hypo-echogenic	2
• Hyper- echogenic	3
• Iso - echogenic	4
Colour	
• No colour	1
• Minimal colour	2
• Moderate colour	3
• Abundant colour	4

Vascular pattern

- Single dominant vessel without branching 1
- Branching ,multiple vessels 2
- Focal origin 3
- Multi-focal origin 4
- Scattered vessels 5

Table 1 The above table depict that the maximum score was 5, 1-5 score was given to the different structural variables of endometrium such as echogenecity, vascular pattern, colour, endometrial thickness.

The above table depicts the score given to each endometrial pathology based on ultrasound features. The highest score of 16 referred to

Table 2: Distribution of Cases Based on Usg Scoring.

Endometrium	Endometrial thickened	Echogenecity	Colour	Vascular	Extend of endometrial lesion	Total	% cases diagnosed
Carcinoma	2	4	4	5	1	16	3.33%
Hyperplasia without atypia	1	2	2	1	—	6	13.3%
Atypia	1	3	3	4	—	11	10%
Endoproliferative - myoadenomyosis	2	2	—	4	—	8	6.66%
Proliferative phase	1	2	1	—	—	4	16.6%
Secretory phase	1	3	3	2	—	9	16.6%

endometrial cancer, then the second highest score was given to complex endometrial hyperplasia followed by secretory phase of endometrium.

The maximum endometrium thickness, more echogenecity, high vascularity and extension of endometrial lesion seen in USG and indicative of malignancy.

Out of 30 cases, 3.33% were diagnosed with endometrial carcinoma, 13.3% shows simple hyperplasia with atypia, 10% shows complex with atypia, 6.66% shows endoproliferative myoadenomyosis, 16.6% Proliferative phase and 16.6% secretory phase of endometrium.

Table 3: Distribution Based on Histopathology Report.

Suspicious of malignancy	6.6%
Hyperplasia without atypia	23.3%
Hyperplasia with atypia	23.3%
Endoproliferative -myoadenomyotic changes	13.3%
Proliferative endometrium	16.66%
Secretory endometrium	16.66%

Out of 30 cases, who all underwent dilatation and curettage 6.6% of women in perimenopausal age group suspicious of malignancy or proven case of endometrial carcinoma. 46.6% of women with AUB diagnosed with atypia, while 16.6% of women with proliferative endometrium and secretory endometrium suggestive of benign group of disease.

Table 4: Correlation of Ultrasound and Histopathology Findings.

Endometrium	Ultrasound	Histopathology
Carcinoma	3.33%	6.6%
Hyperplasia with atypia	13.3%	23.3%
Hyperplasia without atypia	10%	23.3%
Adenomyosis	6.66%	13.3%
Proliferative endometrium	16.6%	16.6%
Secretory endometrium	16.6%	16.6%

Out of the 2 patients who were diagnosed with ca endometrium on histopathology, 1 was diagnosed with carcinoma on usg (3.3%)

The above table depicts that 3.33% cases diagnosed as carcinoma on ultrasound while it was 6.6% on histopathology.

Table 5: Distribution Based on Symptoms.

	Pain in abdomen	Mennorhagia	Polymennorhoea	Weight loss	Irregular bleeding
Endometrial ca	1	—	—	1	2
Hyperplasia	5	—	—	—	11
Adenomyosis	4	—	—	—	7
Proliferative endometrium	—	3	—	—	5
Secretory endometrium	—	3	—	—	5

As the most common symptoms related to endometrial pathology is pain in abdomen, irregular bleeding, menorrhagia, polymenorrhoea, weight loss. It is concluded that irregular bleeding is the most common presentation seen in women with AUB patient around 100%.

Discussion

Endometrial carcinoma is the third most common gynecological cancer. Its incidence is more seen to be around 45-60 years of age (Perimenopausal and Post menopausal). It is one of the dreaded condition in women life presented with the most common symptoms of abnormal uterine bleeding.⁶

There are different modalities of diagnosing endometrial disease like transvaginal sonography, hysteroscopy and endometrial sampling and dilatation and curettage.

Transvaginal ultrasound is the first-line imaging test for evaluating the endometrial structural abnormality such as hyperplasia and malignancy. A good correlation of ultrasonography finding seen with histopathology findings in case of physiological changes, Proliferative and secretory changes in endometrium, 16.6 % of cases diagnosed on ultrasound and confirmed on histopathology examination in the present study.⁸

A poor correlation seen with pathological changes like carcinoma with (3.33%), hyperplasia with atypia (13.3%), without atypia (10%), adenomyosis (6.66%).

