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Hysteroscopic findings in patients presenting with abnormal uterine bleeding in a Congolese population of Kinshasa

Authors: Mindombe MolekoPatrick [1], Lumingu Lusakueno Armand [1], Biawila Lusila Bruno [1], Kusuman Amos [1,2], Odimba Mpoy Jules [1,2], Kintoki Makundika Olivier [1], Ndesanzim Otem Christian [1], Nzau-Ngoma Emmanuel [1,2]

Affiliation:
[1] Department of Gynecology and Obstetrics, University Clinics of Kinshasa, Kinshasa, DRC
[2] Espace Endoconception/Clinique d'Or/DAEMMI Berlinde Foundation, Kinshasa, DRC

Abstract

Introduction

Abnormal uterine bleeding is a real public health issue. The distribution of its causes varies from one setting to another. Hysteroscopy, which is the gold standard for structural causes of Abnormal uterine bleeding is not always accessible to our population and no local hysteroscopic data are available. The aim of this study was to determine the symptoms associated with hysteroscopic findings in a Congolese population in Kinshasa presenting with Abnormal uterine bleeding.

Methodology

This was a retrospective case series on 151 records of patients who underwent consecutive office hysteroscopy carried out by a single operator for Abnormal uterine bleeding between January 2018 and December 2022 in a private clinic in Kinshasa. Sociodemographic, clinical and hysteroscopic variables were retained. Descriptive statistics were used and comparison of proportions was made using Pearson's Chi-square or Fisher's Exact test. The test was significant at a p value less than 0.05.

Result

The mean age of patients was 37.53±10.89 years old. They were nulliparous at approximately 51% and the non-menopausal women represented 89.40%. Heavy menstrual bleeding less or equal to 8 days was the most frequent complaint (54.31%). The most common findings were endometrial polyps at 30.36%, uterine myomas at 23.81%, and adenomyosis at 8.93%. In 11.90% of cases, patients had no abnormality found on hysteroscopy. Heavy menstrual

(24.50%) was multiparous. Patients who had never achieved a pregnancy represented 31.79% while those who had experienced at least one abortion represented 51%. Premenopausal patients constituted more than three quarters (89.40%) of the present study. In terms of surgical history, 25.83% of patients had a uterine surgery. More than a half (54%) of these patients had undergone a myomectomy while cesarean section represented 44%. HMB ≤8d was the most reported AUB (54.31%), followed by intermenstrual bleeding (IMB) (23.84%). (Table 1). Endometrial polyps and myomas were the most frequently encountered pathologies in hysteroscopy, with 30.36% and 23.81% respectively. Adenocarcinoma was found in 2.38% of cases. In the presence of AUB, up to 11.90% of patients did not present any abnormality on hysteroscopy. (Table 2).

Regarding the factors associated with polyps as hysteroscopic findings, Table 3 shows that there was no difference in the finding of polyps in patients based on age, nulliparity, nulligestity and the type of bleeding. (p respectively of 0.410; 0.776; 0.363; 0.084 and 0.202).

Compared to women under 34 years old, those from 35 to 44 years old had 4 times the risk of having myomas (OR = 3.6; 95% CI 1.03 – 13.10) in hysteroscopy when presenting with AUB. Considering the type of bleeding, patients presenting with HMB >8d, had 91 times more risk of having myomas compared to those who had HMB ≤8d (OR = 91.00; 95% CI 4.90 – 1687.48). This risk was 12 times when taking in account HMB ≤8d (OR = 11.66; 95% CI 1.27 – 106.79). Nulliparity and nulligestity were not associated with the finding of myomas (p-value of 0.898 and 0.480 respectively). (Table 4).

Discussion

In the present study, the mean age of patients was 37.53±10.89 years old. This finding is in agreement with those made in China and Canada by Sun et al. [9] and Beaumont et al. [10] (respectively 35.9 and 34.3 years). This age is therefore within the range of those advanced in the literature, very close to the pre-menopausal period [12,13]. Indeed, menstrual disorders constitute one of the most frequent complaints among women in perimenopausal period. The latter integrates into its definition several parameters including those linked to age, physiological and biological changes and also symptomatology [14].

With regard to age, certain pathologies which are responsible for AUB, in particular polyps and uterine myomas, have a symptomatology which peaks between the thirties and the forties due to the disturbances in the

functioning of the hypothalamic-pituitary-ovarian axis, frequent during this period [14].

