

Epidemiological and Clinical Pattern of Patients with Female Infertility Prior Hysteroscopy at Yaoundé

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Abstract

Introduction: Intrauterine lesions are frequently observed in infertile women. Hysteroscopy is a key diagnostic and therapeutic tool for these lesions, underlining its pivotal role in infertility management. The main objective of our study was to determine the clinical profile of patients with female infertility due to uterine factors awaiting hysteroscopy in the Gynecological Endoscopic Surgery and Human Reproduction Teaching Hospital, Yaoundé. **Methods and Materials:** We conducted a cross-sectional descriptive study on women awaiting hysteroscopy during the period January 2016 - June 2023. **Results:** We retained 126 cases. The mean age of the patients was 37.9 years \pm 5.5 years. The most common clinical symptoms reported were dysmenorrhea (41.3%), menorrhagia (27.8%), dyspareunia (18.3%), and amenorrhea (11.1%). Regarding past surgical history, we reported myomectomy (27.8%), polypectomy (1.6%), synechiae adhesiolysis (3.2%), and uterine septum resection (0.8%). Secondary infertility was predominant (73%) with a mean duration of 7.8 years. The main intracavitary anomalies observed were fibroids (65%), polyps (59.5%), and intrauterine adhesions (13.9%). **Conclusion:** Patients presenting with female infertility with uterine factors were young, having a long-lasting secondary infertility. Main intracavitary lesions included fibroids, polyps, and intrauterine adhesions.

Keywords

Hysteroscopy, Female Infertility, Uterine Factor, Yaoundé

1. Introduction

Worldwide, infertility concerns approximately 15% of couples of reproductive age [1]-[3]. The causes of infertility are divided into female, male, mixed, and idiopathic causes.

In Cameroon, a previous study revealed that the etiology of infertility in our population was predominantly female, accounting for 177/406 cases (43.6%), followed by male factors in 114/406 cases (28.1%). Overall, at least one female factor was found in 263/406 cases (64.8%) [4]. Uterine pathologies generally considered to be involved in infertility include fibroids, polyps, uterine synechiae, and congenital anomalies.

Hysteroscopy has proved to be useful in the diagnosis and management of intrauterine pathologies [5] [6].

We undertook this research to determine the clinical profile of patients with uterine-related female infertility at the Gynecological Endoscopic Surgery and Human Reproduction Teaching Hospital of Yaoundé (GESHRTH) awaiting hysteroscopy.

2. Materials and Methods

We conducted a prospective cross-sectional study covering the period January 2016 to June 2023 (eight years) at the Gynecological Endoscopic Surgery and Human Reproduction Teaching Hospital of Yaoundé (GESHRTH). The GESHRTH is a specialized center addressing infertility issues with IVF in Yaoundé.

The target population was all patients with exclusive female infertility and proof of intracavitary pathology awaiting hysteroscopy. Transvaginal ultrasound, saline hysterosonography, and hysterosalpingography were used to identify intracavitary pathology. We excluded files of patients with mixed infertility and patients with co-existing other female factors. The semen analysis of patients' partners was used to exclude male infertility. While hysterosalpingography was used to rule out tubal infertility. The minimum sample size was estimated based on the Cochrane formula. The sampling method was consecutive.

After obtaining ethical clearance and research authorizations, we identified patients' records from operating room registers, retrieved files, and filled out the established and pretested data collection form. Besides, to deal with missing data on the files, we collected the phone numbers of those patients, called them to obtain verbal informed consent, and interviewed them. Data analysis was performed using Cs Pro version 8.0 and R Studio version 2024.12.1-563.

3. Results

We retained 126 cases (**Figure 1**). The mean age of our patients was 37.9 years \pm 5.5 years, with extremes of 25 and 45 years. The median age was 39 years. **Figure 2** shows that the [40 - 45[years age group was the most represented with 45 patients (35.7%).

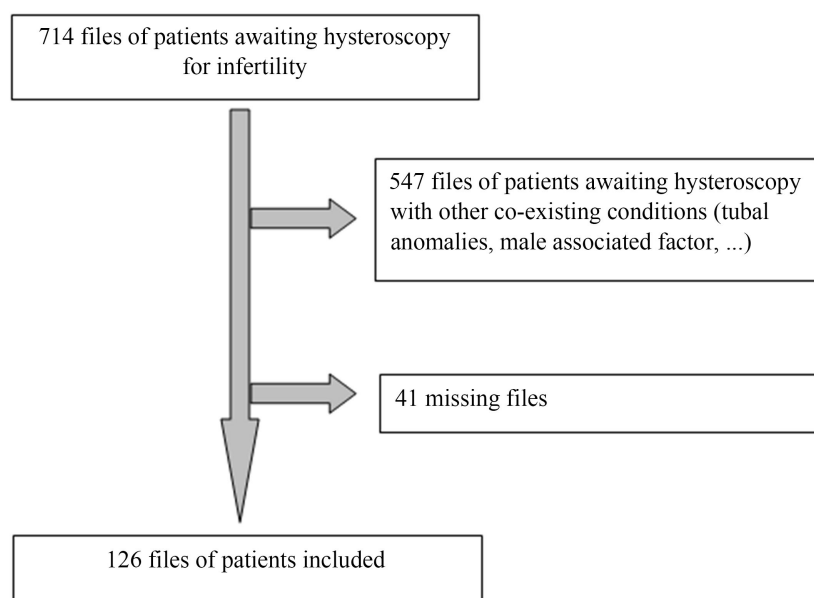


Figure 1. Flow chart of patients.