In the research, Sujatha Audimulapu, M et al found that out of 50 cases, TVS findings matched with histopathology findings in 26 cases (52%) and the result is different in 24 patients (48%)¹⁰

Swathi GR et al. in their study observed only 3 cases of malignancy, with the sensitivity of 0% and specificity of 100%. The negative predictive value was 97%. Nicula et al observed that for patients with malignancy, sensitivity and specificity were 67% and 100% respectively.¹¹

Hysteroscopy shows gross anatomy of endometrium use to confirm the diagnosis if cancer. The endometrial sampling or dilatation and curettage is the diagnostic tool. The endometrial tissue sent for histopathology examination and is been graded, there are three tier of grading in which grade 1 cancer have least aggressive and best prognosis and grade 3 is the most aggressive tumor. There is surgical staging for endometrium cancers.¹²

Rosalia Maria rita 2015 concluded that hysteroscopy allows directed biopsies which is useful in malignant endometrial pathology with sensitivity of 100%, specificity of 95%, PPV 71%, NPV 100% Kanat-Pektas et al. observed that only 1.1% cases of endometrial carcinoma revealed on histopathological analysis which shows correlation with ultrasound finding.

In the present study the endometrial sampling seen more sensitive in diagnosing carcinoma as compare to ultrasonography. Through histopathology examination 6.6% cases have been confirmed to have endometrial carcinoma while 3.33% shows features of carcinoma on ultrasound. Similarly hyperplasia with or without atypia and adenomyosis confirmed on histopathology.

Conclusion

The histopathology report has a major role in confirming benign and malignant conditions. The clinical symptoms and ultrasound findings turns to be indicator in diagnoses of endometrial cancer. Dilatation and curettage plays both diagnostic and therapeutic role in AUB patients. Through all these modalities in present scenario, early catch up of endometrial carcinoma is possible.

References

1. Hoffman BL. Williams Gynecology. 2nd ed. p.a Mc Graw Hill;2012:219-40.
2. Munro MG, Critchley HO, Broder MS, Fraser IS, FIGO Working Group on Menstrual Disorders System. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. *Int J Gynecol Obstet.* 2011;113(1):3-13.
3. Wheeler KC, Goldstein SR. Transvaginal ultrasound for the diagnosis of abnormal uterine bleeding. *Clinical obstetrics and gynecology.* 2017 Mar 1;60(1):11-7. References Efficacy of Ultrasonography for Structural Categorisation of Abnormal Uterine Bleeding.
4. Jones K, Bourne T. The feasibility of a "one stop" ultrasound-based clinic for the diagnosis and management of abnormal uterine bleeding. *Ultrasound Obstet Gynecol.* 2001;17:517-521.
5. El-Sherbiny W, El-Mazny A, Abou-Salem N, et al. The diagnostic accuracy of two- vs three-dimensional sonohysterography for evaluation of the uterine cavity in the reproductive age. *J Minim Invasive Gynecol.* 2015;22:127-131.

6. Cogendez E, Eken MK, Bakal N, et al. The role of transvaginal power Doppler ultrasound in the differential diagnosis of benign intrauterine focal lesions. *J Med Ultrason* (2001). 2015;42:533-54
 7. Pyari JS, Rekha S, Srivastava PK, Goel M, Pandey M. A comparative diagnostic evaluation of hysteroscopy, transvaginal ultrasonography and histopathological examination in cases of abnormal uterine bleeding. *Journal of Obstetrics and Gynecology of India*. 2006 May 1;56(3):240-3.
 8. Haq K, Chowdhury SF, Mannan M, Ivy R, Tasnim KS. Transvaginal ultrasonography is the diagnostic method for evaluation of abnormal uterine bleeding. *Journal of Shaheed Suhrawardy Medical College*. 2009;1(1):11-3.
 9. Kumari M, Gupta AS. A prospective comparative study to evaluate the efficacy of ultrasonography and hysteroscopy and their correlation with the histopathology of endometrium in a case of abnormal uterine bleeding. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2017;4(6):1926-35.
 10. Sujata Audimulapu ,M.Sudeepti . A comparative diagnostic evaluation of hysteroscopy for the diagnosis and assessment of uterine cavity lesions in women. *International journal of reproductive medicine* .2016
 11. SwathiGR,Natraja MK,Shetty SS.A comparative study of hysteroscopy and transvaginal ultrasonography in diagnosis of endometrial pathology in abnormal uterine bleeding. *International journal of Reproduction, Contraception, Obstetrics and Gynecology*. *Int J Reprod Contracept Obstet Gynecol* 2020 May;9(5):1772-1778
 12. Mishra S, Panda B. Efficacy of Ultrasonography and Hysteroscopy and Their Correlation with Endometrial Histopathology in a Case of Abnormal Uterine Bleeding In Late Reproductive Age. *Ann. Int. Med. Den. Res*. 2018; 4(5):OG10-OG14. 88. Gowri M, Nair L. A comparative study of transvaginal ultrasonography and hysteroscopy with histopathological examination in detecting endometrial pathology in peri-menopausal and post-menopausal bleeding. *International Journal of Clinical Obstetrics and Gynaecology* 2019; 3(4): 76-80.
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