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The frequency of structural causes (PALM) according to figo palm-coein classification in patients undergoing hysterectomy for abnormal uterine bleeding

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ABSTRACT

Aims: We aimed to determine the frequency of the PALM group in the FIGO PALM-COEIN system of patients who were operated for AUB, and to evaluate and analyze our data in our clinic.

Methods: In a retrospective study, data were obtained for nonpregnant women aged 18–55 years who underwent hysterectomy for AUB at a center in Turkey in 2017-2022. The patients were retrospectively classified according to the PALM-COEIN system.

Results: A total of 847 women were included. Leiomyoma was the most common pathology result in only 377 (44.5%) patients. The second most common pathology result was adenomyosis and leiomyoma coexistence in 132 (15.6%) patients. The third most common pathology result was 62 (7.3%) adenomyosis.

Conclusion: In addition to the combined use of FİGO AUB system 1 and 2 in AUB, the notation grouping may be useful for clinicians in the management of AUB.

Keywords: Abnormal uterine bleeding, PALM-COEIN, notation

INTRODUCTION

Abnormal uterine hemorrhage (AUB) is a disease with a prevalence of 10-30% in women of reproductive age.[1] Due to its high incidence, it is a health problem that has been studied extensively. Various terminologies have been defined to identify the symptoms and causes of AUB, such as metrorrhagia, menorrhagia, menometrorrhagia, polymenorrhea, hypermenorrhea, and dysfunctional uterine bleeding.[2] The terms that make up the classical terminology of AUB have been used over the years and their use is no longer recommended.[3] For example, there are some contradictions even as to whether menorrhagia is a symptom or a diagnosis. In the study, in which 100 studies were examined, menorrhagia was accepted as a symptom in 3/4 of the studies, while it was accepted as a diagnosis in the others.[4] Due to these situations, there are long-term studies on the classification system accepted all over the world for AUB. One of the biggest reasons for this is that terms such as menorrhagia and metrorrhagia used in classical terminology cannot give clear information about the underlying pathologies. In addition, these terms are not sufficient to fully cover the situation encountered, both as a condition experienced by women and as medical diagnoses made by clinicians.[5]

AUB can be a symptom of many pathologies in women of reproductive age. Various terms and symptoms such as menorrhagia, metrorrhagia, polymenorrhea, hypermenorrhea, oligomenorrhea, and dysfunctional uterine bleeding have been used to describe AUB. Many of these terms are considered to be confusing and inadequate for identifying and classifying etiologies.[6] The etiology of AUB is not described by the physicians with the same terminology or the presence of more than one possible cause in a patient; This makes it difficult to reach a consensus on this issue both among clinicians and in the literature.

There is consensus that some traditional AUB terms should be abandoned because they are confusing and/

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or poorly defined.[6-8] Because of this confusion, FIGO first co-published the FIGO AUB System 1 for the identification of symptoms in normal and AUB patients in reproductive years and the FIGO AUB System 2-PALM-COEIN for the identification of the reasons of AUB in 2011.[9] classification was established in 2011 by the International Federation of Gynecology and Obstetrics (FIGO) Menstrual Disorders Group (FMDG) with the support of researchers from 6 continents and over 17 countries in order to standardize the terminology used in AUB in non-pregnant women in reproductive age.[5] In our study, we aimed to determine the frequency of the PALM group in the FIGO PALM-COEIN system of patients who were operated for AUB, and to evaluate and analyze our data in our clinic.

FIGO Abnormal Uterine Bleeding in 2011; It is classified as Terminology and Definitions (FIGO-AUB System 1). He classified the reasons as PALM-COEIN system (FIGO-AUB System 2). Later, in 2018, the classifications remained the same, but their contents were revised. In this revision of FIGO AUB System 1, the definition of irregularity has been changed . In this revision of FIGO AUB system 2 The basic/core classification system is almost unchanged and is presented. Category N has undergone a change from "not yet classified" to "not otherwise classified" as we cannot be certain which, if any, of these entities will ultimately be placed in a unique category.[11] The aim of our study is to determine the frequency of organic pathologies that cause abnormal uterine bleeding and to determine how often they combine.

