ORIGINAL ARTICLE

HISTOLOGICAL PATTERN OF ENDOMETRIAL SAMPLES IN POST-MENOPAUSAL WOMEN WITH ABNORMAL UTERINE BLEEDING

Farhat Deeba, Shaista, Bushra Khan*

Women Medical College, Abbottabad, *Ayub Teaching Hospital Abbottabad-Pakistan

Background: Abnormal uterine bleeding is one of the most common clinical problems in gynaecological practice and is an indicator of various underlying disorders. An endometrial biopsy should be done in all women over 35 years with AUB to rule out endometrial cancer or pre-malignant lesion and to initiate treatment. However, wide range of histological patterns on endometrial biopsy offer a diagnostic challenge to practicing pathologists. The objective of this study was to determine histological patterns of endometrium in postmenopausal women with abnormal uterine bleeding. **Methods:** This cross-sectional study was conducted in the department of obstetrics and gynaecology, Benazir Bhutto Shaheed women and children teaching hospital, Abbottabad from 15/11/2014 to 14/05/2015. This study involved 110 postmenopausal women presenting with abnormal uterine bleeding. A written informed consent was obtained from every patient. **Results:** The mean age of the patients was 61.60±6.17 years and the mean duration of AUB was 5.20±2.80 years. Most of the patients were para 6 (28.2%) and para 5 (28.2%) followed by para 4 (18.2%) and para 3 (17.3%) while only 8.2% were para 1. The most common histological pattern observed was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%). When stratified the data, there was no significant difference of histological patterns across various age groups (p=.673), duration of AUB (p=.064) and parity (p=.242). **Conclusion:** The most common histological pattern observed in postmenopausal women with AUB was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%).

Keywords: Postmenopausal Women; Abnormal Uterine Bleeding; Histological Endometrial Patterns

J Ayub Med Coll Abbottabad 2016;28(4):721–4

INTRODUCTION

Abnormal uterine bleeding (AUB) is a very common gynaecological condition that affects all age groups. One third of the patients attending gynaecology OPD present with complaints of abnormal uterine bleeding.[1] Bleeding is set to be abnormal when the pattern is irregular, abnormal duration (>7 days) or menorrhagia or abnormal amount (>80 ml/menses).[2]

AUB is an indicator of various underlying disorders, which have been newly classified by the International Federation of Gynaecology and Obstetrics (FIGO) Menstrual Disorders Group. Under this system of classification, causes of AUB are classified as polyps (AUB-P), adenomyosis (AUB-A), leiomyomas (AUB-L), malignancy and premalignant conditions (AUB-M), coagulopathy (AUB-C), ovulatory disorders (AUB-O), endometrial disorders (AUB-E), iatrogenic (AUB-I), and "not classified'' (AUB-N).[3]

An endometrial biopsy should be done in all women over 35 years with AUB to rule out endometrial cancer or pre-malignant lesion (e.g., a typical hyperplasia). Endometrial biopsy should also be considered in women between the age of 18 and 35 years with AUB who have risk factors for endometrial cancer or if AUB fails to resolve with medical management.[4]

In peri-menopausal age groups menstrual cycle becomes shortened, irregular and often an ovulatory as the ovarian activity declines initially and then ovulation fails, no corpus luteum form and no progesterone is secreted from the ovary. The irregularity in menstrual cycle during perimenopause can be due to anovulation or to irregular maturation of follicles.[5] The increased risk of endometrial hyperplasia and endometrial carcinoma is more evident in peri-menopausal and post-menopausal women with abnormal uterine bleeding.[6]

Most hyperplasias that occur in menopausal women are associated with chronic anovulation. Typically postmenopausal women with hyperplasia or carcinoma have moderate or heavy vaginal bleeding compared with atrophic endometrium where there will be only spotting per vaginum.[7] The aim of this study was to find the

histological pattern of endometrium in abnormal uterine bleeding in post-menopausal age group.

