



Comparison study between Histopathological findings of endometrial specimens and final histopathology report after hysterectomy in patients with abnormal uterine bleeding (AUB)

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Abstract

Objective: Endometrial hyperplasia or cancer is detected in around 15% of cases. Irregular bleeding, particularly in postmenopausal women, frequently prompts patients to seek professional counsel. **Design:** It was a retrospective study conducted in King Saud Medical City(KSMC). This study aims to compare the histological findings after an endometrial biopsy,hysteroscopicD&C,and the final after a hysterectomy.It included all women aged 35 and above who visited KSMS with abnormal uterine bleeding and performed an endometrial biopsy. Patients were divided into two categories: (under 55 years old, and women (beyond or equal 55 years old).Furthermore, the histopathological findings were categorized into two parts (benign or malignant). All patients' information was kept private, and only the named investigators knew it. Anonymized data (data that does not include the participant's identity or hospital id number) was stored in an electronic database. The IBM-Statistical Package for Social Sciences (SPSS) version 28 was used to enter and analyse the data. Numbers and proportions are employed to create a descriptive analysis. The T-test will be used to compare the median for each arm, and the Chi-square test will be used to compare the median for each variable compared to the control group. The specificity and sensitivity analysis was done to find the association between standard variables.

Results: BMI is the main factor in promoting AUB. The highest mean has been shown by two variables: histopathology of endometrial sample report (mean =41.82, SD=24.088) and histopathology of hysterectomy (mean =44.03, SD =25.145). The chi-square test shows a significant (p<0.001) showed strong association between two variables (histopathology of hysterectomy diagnosis categories and histopathology biopsy sample report diagnosis categories). **Conclusion:** In women with AUB, the histopathologic findings following hysterectomy were compared to the histology of endometrial biopsy, revealing a link between the two variables .

Introduction

An AUB is a symptom, not an illness, and it is among the most prevalent concerns among women. AUB is the cause of moreover than 70% of gynecological consultations in postmenopausal and menopausal women. Amenorrhea, metrorrhagia, polymenorrhea, and menometrorrhagia are all examples of abnormal uterine bleeding. There are several methods for determining the etiology of AUB (1) . AUB is treated with a combination of medicinal medications and surgical methods. Hysterectomy polypectomy, Endometrial ablation, Myomectomy, and Hysterectomy are all surgical alternatives. Among the most frequent surgeries performed globally is hysterectomy (2). Therefore, this study compares the histological finding after an endometrial biopsy, hysteroscopic D&C, and the final histological finding after hysterectomy.

Methods and Materials

The King Saud Medical City(KSMC) Maternity Hospital was the site of this retrospective investigation. The information was gathered via reviewing files (hard copies) and an E-health system. The KSMC institutional review board approved this study with a number [H1R1-28-Oct21-01]. It included all women aged 35 and above who visited KSMS with abnormal uterine bleeding and performed an endometrial biopsy. Patients who had been referred to KSMC with confirmed enometrial cancer or were diagnosed outside KSMC were excluded. Patients were divided into two categories: (under 55 years old, and women (beyond or equal 55 years old).Furthermore, the histopathological findings were categorized into two parts (benign or malignant). All patients' information was kept private, and only the named investigators knew it. Anonymized data (data that does not include the participant's identity or hospital id number) was stored in an electronic database. The IBM-Statistical Package for Social Sciences (SPSS) version 28 was used to enter and analyse the data. Numbers and proportions are employed to create a descriptive analysis. The T-test will be used to compare the median for each arm, and the Chi-square test will be used to compare the median for each variable compared to the control group. The specificity and sensitivity analysis was done to find the association between standard variables.

Results

The total number of participants was 94 patients .The study included participants from the age 41-83 group. Among them, 17 of them (18.1%) have been characterized as healthy (BMI=18.5 - 24.9), 20 (21.3%) as overweight (BMI=25 - 29.9), and 57 of them (60.6%) as obese (BMI= 30 or above). The median was calculated for the distribution of frequency analysis. About 74 (78.7%) of the patients suffered from chronic disease. 14 (14.9%) of them had the normal mode of delivery, 69(67%) had the baby via cesarean section, while the rest, 17 (18.1%), observed both types of delivery. On the other hand, 69 (73.4%) of the participants never had any surgery, while the ratio of Hysteroscopy, Myomectomy, Laparotomy, ovarian cystectomy, dilatation and curettage, Tubal ligation, and breast surgery were 10(10.6%), 6(6.4%), 2(2.1%), 5(5.3%), 1(1.1/%), and 1(1.1%) respectively. 20 (21.3%) participants didn't possess any abdominal pain. While 61(64.9%) of them had abdominal pain, 2(2.1%) of them had back pain, and 11(11.7%) of them suffered from abdominal distention. Table 1 shows characteristics of females with abnormal uterine bleeding in the Central province of Saudi Arabia. The p-value was in the range of 0.003 to 0.853 and is responsible for describing the significance of each variable accordingly. The results from chi-square indicated a significant relation between ultrasound findings, histopathological findings of endometrial biopsy and hysterectomy specimens in females with abnormal uterine bleeding categories. The value of Pearson correlation was found to be ρ (63, N=94) =211.197, p = <0.05. Table 2 describes the characteristics of ultrasound, histopathological findings of endometrial biopsy, and hysterectomy specimens in females with abnormal uterine bleeding. According to the findings, the ultrasound findings and histopathology of the hysterectomy are significant factors in the AUB investigation.