Regarding reproductive characteristics, nulliparous women represented 51% in the present study. This proportion is close to that found by Ghimire et al. [15] which was 61%. However, it differs from the larger proportions of multiparous women reported by Pandey et al. [16], Kashyap et al. [17] and Vijayan et al. [18].

Indeed, in the present study and in that conducted by Ghimire et al. [15], polyps and myomas were the most frequent hysteroscopic findings associated with AUB. Several studies report the existence of an inverse association between parity and the occurrence of myomas and polyps, suggesting a protective effect of multiparity. Myomas and polyps are twice as common in nulliparous women compared to others [19,20]. These myomas can lead to AUB by increasing the endometrial surface area associated with weakening and engorgement of vessels [21], and by supplanting platelet action due to the increase in vascular flow in the areas presenting lesions [22]. In addition, polyps and myomas can be responsible for female infertility, which could explain the preponderance of nulliparity. Several pathophysiological mechanisms have been put forward, in particular by proximal tubal occlusion, modification of gamete transport, deformation of the uterine cavity, abnormal contractility with modification of endometrial vascularization and finally the reduction of endometrial receptivity. This reduction is consecutive to an alteration of the implantation mechanisms by inflammatory phenomena and a reduction in the level of Homeobox (Hox) of the HOXA-10 and HOXA-11 type [23-27].

The discrepancy of the data of the present study compared to those of Pandey et al. [16], Kashyap et al. [17] and Vijayan et al. [18] is probably due to the fact that the presence of these structural anomalies does not necessarily have an impact on a woman's fertility because many of them conceive and give birth with myomas and polyps [27].

Regarding the type of AUB, HMB ≤8d was the most reported complaint. This finding is similar to those noted by Vijayan et al. [17] and Radhikabai et al. [28] who reported frequencies of 76.1% and 31.25% respectively.

The finding of the present study is in agreement with the literature data which places HMB ≤8d in first position as the most reported complaint in case of AUB [29]. Several studies report polyps and myomas as the most common structural pathologies in cases of AUB [28,30]. These can lead to AUB, particularly HMB through mechanisms previously mentioned.

In this study, endometrial polyps were the most common finding at approximately 30.36% and patients presented indifferently with HMB ≤8d, IMB and HMB >8d. This proportion is similar to those found by Lasmar et al. [31], Malik et al. [32] and Ghimire et al. [15] which were respectively 33.9%; 30% and 46.67%. It diverges from those noted by Kaur et al. [33] and Guin et al. [8] who reported endometrial hyperplasia as the most common finding in 30% of cases. In these last two studies, most of patients were multiparous. These studies, mainly carried out in India, a country with a high population density [34] where laws on birth control are restrictive. This could justify the use of contraceptive methods, including estrogen therapy that is not or only minimally counterbalanced [35] being a risk factor underlying endometrial hyperplasia. But also, the high prevalence of obesity and metabolic syndrome in India [36] could explain this high frequency of endometrial hyperplasia, due to the aromatization in adipose tissue of delta-4 Androstenedione and testosterone into estrone and estradiol respectively [37-38].

Myomas represented the second most common pathology in approximately 24%. This proportion is close to that of 29 % found by Kumari et al. [39] whose study focused on peri-menopausal women who had AUB. A longitudinal study estimated that the risk of developing fibroids in a woman over 45 years of age is greater than 60% with a higher incidence during peri-menopause [19]. Indeed, in the present study, 60% of the patients were aged at least 35 years. A similar observation was also observed by Kumari et al. [39] who reported a proportion of approximately 66% of women aged from 40 to 45 years in the perimenopausal period. The essential characteristic of these patients is reflected by a dysfunction of the hypothalamic-pituitary-ovarian axis leading to a climate of relative hyperestrogenism [40].

It has been clearly recognized for several years the role of hormones (estrogens and progesterone) in the occurrence of myomas [41]. In fact, estrogens have a well-accepted mitotic effect, mediated largely by growth factors and by autocrine and paracrine regulation. Estradiol (E2) experimentally stimulates the growth of uterine smooth muscle cells [41]. Although plasma estradiol levels are not necessarily high, we recognize the essential role of a local hyper estrogenic environment (higher concentrations of E2, estrone and their sulfates). It results from metabolic abnormalities, such as reduced conversion of E2 to estrone, and higher concentrations of cytochrome P450 (aromatase) [41].