MATERIAL AND METHODS

This cross-sectional study was conducted in the department of obstetrics and Gynaecology, Benazir Bhutto Shaheed Women and Children Teaching Hospital, Abbottabad over a period of six months from 15-11-2014 to 14-05-2015. Sample size was 110 patients and all these cases were taken over this six months period (inclusive criteria was postmenopausal women aged 50–70 years with abnormal uterine bleeding who underwent dilatation and curettage). Written informed consent and detailed history was taken from each patient. Their demographic details were also noted. Following examination under anaesthesia (EUA) and dilatation & curettage, endometrial biopsy was taken and sent for histopathology. Histopathological pattern reported by histopathologic was noted and recorded into the attached *pro forma* along with patients' demographic details. All the histopathologies were acquired from same (Hospital) lab to eliminate bias.

RESULTS

The age of the patients ranged from 50 years to 70 years with a mean of 61.60±6.17 years. The duration of AUB ranged from 1 year to 10 years with a mean of 5.20±2.80 years. Most of the patients were para 6 (28.2%) and para 5 (28.2%) followed by para 4 (18.2%) and para 3 (17.3%) while only 8.2% were para 1.

The most common histological pattern observed was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%) as shown in table-1.

When stratified the data for various age groups, the frequency of malignancy was higher with increasing age of the patient; 50–55 years (8%), 56-60 years (12.5%), 61–65 years (12.9%), 66–70 years (15.8%). Similarly the frequency of complex hyperplasia with atypia (0% vs. 0% vs. 6.5% vs. 7.9%) and without atypia (24% vs. 31.3% vs. 32.3% vs. 34.2%) was also higher with increasing age of the patient. However, the observed difference was statistically insignificant (p=.673) as shown in table-2.

When stratified the data for duration of AUB, the frequency of malignancy was higher with increasing duration of AUB; 1–3 years (5.6%), 4–7 years (14.6%), 8–10 years (18.2%). Similarly frequency of complex hyperplasia with atypia (0% vs. 4.9% vs. 9.1%) and without atypia (22.2% vs. 31.7% vs. 39.4%) was higher with increasing duration of AUB. However again the observed difference was statistically insignificant (p=.064) as shown in table-3.

When stratified the data for parity, the frequency of malignancy was higher with increasing parity of the patient; para 2 (0%), para 3 (10.5%), para 4 (10%), para 5 (12.9%) and para 6 (19.4%). Similarly the frequency of complex hyperplasia with atypia (0% vs. 0% vs. 5% vs. 6.5% vs. 6.5%) and without atypia (11.1% vs. 26.3% vs. 30% vs. 32.3% vs. 38.7%) was also higher with increasing parity of the patient. However, the observed difference was statistically insignificant (p=.242) as shown in table-4.

Table-1: Frequency table for histological pattern

Type	Frequency	Percent
Atrophic Endometrium	27	24.5
Simple Hyperplasia	26	23.6
Complex Hyperplasia without Atypia	34	30.9
Complex Hyperplasia with Atypia	5	4.5
Benign Endometrial Polyp	4	3.6
Malignancy	14	12.7
Total	110	100.0

Table-2: Age groups and histological pattern cross tabulation

			Histological Pattern						Total	*p* value
			Atrophic Endometrium	Simple Hyperplasia	Complex Hyperplasia without Atypia	Complex Hyperplasia with Atypia	Benign Endometrial Polyp	Malignancy		
Age Groups	50–55 Years		7	7	6	0	3	2	25	.673
			28.0	28.0	24.0	.0	12.0	8.0	100.0	
	56–60 Years		5	4	5	0	0	2	16	
			31.3	25.0	31.3	.0	.0	12.5	100.0	
	61–65 Years		7	7	10	2	1	4	31	
			22.6	22.6	32.3	6.5	3.2	12.9	100.0	
	66–70 Years		8	8	13	3	0	6	38	
			21.1	21.1	34.2	7.9	.0	15.8	100.0	
Total			27	26	34	5	4	14	110	
			24.5	23.6	30.9	4.5	3.6	12.7	100.0	