METHODS

This study was approved by University of Health Sciences Adana City Training and Research Hospital Clinical Researches Ethics Committee (Date: 03.11.2022, Decision No:2225). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. Since our study was retrospective, we did not obtain informed consent.

In this retrospective study, the data of 1158 patients aged 18-55 years who were operated for hysterectomy at Health Sciences University Adana City Training and Research Hospital between December 1, 2017 and December 1, 2022 were analyzed. Of 1158 patients, 847 patients had undergone hysterectomy due to PALM, and 311 patients had undergone hysterectomy due to COEIN. Since the FIGO PALM COEIN Classification examines abnormal uterine bleeding in women of reproductive age, patients with postmenopausal bleeding were not included in the study. Patients in the COEIN bleeding disorder class, such as women using systemic hormonal contraception or other hormonal therapy, were not included in the study.

Statistical Analysis

Demographic data of patients such as age, gravida, parity, body mass index was recorded. Then, Patients' data were scanned for structural pathologies classified according to the PALM group. Adana City Hospital data system was used to collect retrospective data. IBM SPSS V23 was used to analyze data. The comparison of categorical variables according to groups was analyzed with the chi-square test. Descriptive statistics were performed for all variables. Because the data were not normally distributed, the median was reported as [Q1-Q3]. The results of the analysis were used frequency (percent) for categorical variables. We took significance level as $p<0.050$.

RESULTS

During the study period, 1158 hysterectomies were performed. Among these, 847 patients had undergone hysterectomy for PALM and was enrolled in the research. The mean age of the participants was 45.44±3.89 years, the mean gravida was 2.84±1.65 and the mean parity was 2 2.16±1.88. The mean BMI was 29.33±5.13 kg/m^2 (Table 1).

Table 1: The Sociodemographic and obstetric characteristics of the study participants

Maternal age (years) (mean ± SD)	45.44 ± 3.89
Body-mass index (kg/m^2) (mean ± SD)	29.33 ± 5.13
Gravida (mean ± SD)	2.84±1.65
Parity (mean ± SD)	2.16 ± 1.88

Myoma incidence was found to be the most common pathology with 75.44%. Adenomyosis was evaluated as the second most common pathology with 31.28%. Polyp was found as the third most common pathology with 20.66% (Table 2). The prevalence of structural causes in pathology results are shown in Table 3.

When the pathology results of 847 patients who had hysterectomy were analyzed about coexistence of pathology results, leiomyoma was the most common pathology result in only 377 (44.5%) patients. The second most common pathology result was adenomyosis and leiomyoma coexistence in 132 (15.6%) patients. The third most common pathology result was 62 (7.3%) adenomyosis. When the other pathology results were examined: Polyp in 63 (7.5%) patients; polyp and malignancy coexistence in 14 (1.7%) patients; polyp

and leiomyoma coexistence in 53 (6.4%) patients; polyp and adenomyosis coexistence in 16 (1.9%) patients; polyp, leiomyoma and malignancy coexistence in 4 (0.5%) patients; polyps, adenomyosis and malignancy coexistence in 1 (0.1%) patient; polyp, adenomyosis and leiomyoma coexistence in 22 (2.6%) patients; polyps, adenomyosis and leiomyoma and malignancy coexistence in 2 (0.2%) patients; adenomyosis and malignancy coexistence in 15 (1.8%) patients; adenomyosis, leiomyoma and malignancy coexistence in 15 (1.8%) patients; leiomyoma and malignancy coexistence in 34 (4%) patients and malignancy in 37 (4.4%) patients was detected (Table 3).

Table 2. Distribution of coexistence of pathology results according to the PALM-COEIN system.-1

	n=847 (%)
P	63 (7.5%)
PM	14 (1.7%)
PL	53 (6.3%)
PA	16 (1.9%)
PLM	4 (0.5%)
PAM	1 (0.1%)
PAL	22 (2.6%)
PALM	2 (0.2%)
A	62 (7.3%)
AL	132 (15.6%)
AM	15 (1.8%)
ALM	15 (1.8%)
L	377 (44.5%)
LM	34 (4%)
M	37 (4.4%)

Abbreviations: P, polyp. A, adenomyosis; L, leiomyoma; M, malignancy and hyperplasia. a Values are given as number (percentage).