Endometrial cancer was found in 2.38% of cases in the present study. This proportion

seems to be close to the lifetime risk of presenting endometrial cancer, which is approximately 2.6% [42], and diverges from those found by Giannella et al. [43] and Saccardi et al. [44].

In fact, the frequency of 2.38% reported in this study is high compared to 1.3% found by Giannella et al. [43]. It represents approximately one tenth (21%) of that reported by Saccardi et al. [44]. This may be due to the fact that, in the present study, approximately 11% of patients were postmenopausal and endometrial biopsy was only done when there were macroscopically suspicious lesions. Giannella et al. working on the prediction of endometrial hyperplasia and cancer in pre-menopausal women with AUB had excluded postmenopausal women, who are at greatest risk of developing endometrial cancers [45-46]. On the other hand, the study by Saccardi et al. [44] which focused on predicting the risk of endometrial cancer based on the indication for diagnostic hysteroscopy was carried out on women in peri-menopause or menopause with a systematic endometrial biopsy, which could maximize the probability of finding cases of endometrial cancer.

Limitations of the study

The present study borders on having been a documentary retrospective. Therefore, it did not cover all possible variables in patients with. Anamnestic elements leading, for example, to non-structural causes could not be identified while a significant fraction of patients with AUB had no structural lesion on hysteroscopy. The non-systematic performance of histopathology and the lack of information about the economic level of the patients are others limitations linked to the retrospective nature of the present study.

Conclusion

In this study, endometrial polyps and myomas were the most common findings at hysteroscopy in the presence of AUB. HMB ≤8d and HMB >8d which are the main manifestations, are associated symptoms in the discovery of polyps and myomas in women aged 35 and over. Thus, for our environment where hysteroscopy is not accessible to many patients, in any case of AUB, we must raise polyps and myomas as the first hypotheses and systematically search them using ultrasound which is an available tool.

Conflict of interest

The authors declare that they have no conflict of interest.

Author contributions

- Mindombe Moleko Patrick: participation in design, statistical analyzes and writing

- Lumingu Lusakueno Armand: participation in the design
- Biawila Lusila Bruno: participation in the design
- Kusuman Amos: participation in design and writing
- Odimba Mpoy Jules: participation in the design
- Kintoki Makundika Olivier: participation in the design
- Ndesanzim Otem Christian: participation in the design
- Nzau-Ngoma Emmanuel: research design, statistical analysis and validation of the final version of the manuscript.

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Tables and figure:

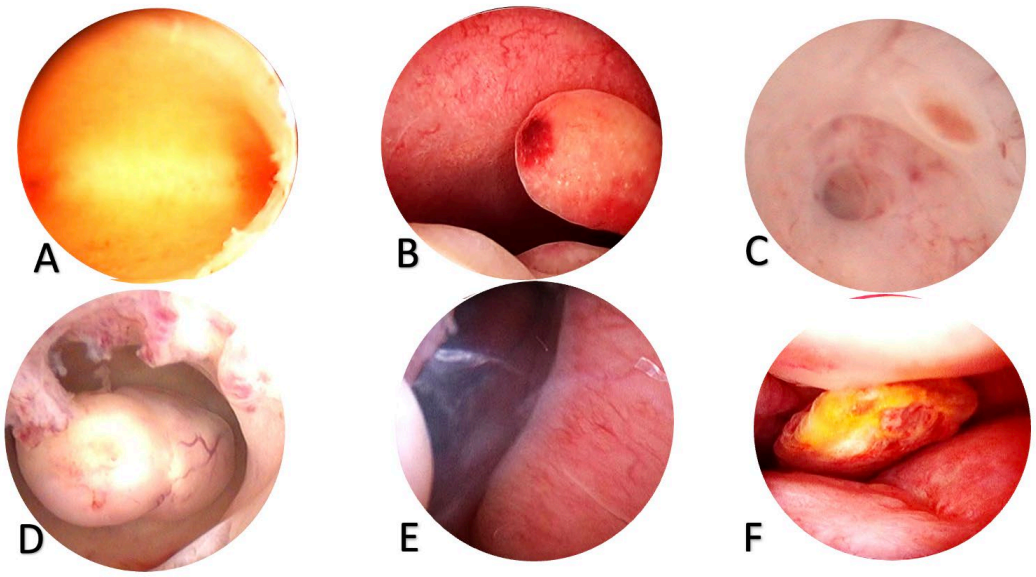

Figure 1. Findings in hysteroscopy

A. Negative hysteroscopic view, B. Endometrial polyps, C. Adenomyosis (we see a nest and a hole leading into the depth of the myometrium, D. Uterine myoma, E. Hypertrophy of the endometrium with a polypoid appearance of the endometrium, F. Adenocarcinoma of the endometrium (we have a polypoid mass with an area of necrosis).

