



## Article Original

## Hysteroscopic Features of Endocavitary Lesions at CHRACERH, Cameroon

### *Aspects hystéroscopiques des lésions endocavitaires au CHRACERH, Cameroun*

Noa Ndoua Claude Cyrille<sup>a,b</sup>, Ayissi Nga Gaspard Grégory<sup>a</sup>, Metogo Junie<sup>a,b</sup>, Belinga Étienne<sup>a,b</sup>, Kasia Onana Yves Bertrand<sup>a,b</sup>, Mendibi Sandrine<sup>b</sup>, Kemfang Jean-Dupont<sup>a,b</sup>, Kasia Jean-Marie<sup>a,b</sup>.

## ABSTRACT

**Background.** Uterine cavity abnormalities are seen as a cause of infertility in around 10%-15% of women. In women with recurrent implantation failure abnormalities are found in up to 50% of the women, highlighting the crucial role of diagnostic hysteroscopy in the assessment of infertility. **Objective.** To describe endocavitary lesions of patients undergoing hysteroscopy at CHRACERH. **Patients and Methods.** We carried out a cross-sectional, retrospective study, over 2 years, from the 1<sup>st</sup> January 2016 to the 31<sup>st</sup> December 2017, with retrospective data collection in 110 women undergoing hysteroscopy for several indications. Hysteroscopy was performed in operation theatre by using a Bettocchi hysteroscope, which is a continuous flow panoramic rigid hysteroscope, 26 cm in length, 5 mm of outer diameter sheath and 0° fibroptic lens (Karl Storz Endoscopy, Utrecht, Netherlands). The distension of uterine cavity was achieved with normal saline. All procedures were done under rachianaesthesia. Statistical analysis were performed using the SPSS 20 software. **Results.** The mean age was  $39.3 \pm 7.8$  years, 20% of the studied population was obese and the mean BMI was  $28.7 \pm 4.1$ . Sexual transmitted infections (STI) was the major medical problem in these patients (17.3%) while myomectomy was the main surgical intervention practiced (23.7%). 35.5% of the studied population had a history of curettage. All the patients were infertile, and dysmenorrhea 10%, menorrhagia 7.3% and amenorrhea 6.4% were the main clinical symptoms. The main indications of hysteroscopy were sonographic suspicion of polyps (57.3%), myomas (40%) and intrauterine adhesions (21.8%). Hysteroscopic findings were polyps (52.7%), myomas (31.8), synechiae (21.8%), endometrial hyperplasia (7.3%), and uterine septum (2.7%). The total complication rate was 3.6%. The leading complication was intrauterine adhesions (1.8%), followed by infections (0.9%) and bleeding (0.9%). **Conclusion.** Hysteroscopy occupies a prominent place in the diagnosis of intrauterine pathology. The Hysteroscopic finding in our study related to infertility condition and the low complication rate showed the safeness of the procedure.