Table 1. Characteristics of females with abnormal uterine bleeding in the Central province of Saudi Arabia between January 2016 to October 2021 (N=94) and within age groups

Patients characteristics	Total n(%)	Age of patient with uterine bleeding		P - value†
		< 55 yrs	≥ 55 yrs	
Total age	94(100)	49(52.1)	45(47.9)	-
Parity	5(5.2%)	4(9)	1(2)	0.077
BMI (kg)	Healthy (18.5-24.9)	10(10.6)	7(7.4)	0.272
	Overweight (25-29.9)	20(21.3)	13(13.8)	
	Obese (over 30)	57(60.6)	37(39.4)	
Chronic condition	No	20(21.3)	13(13.8)	0.194
	Yes	74(78.7)	36(38.3)	
Mode of delivery	Normal	14(14.9)	8(8.5)	0.853
	Cesarean section	63(67)	33(35.1)	
	Both	17(18.1)	8(8.5)	
Previous gyn surgery	None	69(73.4)	36(38.3)	0.565
	Hysteroscopy	10(10.6)	5(5.3)	
	Myomectomy	6(6.4)	2(2.1)	
	Laparotomy	2(2.1)	2(2.1)	
	ovarian cystectomy	-	-	
	Dilatation and curettage	5(5.3)	3(3.2)	
	Tubal ligation	1(1.1)	-	
	Breast surgery	1(1.1)	-	
	Duration of the abnormal uterine bleeding (years)	1[1]	1[0.5]	
	Endometrial thickness (mm)	12.9[11.38]	9[12.45]	

*IQR, interquartile range; †Mann Whitney U test or chi-square test; **P< 0.05, deemed significant

Discussion

The results identified that women with higher BMI are at a higher rate of AUB. These findings are in contrast with the previous studies. Mahnaz et al. performed a study to declare that obesity as a primary predisposing factor for dysfunctional uterine hemorrhage is linked to a high BMI. Results stated that because there is a strong link between obesity and DUB, weight loss must be explored as a conservative therapy option and other medicinal or surgery options (3). On the other hand, there were no significant variations in the histopathology of endometrial cells between diagnosis D&C with hysterectomy in a research (4). The study shows the high specificity and sensitivity rate for histopathology of the hysterectomy in clinical settings. This study is in association with Suzanna et al.. They performed a retro study on 280 women and found that when a diagnosis of atypical hyperplasia is established, the obstetrician must be cautious that endometrial cancer is present concurrently within the cervix, regardless of the technique of endometrial sample used (5). Yet, as the true pathology worsens, D&C appears to be underdiagnosing. A further D&C or hysteroscopy examination may be advised in individuals with heterogeneous hypertrophy with or without atypia (6).

Conclusions

One of study's major features was its comprehensive examination of all endometrial diseases, including uterine cancer and disorganized proliferating endometrium. However, the ultrasound findings and histopathology of the hysterectomy are significant factors in the AUB investigation. More research with much more data in endometrial aetiology is recommended to acquire more reliable data for each pathology.

Table 2. Characteristics of ultrasound, histopathological findings of endometrial biopsy and hysterectomy specimens in females with abnormal uterine bleeding in the Central province of Saudi Arabia between January 2016 to October 2021 (N=94) and within age groups

Investigations		Total n(%)	Age of patient with uterine bleeding n(%)		P value		
			< 55 yrs	≥ 55 yrs			
Ultrasound findings							
Thick endometrium		28(29.8)	13(13.8)	15(16)	0.001*		
Thick endometrium with cystic changes		21(22.3)	4(4.3)	17(18.1)			
Fibroid		17(18.1)	1(1.1)	16(17)			
Vascular Thick endometrium		9(9.6)	4(4.3)	5(5.3)			
Others		19(20.2)	12(12.8)	7(7.4)			
Biopsy pathological sample							
Endometrial sample type		By pipelle	72(76.6)	35(37.2)	37(39.4)	0.217	
		Dilatation and curettage	22(23.4)	14(14.9)	8(8.5)		
Histopathology of the biopsy sample		Carcinoma	26(27.7)	10(10.6)	16(17)	0.089	
		Hyperplasia	16(17)	8(8.5)	8(8.5)		
		Atypical	3(3.2)	3(3.2)	-		
		Polyp	13(13.8)	6(6.4)	7(7.4)	0.035*	
		Normal	17(18.1)	11(11.7)	6(6.4)		
		Proliferative	10(10.6)	8(8.5)	2(2.1)		
		Secretory	3(3.2)	2(2.1)	1(1.1)		
		Atrophic	6(6.4)	1(1.1)	5(5.3)	0.186	
		Insufficient	-	-	-		
		Hysterectomy specimen		88(93.6)	48(51.1)	40(42.6)	0.035*
Hysterectomy type		Abdominal	5(5.3)	1(1.1)	4(4.3)		
Histopathology of the hysterectomy		Vaginal	1(1.1)	-	-	0.344	
		Laparoscopy	32(34)	12(12.8)	20(21.3)		
		Carcinoma	9(9.6)	5(5.3)	4(4.3)		
		Hyperplasia	4(4.3)	2(2.1)	2(2.1)	0.344	
		Polyp	19(20.2)	9(9.6)	10(10.6)		
		Normal	9(9.6)	6(6.4)	3(3.2)		
		Proliferative	5(5.3)	5(5.3)	-	0.344	
		Secretory	3(3.2)	2(2.1)	1(1.1)		
		Adenomyosis		2(2.1)	1(1.1)	1(1.1)	0.344
		Endometrial cancer		5(5.3)	5(5.3)	3(3.2)	
Endometrial and ovarian cancer		1(1.1)	1(1.1)	1(1.1)			
Cancer diagnosis**		Endometrial and ovarian cancer	41(21.5)	2(6.3)	2(6.3)	0.344	
		Endometrial and cervical cancer	3(3.1)	1(1.1)	-		

*P< 0.05, deemed significant, **only cases that are diagnosed with carcinoma in the hysterectomy histopathology findings

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