Table-3: AUB and histological pattern cross tabulation

		Histological Pattern						Total	*p*-value
		Atrophic Endometrium	Simple Hyperplasia	Complex Hyperplasia without Atypia	Complex Hyperplasia with Atypia	Benign Endometrial Polyp	Malignancy		
Groups According to Duration of AUB	1–3 Years	16	8	8	0	2	2	36	.064
		44.4%	22.2%	22.2%	.0%	5.6%	5.6%	100.0	
	4–7 Years	7	12	13	2	1	6	41	
		17.1%	29.3%	31.7%	4.9%	2.4%	14.6%	100.0	
	8–10 Years	4	6	13	3	1	6	33	
		12.1%	18.2%	39.4%	9.1%	3.0%	18.2%	100.0	
Total		27	26	34	5	4	14	110	
		24.5%	23.6%	30.9%	4.5%	3.6%	12.7%	100.0	

Table-4: Parity and histological pattern cross tabulation

	Histological Pattern						Total	*p* value
	Atrophic Endometrium	Simple Hyperplasia	Complex Hyperplasia without Atypia	Complex Hyperplasia with Atypia	Benign Endometrial Polyp	Malignancy		
Parity	5	3	1	0	0	0	9	.242
	55.6	33.3	11.1	.0	.0	.0	100.0	
	4	8	5	0	0	2	19	
	21.1	42.1	26.3	.0	.0	10.5	100.0	
	2	7	6	1	2	2	20	
	10.0	35.0	30.0	5.0	10.0	10.0	100.0	
	8	5	10	2	2	4	31	
	25.8	16.1	32.3	6.5	6.5	12.9	100.0	
	8	3	12	2	0	6	31	
	25.8	9.7	38.7	6.5	.0	19.4	100.0	
Total	27	26	34	5	4	14	110	
	24.5	23.6	30.9	4.5	3.6	12.7	100.0	

DISCUSSION

Abnormal uterine bleeding is one of the most common clinical problems in gynaecological practice. Up to 33% of women referred to gynaecological outdoors have this problem and the proportion is even higher in peri-menopausal and postmenopausal women.[8]

An endometrial biopsy should be done in all women over 35 years with AUB to rule out endometrial cancer or pre-malignant lesion (e.g. a typical hyperplasia). Early evaluation in the postmenopausal women is essential to confirm the exact nature of the lesion and to rule out malignancy. Previous studies have shown that 10–20% of endometrial hyperplasia's progress to carcinoma when left untreated.[9] However wide range of histological patterns on endometrial sampling offer a diagnostic challenge to practicing pathologists.

The present study involved 110 postmenopausal women who presented with AUB. The mean age of the patients was 61.60±6.17 years and the mean duration of AUB was 5.20±2.80 years. Most of the patients were para 6 (28.2%) and para 5 (28.2%) followed by para 4 (18.2%) and para 3 (17.3%) while only 8.2% were para 1.

After written informed consent, all of them underwent endometrial sampling. The most common histological pattern observed was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%). Our results match with those of Khare *et al*. (2012) who reported complex hyperplasia in 33.3%, atrophic endometrium in 25%, simple hyperplasia in 25%, and malignancy in 16.7% postmenopausal Indian women with AUB.[10]

Saraswathi *et al*. in a similar study in 2011 reported the most frequent histological pattern in Indian postmenopausal women (>50 years) to be normal endometrium (23.07%) followed by malignancy (20%), complex hyperplasia without atypia (16.92%), benign endometrial polyp (15.38%), simple hyperplasia (9.24%), atrophic endometrium (9.23) and endometritis (6.16%)[11] Previously Dangal in 2003 reported the most frequent pattern in Indian postmenopausal women to be atrophic endometrium (64.4%) and malignancy (24.5%) followed by endometritis (11.1%)[12] Although Afghan *et al*[13] in 2013 and Perveen *et al* in 2011[14] performed a similar study in Pakistan but they only included reproductive and peri-menopausal women. Thus the most common histological pattern observed in local postmenopausal women with AUB was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%).