## RÉSUMÉ

**Contexte.** Les anomalies de la cavité utérine sont considérées comme une cause d'infertilité chez environ 10% à 15% des femmes infertiles. Et chez 50% des femmes avec échec d'implantation récurrent, sont mises en évidence des anomalies hystéroscopiques, soulignant son rôle crucial dans l'évaluation de l'infertilité. **Objectif.** Décrire les lésions endocavitaires des patientes ayant subi une hystéroscopie au CHRACERH. **Patients et méthodes.** Nous avons mené une étude transversale rétrospective, sur deux ans, du 1<sup>er</sup> janvier 2016 au 31 décembre 2017, avec collecte de données rétrospective chez 110 femmes soumises une hystéroscopie pour plusieurs indications. L'hystéroscopie était réalisée au bloc opératoire grâce à l'hystéroscope de Bettocchi, (hystéroscope rigide panoramique à flux continu de 26 cm de long, 5 mm de diamètre de gaine externe et 0° de lentille ; Karl Storz Endoscopy, Utrecht, Pays-Bas). La distension de la cavité utérine était faite avec une solution saline normale. Toutes les procédures ont été réalisées sous rachianesthésie. L'analyse statistique a été réalisée à l'aide du logiciel SPSS 20. **Résultats.** L'âge moyen était de  $39,3 \pm 7,8$  ans, 20% de la population étudiée était obèse et l'IMC moyen était de  $28,7 \pm 4,1$ . Les infections sexuellement transmissibles (IST) constituaient le problème médical majeur chez ces patients (17,3%) alors que la principale intervention chirurgicale pratiquée était la myomectomie (23,7%). 35,5% de la population étudiée avait des antécédents de curetage. Tous les patients étaient infertiles et la dysménorrhée 10%, la ménorragie 7,3% et l'aménorrhée 6,4% étaient les principaux symptômes cliniques. Les principales indications de l'hystéroscopie étaient la suspicion échographique des polypes (57,3%), des myomes (40%) et des adhérences intra-utérines (21,8%). Les troubles hystéroscopiques étaient les polypes (52,7%), les myomes (31,8), les synéchies (21,8%), l'hyperplasie de l'endomètre (7,3%) et les septums utérins (2,7%). Le taux de complications total était de 3,6%. Les principales complications étaient les adhérences intra-utérines (1,8%), suivies des infections (0,9%) et des saignements (0,9%). **Conclusion.** L'hystéroscopie occupe une place prépondérante dans le diagnostic de la pathologie intra-utérine. Les lésions hystéroscopiques dans notre étude étaient liées l'infertilité et le faible taux de complications rehausse la sécurité de la procédure.

<sup>a</sup> Department of Gynecology and Obstetrics Faculty of Medicine and Biomedical Sciences, University of Yaounde I, Yaounde, Cameroon

<sup>b</sup> Hospital Center for Research and Application in Endoscopic Surgery and Human Reproduction, Yaounde, Cameroon

**Corresponding Author:**

Noa Ndoua Claude Cyrille, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Yaounde, Cameroon. Email: [claudenoa@yahoo.co.uk](mailto:claudenoa@yahoo.co.uk)

**Keys words:** Diagnostic Hysteroscopy, Operative Hysteroscopy, Abnormal uterine bleeding, Polyps.

**Mots clés:** Hystéroscopie diagnostique, hystéroscopie opératoire, saignement utérins anormaux, polypes.

## INTRODUCTION

The development of hysteroscopy has provided a minimally invasive approach to common gynecologic problems, such as abnormal uterine bleeding. A hysteroscope is a telescope that is inserted into the uterus via the vagina and cervix to visualize the endometrial cavity, as well as the tubal ostia, endocervical canal, cervix, and vagina. Hysteroscopy can be performed for diagnostic or therapeutic indications. Diagnostic hysteroscopy is a commonly performed gynecologic procedure to evaluate the endometrial cavity. Broadly, two systems of diagnostic hysteroscopy exist: panoramic (also known as direct optical) and contact (also known as contact microhysteroscopy). Modern references to hysteroscopy usually imply a panoramic technique in which the uterine cavity is distended with liquid or gas and evaluated with the hysteroscope. Contact hysteroscopy is a related procedure in which no distending media is used and the hysteroscope is passed directly into the uterus and put in gentle contact with the endometrial lining to obtain maximum magnification.

Uterine cavity abnormalities are seen as a cause of infertility in around 10%-15% of women. In women with recurrent implantation failure abnormalities are found in up to 50% of the women (1). The major advantage of the hysteroscopic evaluation is the information on the accessibility of the cavity, important for insemination or embryo transfer and the direct visualization of the endometrium and the cavity form. As a result, Hysteroscopy increase clinical pregnancy rate and live birth rate in IVF patients (2,3).

Findings are categorized into major or minor abnormalities according to their influence on the structural change of the cavity (4). Major abnormalities are arbitrarily defined as those that structurally change the normal hysteroscopic uterine anatomy, like congenital malformations starting from U2 of the new ESHRE/ESGE classification, myoma, large polyps, adhesions and necrotic tissue (5). Minor abnormalities or subtle lesions are changes in the uterine cavity without significant anatomical deformation. The pathological significance of those findings still has to be proven, but for research purposes, they should be handled differently than the normal and major findings. Examples are the diffuse polyposis, endometrial hypervascularization, strawberry pattern, mucosal elevation, endometrial defects and the subtle cavity malformation classified as U1(5).