Table 3. Frequency of structural causes in patients with hysterectoy.

	n (%)
Polyp	175 (20.66%)
Adenomyosis	265 (31.28%)
Leiomyoma	639 (71.44%)
Malignancy and hyperplasia	122 (14.4%)

DISCUSSION

In AUB FİGO 1 system, the four parameters used to define normal uterine bleeding are frequency, regularity, duration, and volume.[7,8,10,11] The FIGO AUB System 2 enables the differentiation of potential causes contributing to the patient's AUB symptoms. It consists of two parts: structural (PALM) and unstructured (COEIN).[10] PALM classification, in which structural pathologies are classified, is performed by imaging method and/or histopathological. We also analyzed hysterectomy operations performed for structural reasons in our clinic according to PALM classification.

Uterine leiomyomas are cited as the most common indication in approximately one-third of all hysterectomies.[12] In our study, leiomyoma was the most common pathology result in only 377 (44.5%) patients. The most common pelvic neoplasms in women are leiomyomas.[13,14] The most common complaints in women with fibroids are AUB and cramps.[15] In our study, the second most common pathology result was adenomyosis and leiomyoma coexistence in 132 (15.6%) patients. In the study of Ferraz et al.,[16] adenomyosis and leiomyoma were mostly coexisted with 65.4% in hysterectomy materials. We found that leiomyoma and malignancy coexistence was in 34 (4%) patients. Studziński et al.[17] also found that leiomyoma was coexistence with endometrial cancer in 22 cases. In our study, polyp and leiomyoma coexistence was found in 53 (6.4%) patients. In the study of Kınay et al.,[18] the incidence of endometrial polyps in cases with leiomyoma was found to be 20.1% (n=155). The frequent association of leiomyoma with other pathologies shows that it is important to investigate other organic pathologies in patients with leiomyoma.

The lifetime prevalence of endometrial polyps ranges from 8% to 35%, and the incidence increases with age.[19] Similarly, polyps were detected in 20.66% (n=175) of the patients included in our study, and it is seen as the third most common cause of structural AUB after leiomyomas and adenomyosis. Although polyps are usually asymptomatic, they can be the cause of AUB. We think that endometrial polyp is common and attention should be paid to its investigation.

The prevalence of adenomyosis varies between 5% and 70% and its relationship with AUB is not clear.[20] In our study, adenomyosis was detected in 31.28% (n=265) of the patients who were operated for AUB. The fact that adenomyosis is common both alone and frequently accompanied by leimyoma shows that clinicians should suspect adenomyosis in patients with abnormal uterine bleeding.

Many premalignant conditions (hyperplasia) and malignancies can cause AUB. While the rate of malignancy or hyperplasia was 6% in the histopathological examination of patients with AUB in the study of Wynants et al.,[21] this rate was 26% in the study of Vijayaraghavan et al.[22] In our study, 122 women

with hyperplasia or malignancy were identified. It was seen in 14.40% of our patients included in the study as a percentage. It should be kept in mind that malignancy or hyperplasia may frequently occur in patients with abnormal uterine bleeding.

AUB in women of reproductive age is a symptom of any of several pathological conditions. The accepted method for classifying such patients in the literature were FIGO System 1 and the PALM-COEIN classifications. In our study, we also grouped hysterectomy materials performed for structural reasons in our clinic according to the palm classification, but in most cases, there was no single pathology result. The limitations of our study were that it was retrospective and only the data were analyzed based on the pathology results. In addition to the combined use of FIGO AUB system 1 and 2 in AUB, we think that the notation grouping suggested by Munro et al.[9] may be useful for clinicians in the management of AUB.

CONCLUSION

When we examined the structural causes of abnormal uterine bleeding, it was observed that the cause of bleeding in the patients in our study was generally due to more than one organic cause. In other words, even if we detect an organic cause in a patient with abnormal uterine bleeding, we must keep in mind that we may encounter another organic cause.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was initiated with the approval of the University of Health Sciences Adana City Training and Research Hospital Clinical Researches Ethics Committee (Date: 03.11.2022, Decision No:2225).

Informed Consent

Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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