Table 1: Sociodemographic and clinical characteristics of women with AUB

Variables	Numbers (n=151)	Percentage	Median (min, max)	Mean ± SD
Age (y.o)				37,53±10,89
< 25	17	11,26		
25-34	43	28,48		
35-44	55	36,42		
≥ 45	36	23,84		
Marital status				
Single	60	39,74		
Divorced	1	0,66		
Maried	86	56,95		
Widow	4	2,65		
Level of education				
Primary school	2	1,32		
High school	27	17,88		
Academic	122	80,80		
Parity			0 (0, 7)	
0	77	51,00		
1 - 2	37	24,50		
≥ 3	37	24,50		
Gestity			2 (0, 9)	
0	48	31,79		
1 - 2	49	32,45		
≥ 3	54	35,76		
Abortion			1 (0, 6)	
0	74	49,00		
1	41	27,15		
≥ 2	36	23,85		
Post menopausal				
No	135	89,40		
Yes	16	10,60		
H/o Uterine surgery				
Non	112	74,17		
Oui	39	25,83		
Type of surgery				
C- Section	17	43,59		
Myomectomy	21	53,85		
Polypectomy	1	2,56		
Type of bleeding				
HMB >8d	33	21,85		
HMB ≤8d	82	54,31		
IMB	36	23,84		

Table 2: Diagnosis made at hysteroscopy in patients with AUB

Discoveries at hysteroscopy	Numbers	Percentage
Adenocarcinoma	4	2.38
Adenomyosis	15	8.93
Endometrial atrophy	11	6.55
Chronic endometritis	4	2.38
Endometrial hypertrophy	12	7.14
Isthmocele	10	5.95
Myoma	40	23.81
Endometrial polyp	51	30.36
Endocervical polyp	1	0.60
Normal	20	11.90
Total	168	100

Table 3: Association between Polyps and some variables

Variables	n	Polyps		raw gold	CI 95%	p-value
		No*	Yes			
Age (y.o)	68					0.410
≤ 34	-	13 (33.3%)	26(66.7%)			
≥ 35	-	7 (24.1%)	22 (75.9%)			
Nulliparity	68					0.776
No	-	8 (27.6%)	21 (72.4%)			
Yes	-	12 (30.8%)	27 (69.2%)			
Nulligestity	68					0.363
No	-	11 (25.6%)	32 (74.4%)			
Yes	-	9 (36.0%)	16 (64.0%)			
Type of bleeding	68					
IMB	-	7 (46.7%)	8 (53.3%)	1		
HMB >8d	-	1 (9.1%)	10 (90.9%)	8.75	0.884 - 86.603	0.084**
HMB ≤8d	-	12 (28.6%)	30 (71.4%)	2.18	0.649-7.375	0.202

(*) Women who had a normal hysteroscopy (**) Fisher's Exact Test

Table 4: Association between myomas and some variables

Variables	n	Myomas		raw gold	CI 95%	p-value
		No*	Yes			
Age (y.o)	54					
≤ 34	-	13 (52.0%)	12 (48.0%)	1		
35-44	-	5 (27.7%)	17(77.3%)	3.6	1.03 - 13.10	0.039
≥ 45	-	2 (28.6%)	5(71.4%)	2.7	0.44 - 16.68	0.402**
Nulliparity	54					0.898
No	-	8 (38.1%)	13 (61.9%)			
Yes	-	12 (36.4%)	21 (63.6%)			
Nulligestity	54					0.480
No	-	11(33.3%)	22 (66.7%)			
Yes	-	9 (42.9%)	12 (57.1%)			
Type of bleeding	54					
IMB	-	7 (87.5%)	1 (12.5%)	1		
HMB >8d	-	1 (7.1%)	13 (92.9%)	91.00	4.90 - 1687.48	0.000**
HMB ≤8d	-	12 (37.5%)	20 (62.5%)	11.66	1.27 - 106.79	0.011

(*) Women who had a normal hysteroscopy

(**) Fisher's Exact Test