In Cameroon, no studies report hysteroscopic findings in women undergoing diagnostic and operative hysteroscopy. To fill this gap, we in this pioneer study report hysteroscopic features of endocavitary lesions in women undergoing diagnostic or operative hysteroscopy at the Hospital Center for Research and Application in Endoscopic Surgery and Human Reproduction (CHRACERH) in Yaoundé-Cameroon.

## PATIENTS AND METHODS

### Methods

We carried out a cross-sectional, retrospective study, over 2 years, from the 1<sup>st</sup> January 2016 to the 31<sup>st</sup> December 2017. The study per se was done through 4 months period, from the 1<sup>st</sup> September to the 31<sup>st</sup> December 2017, at the Hospital Center for Research and Application in Endoscopic Surgery and Human Reproduction (CHRACERH) in Yaounde-Cameroon.

Data (age, body mass index, past medical history, indications of hysteroscopy, hysteroscopic finding and complications) were collected from the records of patients undergoing diagnostic hysteroscopy for several indications at CHRACERH. An authorization was obtained from the CHRACERH ethics committee

### Patients

One hundred and ten records of infertile women were enrolled in this study. A medical history was taken, including: detailed questions regarding symptoms; obstetrical and surgical history, medical comorbidities, medications, and allergies. A complete pelvic and general physical examination was performed, with particular attention paid to the size and mobility of the uterus and the patency of the cervix. The hysteroscopic indications were made in front of a bundle of clinical and radiological (ultrasound or saline infusion sonography) arguments by the gynecologist. Patients were counseled about hysteroscopy, and informed regarding possible complications. Hysteroscopy was done during the follicular phase of the menstrual cycle, i.e. between the 6<sup>th</sup> and the 11<sup>th</sup> day for a 28-day cycle. Patients were in the gynecological position in the operating room under rachianaesthesia. After cleaning the external genitalia, vagina and cervix with an antiseptic solution (10% povidone-iodine), sterile fields were placed; the first step consisted of diagnostic hysteroscopy with a Bettocchi ( a continuous flow panoramic rigid hysteroscope, 26 cm in length, 5 mm of outer diameter sheath and 0° fibroptic lens KARL STORZ Endoscopy, Utrecht, Netherlands). The distension of the uterine cavity was performed with normal saline prior to the uterine cavity evaluation. The second step consisted of an operative hysteroscopy if the indication was made. After dilation of the cervix with Hegar's candles, the resection of the polyps, myomas, synechiae or the sampling was done with the chisel or the resectoscope. All the samples removed were sent to the pathologist for analysis. First-step analgesics, non-steroidal anti-inflammatory and levonorgestrel-ethinylestradiol tablets were given to the patients for the postoperative pain management and to increase endometrial thickness.

### Statistical analysis

Statistical analysis were done using the SPSS 20 software.

## RESULTS

### Age and body mass index (BMI)

The mean age was  $39.3 \pm 7.8$  years with a minimum at 21 years, and a maximum at 65 years. The mean body mass index was  $28.7 \pm 4.1$ . Twenty per cent (20%) of the study population was obese (BMI > 30 kg/m<sup>2</sup>). Table I

**Table I: Distribution of the study population according to age and BMI (N=110)**

Parameters	Minimum	Maximum	Mean
Age	21.0	65.0	39.3 ± 7.8
BMI	19.8	39.6	28.7 ± 4.1

### Past medical history

According to the past medical history, sexual transmitted infection history was present in 17.3% of the population; 35.5% of the patients had a history of curettage and the main surgery performed in these patients was myomectomy 23.7%.