The present study was first of its kind in local population and has identified increasing age, parity and duration of AUB as possible attributable factors for atypia and malignancy. Further case control studies are therefore recommended to establish the risk associated with these factors.

CONCLUSION

The most common histological pattern observed in postmenopausal women with AUB was complex hyperplasia without atypia (30.9%) followed by atrophic endometrium (24.5%), simple hyperplasia (23.6%), malignancy (12.7%), complex hyperplasia with atypia (4.5%) and benign endometrial polyp (3.6%).

REFERENCES

1. Awwad JT, Toth TL, Schiff I. Abnormal Uterine Bleeding in the Perimenopause. Int J Fertil Menopausal Stud 1993;38(5):261–69.
2. Speroff L, Fritz MA. In: Clinical gynaecologic endocrinology and infertility. 7th edition. Jaypee Brothers Med Publishers (P) Ltd; 2005. Menopause and the peri-menopausal transition; p.621–88.
3. Munro MG, Critchley HO, Broder MS, Fraser IS. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynaecol Obstet 2011;113(1):3–13.
4. American College of Obstetricians and Gynecologists. Committee on Practice Bulletins—Gynecology. Practice bulletin no. 136: management of abnormal uterine bleeding associated with ovulatory dysfunction. Obstet Gynecol 2013;122(1):176–85.
5. Padubidri VG, Daftary SN. Howkins and Bourne Shaw's Textbook of Gynaecology. 14th ed. Noida: Elsevier, A division of Reed Elsevier India Private Limited. Perimenopause, Menopause, Premature Menopause and Post-menopausal Bleeding. In: Padubidri VG, Daftary SN editor; 2008. p. 52–62.
6. Kumar A, Mittal S. Endometrial sampling: How? & why? Obs Gynae Today 2007;12(6):284–87.
7. Lax S. Precursor lesions of endometrial carcinoma: diagnostic approach and molecular pathology. Pathology 2011;32(Suppl-2):255–64.
8. Dinić SPT, Kopitović V, Antić V, Stamenović S, Mitić D, Milošević J. Role of Hysteroscopy in Evaluation of Patients with Abnormal Uterine Bleeding. Acta Fac Med Nis 2011;28(3):177–81.
9. Burbos N, Musonda P, Giarenis I, Shiner AM, Giamougiannis P, Morris EP, *et al*. Predicting the risk of endometrial cancer in postmenopausal women presenting with vaginal bleeding: the Norwich DEFAB risk assessment tool. Br J Cancer 2010;102(8):1201–6.
10. Khare A, Bansal R, Sharma S, Elhence P, Makkar N, Tyagi Y. Morphological Spectrum of Endometrium in Patients Presenting with Dysfunctional Uterine Bleeding. People's J P Sci Res 2012;5(2):13–6.
11. Doraiswami S, Johnson T, Rao S, Rajkumar A, Vijayaraghavan J, Panicker VK. Study of endometrial pathology in abnormal uterine bleeding. J Obstet Gynaecol India 2011;61(4):426–30.
12. Dangal G. A study of endometrium of patients with abnormal uterine bleeding at Chitwan valley. Kathmandu Univ Med J (KUMJ) 2003;1(2):110–2.
13. Afghan S. Yasmeen A. Abnormal Uterine Bleeding (AUB) A Clinicopathological Study of 150 Cases. Ann Pak Inst Med Sci 2013;9(4):201–4.
14. Perveen S, Perveen S. Endometrium histology in abnormal uterine bleeding. Med Channel 2011;17(4):68–7.

Received: 13 April, 2016	*Revised: 29 April, 2016*	*Accepted: 1st June, 2016*

Address for Correspondence:

Dr. Farhat Deeba, Women Medical College, Abbottabad-Pakistan
Email: shahid_emu@yahoo.com