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Original Article

Hysteroscopic Findings in Women With Menorrhagia

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ABSTRACT **Study Objective:** To describe the hysteroscopic findings in patients complaining of menorrhagia to establish any significant association between menorrhagia and benign/malignant intrauterine disorders.
Design: Prospective cohort study (Canadian Task Force classification II).
Setting: University La Sapienza, Rome, Italy.
Patients: One hundred eighteen premenopausal women undergoing office hysteroscopy for menorrhagia (group A) and 344 premenopausal patients undergoing office hysteroscopy for other indications (noncyclic abnormal uterine bleeding, infertility, ultrasonographic abnormalities, etc) (group B).
Interventions: Office hysteroscopy.
Measurement and Main Results: Data on the prevalence of hysteroscopic findings (cervical polyps, endometrial polyps, submucous myomas, low-grade hyperplasia and high-grade hyperplasia/endometrial carcinoma) were compared between group A and group B. The total prevalence, as well as the prevalence of type 0 and type I myomas (totally or >50% intracavitary, respectively), and the mean number per patients with submucous myomas was significantly higher in group A compared with group B ($p = .0001$, $p = .024$, and $p = .017$, respectively). Multivariable logistic regression analysis showed a statistically significant association between age (odds ratio 4.15, 95% confidence interval 1.55–11.1 in the 40- to 49-year age group), presence of submucous myomas (odds ratio 2.76, 95% confidence interval 1.52–5.00), and menorrhagia.
Conclusions: Menorrhagia seems to be associated with aging, the presence and number of submucous myomas, and with the degree of their intracavitary development. Journal of Minimally Invasive Gynecology (2013) 20, 209–214 © 2013 AAGL. All rights reserved.

Keywords: Aging; Menorrhagia; Office hysteroscopy; Submucous myoma

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Menorrhagia is subjectively defined as a heavy menstrual blood loss, occurring over several consecutive cycles, either directly measured or observed, referred, or perceived by the patient [1]. Objectively, the term *menorrhagia* means prolonged menses lasting more than 7 days or a menstrual bleeding exceeding 80 mL [2,3].

As far as symptoms are concerned, menorrhagia is often regarded as part of abnormal uterine bleeding (AUB), which has such a high prevalence as to be one of the most frequent reasons for gynecologic investigation. However, although the term AUB encompasses noncyclic and cyclic uterine bleeding, the term "*menorrhagia*" concerns only an excessive cyclic uterine bleeding that occurs at regular intervals over several cycles [4].

Menorrhagia can cause disturbances of the woman's social, occupational, or sexual life, concern about possible

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underlying serious disease (especially cancer), as well as medical risks such as chronic iron deficiency anemia [5]. It is estimated that approximately 30% of women complain of menorrhagia [6]. This pathologic condition is one of the most common reasons for visiting the gynecologist. It accounts for two thirds of all hysterectomies and most endoscopic endometrial destructive surgery [7], thus representing an important health care issue [3,8,9]. Menorrhagia may be caused by pelvic or systemic diseases, as well as iatrogenic factors (ie, intrauterine devices and use of anticoagulants) [3,8] and hereditary conditions [10]. Recently, some authors identified certain clinical conditions such as increased age, premenopausal leiomyomata, and endometrial polyps as menorrhagia-associated risk factors [11–13].

Traditionally, menorrhagia has been investigated with dilation and curettage, but there is now a trend toward minimally invasive techniques including ultrasound scanning, office hysteroscopy, and endometrial biopsy [9]. Although there is a great deal of literature on investigation for AUB, as well as its surgical treatment (ie, endometrial ablation, hysterectomy), limited research has been undertaken that specifically focuses on menorrhagia and none on the role of office hysteroscopy in the diagnostic workup. The aim of our study was to describe the hysteroscopic findings in a sequential cohort of women with menorrhagia who underwent office hysteroscopy, to establish any significant association between menorrhagia and endouterine disorders, as well as to estimate the risk of menorrhagia in patients with intrauterine diseases.

Materials and Methods

Study Design and Population

From January 2009 to December 2009 all premenopausal women complaining of menorrhagia who had been referred to the Department of Woman Health Care, Unit of Minimally Invasive Surgery, University "La Sapienza," were invited to participate in the study. Premenopausal women were defined as those who had menstrual periods, were pregnant, or were breast-feeding during the previous 12 months.

Women with systemic diseases, such as endocrinologic (ie, adrenal, parathyroid, and thyroid diseases) or hematologic disorders or who had used any hormonal medication or intrauterine contraceptives 2 months before the study, or who had been diagnosed with reproductive cancer were excluded from the study. Polycystic ovary syndrome and type II diabetes mellitus were not considered as exclusion criteria.

Strict criteria were used to distinguish patients with menorrhagia with other forms of AUB. The diagnosis of menorrhagia was performed by means of a pictorial blood loss assessment chart, adjusted to our needs [14] in patients describing a history of heavy menstrual blood loss over several consecutive cycles without any intermenstrual or postcoital bleeding [15]. A scoring system ranging from 1 to 10 was used, with 1 = slightly soiled tampon, 5 = moderately soiled, and 10 = heavily soiled. Towels were assigned ascending scores from 1 to 20. A total score more than 100 for each pictorial chart was meant as a confirmed diagnosis of menorrhagia.

Office Hysteroscopy

The hysteroscopic examination was preferentially scheduled during the proliferative phase of the menstrual cycle, when menorrhagia tended to be absent or reduced. Office hysteroscopy was performed with a 5-mm–diameter continuous-flow hysteroscope with oval profile, a 30-degree fore-oblique telescope, and a 5Fr operating channel (Office Continuous Flow Operative Hysteroscopy "size 5"; Karl Storz, Tuttlingen, Germany). Saline solution was used as distension medium (NaCl 0.9%), which was provided through an electronic system of irrigation/aspiration (Endomat; Karl Storz). A stable intrauterine pressure of approximately 40 mm Hg was obtained by setting the flow rate at 220 to 350 mL/min, the negative pressure suction on 0.2 bar, and the pressure of irrigation at 100 mm Hg. Neither analgesic nor anesthetic drugs were administered to the patients.

We defined hysteroscopic findings as the diagnostic impression on the basis of the appearance of the surface of the uterine cavity. We classified abnormal hysteroscopic findings in the following: cervical polyps, endometrial polyp, submucous myomas, low-grade endometrial hyperplasia, and high-grade endometrial hyperplasia/endometrial cancer.

Myomas were classified according to the Wamstaker classification [16] as type 0 (totally intracavitary), type I (<50% contained within the myometrium), and type II (>50% contained within the myometrium). Multiple and targeted endometrial biopsy specimens were obtained in the presence of low-grade and high-grade hyperplasia/endometrial carcinoma and sent for histopathologic analysis.

Polypectomy of polyps <2 cm, myomectomy of submucous myomas <1.0 cm, metroplasty of septa <0.5 mm, as well as synechiolysis of mild intrauterine adhesions were performed with miniaturized operative instruments during the same diagnostic procedure as already reported elsewhere [17]; otherwise, the patients were scheduled for an inpatient procedure under general anesthesia. Hysteroscopic findings needed to be confirmed by histologic analysis to be included in the statistical analysis.

Data Analysis

Patients affected by menorrhagia (group A) were then compared with a control group (group B) of premenopausal patients who had undergone hysteroscopy for other indications (ie, noncyclic AUB, abnormal ultrasound scanning results, infertility, etc), enrolled during the same study period. All data were analyzed with SPSS for Windows statistical software (Version 11.0; SPSS, Inc, Chicago, IL) and were expressed