**Table II: Distribution of the study population according to the past medical history (N=110)**

Characteristics	n	%
Nulliparous	74	67.3
Primiparous	25	22.7
Multiparous	11	10
Obesity	22	20
Hypertension	3	2.7
Diabetes	2	1.8
STI	19	17.3
Myomas	17	15.5
Menopause	9	8.2
Myomectomy	26	23.7
Laparoscopy	14	12.7
Hysteroscopy	6	5.4
Salpingectomy	5	4.5
Curettage	39	35.5

### Clinical symptoms

Except infertility and desire of conception that was present in all patients, abnormal uterine bleeding (AUB) (10%) and dysmenorrhea (10%), were the most common symptoms in our study population

**Table III: Clinical symptoms (N=110)**

Characteristic	n	%
Dysmenorrhea	11	10
Menorrhagia	8	7.3
Amenorrhea	7	6.4
Dyspareunia	5	4.5
Oligomenorrhea	3	2.7
Pelvic pains	1	0.9

### Hysteroscopy indications

The commonest indications of hysteroscopy were polyps (57.3%), Myomas (40%) and intrauterine adhesions (16.3%)

**Table IV: Hysteroscopy indications (N= 110)**

Indications	n	Percentage (%)
Polyps	63	57.3

Myomas	44	40
Synechia	18	16.4
Endometrial thickening	5	4.5
Calcifications	3	2.7
Bicornuate uterus	2	1.8

### Hysteroscopic findings

The most common finding at hysteroscopy were in ascending order, polyps (52.7%), myomas (31.8%) and intrauterine adhesions (21.8%)

**Table V: Hysteroscopic findings (N=10)**

Findings	n	%
Polyps	58	52.7
Myomas	35	31.8
Synechia	24	21.8
Endometrial hyperplasia	8	7.3
Uterine septum	3	2.7
Endometrial atrophy	3	2.7

### Complications

The total complication rate was 3.6%. The leading complication was Asherman syndrome (1.8%), Followed by infections (0.9%) and Bleeding (0.9%).

**Table VI: Complications (N=10)**

Complications	n	%
Intrauterine adhesions	2	1.8
Infections	1	0.9
Bleeding	1	0.9
Perforations	0	0

## DISCUSSION

We investigated about hysteroscopic indications, findings and complications in a population of 110 infertile women who undergone diagnostic and operative hysteroscopy at the Hospital Center for Research and Application in Endoscopic Surgery and Human Reproduction in Yaounde-Cameroon.

The mean age, which was  $39.3 \pm 7.8$  years, showed that our population consisted in elderly women. Indeed, advanced reproductive age is associated with a decrease of ovarian reserve, alteration of tubal functions and with a higher risk of chromosomal abnormality, thus may explain fertility problems in these patients (6–8). Twenty per cent (20%) of our study population was obese, and the mean BMI was  $28.7 \pm 4.1$ . It is known that obesity has detrimental influences on all systems, including reproductive health. The association between obesity and infertility is well documented and obese or overweight women have poor reproductive outcomes in comparison to the non-obese one (9).

According to the past medical history, sexual transmitted infection history was present in 17.3% of the population; 35.5% of the patients had a history of curettage and the main surgery performed in these patients was myomectomy (23.7%). These preponderant but not exhaustive elements underscore the importance of patients' pathways in the probable occurrence of infertility. Indeed, STIs especially Chlamydia, laparotomy myomectomy and the notion of curettage are

all infertility factors in these women, involving alteration of tubal function, occurrence of pelvic adhesions and intra uterine adhesions (10–12).

Except infertility and desire of conception that was present in all patients, abnormal uterine bleeding (AUB) (10%) and dysmenorrhea (10%), were the most common symptoms in our study population, thus justifying the most frequent indications of hysteroscopy posed which were polyp(57,3%), myomas(40%) and intrauterine adhesion (16,4%) suspicion. Similar data have been found by Kayatas et al in 5474 patients undergoing diagnostic or operative hysteroscopy, with abnormal uterine bleeding as the commonest indication of hysteroscopy (40 %) (13). In the same vein, Pato-Mosquera et al in 904 patients found that the most frequent indication of hysteroscopy was sonographic suspicion of polyp both in premenopausal and postmenopausal women, 75% and 71.2% respectively (14). In view of these data thus obtained, we can say that they are in line with those of the literature, which states that AUB is probably the most common abnormal condition in gynecological practice, especially for women over the age of 45 years old, and it also affects almost 25% of reproductive aged women (15).

Hysteroscopic findings were in adequation with the indications. However, we found a less percentage of polyps (52.7% vs 57.3%) and myomas (31.8%-40%), and a greater percentage of intrauterine adhesions compare to the indications (21.8%- 16.4%). Thus suggesting that polyps and myomas are overdiagnosed by sonographic exams while intrauterine adhesions are underdiagnosed. This could be the fact of increased uterine mucosal folds which can be mistaken to small polyps or myomas by and ultrasound operator thus raising the operator-dependent nature of these exams (16). In the same vein, mild synechiae are not often seen at the radiological assessment (12). Alkhateeb et al had similar data in 245 infertile patients with recurrent IVF embryo transfer failures and conclude that such women should be reevaluated using hysteroscopy prior to further commencing IVF-embryo transfer cycles (17). Daniilidis et al, summarizing hysteroscopic findings in women with AUB, assumed that the most frequent finding in these patients are submucous myomas, polyps, and endometrial hyperplasia. Moreover he said that "diagnostic hysteroscopy as a method is even more valuable and with greater success rates, in the identification of AUB in perimenopausal and postmenopausal women with no specific risk of cancer progression"(15).

Hysteroscopic findings in our infertile population highlights the crucial role of this exam in the assessment of infertility. Although WHO recommend hysterosalpingography (HSG) to all infertile women to evaluate intrauterine anomalies, hysteroscopy has emerged as the gold standard in the evaluation of the

intrauterine cavity during the last decades. Barati et al. investigating women with unexplained infertility and women with infertility because of uterine factor, either by TVS and HSG, or by TVS, HSG, and hysteroscopy, showed 38.8% positive finding in office hysteroscopy despite of normal TVS and HSG. He concluded that office hysteroscopy should be a part of routine work in the evaluation of infertile women (15). Koskas et al. evaluated hysteroscopically 556 infertile women and found that first-line office hysteroscopy for infertility showed abnormal findings which ranged from 30% at women 30 years old to more than 60% at women more than 42 years old (18). In their systemic review about the effectiveness of hysteroscopy in subfertile women without other gynecological symptoms, Bosteels et al detected that removal of endometrial polyps doubles the pregnancy rate compared with diagnostic hysteroscopy and polyp biopsy in women who undergo intrauterine insemination (IUI) (19). They also mentioned that diagnostic hysteroscopy in the cycle preceding subsequent IVF attempt almost doubles the pregnancy rates in women with at least two failed IVF attempts in comparison with women starting IVF immediately. Despite this, the debate regarding the value of routine hysteroscopy before an in vitro fertilization (IVF) attempt is still relevant.

The complications rate in our study population was low (3.6%), and the commonest one was Asherman syndrome (n = 2). Kayatas et al had similar results with a complication rate of 0.27% in 5474 women. They also found as in other studies a greater rate of complication in operative hysteroscopy in comparison with diagnostic hysteroscopy. They reported that training and experience of the surgeon are not the only factors that affect the safety of the procedure. Working with the experienced anesthesiologist who knows good fluid management is also important for the safety. According to the American College of Obstetricians and Gynecologist (ACOG) Hysteroscopy is a safe procedure and this statement can be supported by Aydeniz et al who found a complication rate of 0.22% in 21 676 women undergoing hysteroscopy (20).

## CONCLUSION

Our study suggests that hysteroscopy occupies a prominent place in the diagnosis of intrauterine pathology, especially in context of infertility. The most common indications in our study related to AUB, and corresponded to a close degree to the hysteroscopic findings, thus going in the direction of the literature that states that submucosal myomas, polyps and hyperplasia are the most frequent hysteroscopic findings. The complications rate in our study was low, showing the safety of the procedure when balancing with its benefits.

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