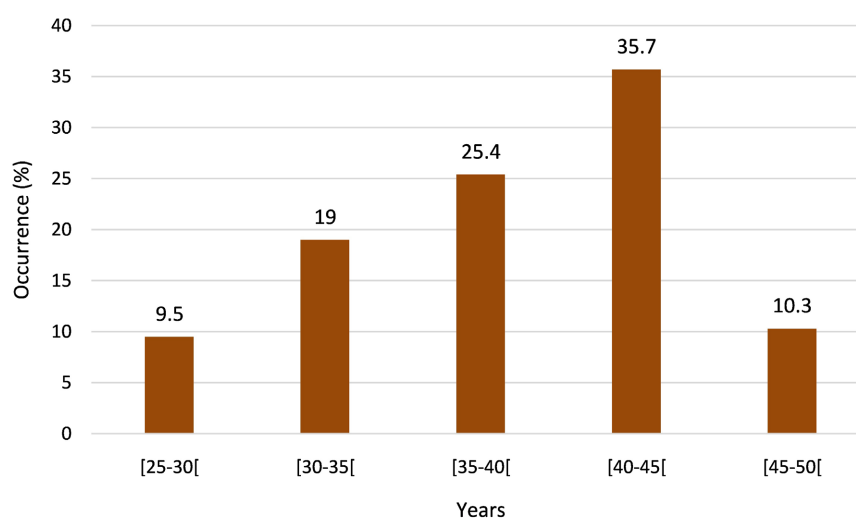


Figure 2. Study the population according to age.

Concerning socio-demographic characteristics of our study population, as shown in **Table 1**, 81 patients (64.3%) were married. The majority of them have a higher education level (66.7%), followed by secondary level (27.8%). Private sector and civil servants were the most represented occupations recorded with 42.1% and 38.9% respectively.

Regarding the past history of our patients (**Table 2**), HIV infection was noticed in 12 patients (9.5%), whereas high blood pressure and diabetes were reported in 3.2% and 2.4% cases, respectively. A past history of myomectomy and cesarean section was noticed in 35 (27.8%) and 22 (17.5%) cases. In addition, a past hysteroscopic procedure was observed with management of synechia in 4 (3.2%), polypectomy in 2 (1.6%), and resection of the uterine septum in 1 (0.8%).

Table 1. Socio-demographic characteristics of the study population.

Variables	Occurrence (n = 126)	Percentage
Marital Status		
Married	81	64.3%
Cohabitation	45	35.7%
Level of Education		
Higher	84	66.7%
Secondary	35	27.8%
Primary	7	5.6%
Occupation		
Student	8	6.3%
Housewife	16	12.7%
Civil Servant	49	38.9%
Private Sector	53	42.1%

Table 2. Past history of participants.

Variables	Occurrence (n = 126)	Percentage
Past Medical History		
High Blood Pressure	4	3.2%
Diabetes	3	2.4%
HIV Infection	12	9.5%
Past Surgical History		
Myomectomy	35	27.8%
Cesarean Section	22	17.5%
Nodulesctomy	18	14.3%
Synechia	4	3.2%
Polypectomy	2	1.6%
Section of Uterine Septum	1	0.8%
Others	2	1.6%

Concerning the gynecological and obstetrical history, the mean age of menarche was 13.8 years \pm 1.8 years, with extremes of 10 and 19 years. The mean length of the menstrual cycle was 28.3 days \pm 3.7 days, with extremes of 25 and 36 days.

The mean parity was 0.6 \pm 0.8 with extremes of 0 and 3. A past history of abortion was reported in 71 (74.7%), with a curettage done in 32 cases (25.4%).

As part of clinical signs (**Table 3**), dysmenorrhea, menorrhagia, and dyspareunia were the most frequent signs with 52 (41.3%), 35 (27.8%), and 23 (18.5%), respectively. Besides, secondary infertility was noticed in most cases, 92 (73%). The mean duration of infertility was 7.8 years \pm 4.6 years, extremes 1 and 22

years. The [5 - 10[years group was the most represented (42.9%).

Table 3. Clinical signs and characteristics of infertility.

Variables	Occurrence (n=126)	Percentage
Clinical Signs		
Dysmenorrhea	52	41.3%
Menorrhagia	35	27.8%
Dyspareunia	23	18.3%
Amenorrhea	14	11.1%
Metrorrhagia	7	5.6%
Oligomenorrhea	4	3.2%
Type of Infertility		
Secondary	92	73%
Primary	34	27%
Duration of Infertility (Years)		
[1 - 5[26	20.6%
[5 - 10[54	42.9%
[10 - 15[33	26.2%
[15 - 20[8	6.3%
≥20	5	4%

On routine scanning, intrauterine anomalies observed (**Table 4**) were sub-mucosal fibroids in 82 (65%). The mean number of fibroids per patient was 4.1 ± 3.1 (Min 1 - Max 13). The mean size of fibroids was $3.4 \text{ cm} \pm 1.8 \text{ cm}$ (Min 0.9 - Max 10.8). In addition, polyps and synechia were found in 72 (59.5%) and 17 (13.9%).

Table 4. Distribution of intrauterine anomalies found on routine radiological workup.

Variables	Occurrence	Percentage
Fibroids	82	65%
FIGO 0	10	12.2%
FIGO 1	13	15.9%
FIGO 2	25	30.5%
FIGO 3	13	15.9%
Other FIGO Locations	21	25.7%
Endometrial Polyps	72	59.5%
Synechia	17	13.9%
Uterine Septum	3	2.5%
Adenomyosis	1	0.8%

4. Discussion

In our study, the mean age of our patients was 37.9 years \pm 5.5 years. This figure was already found by Nyada *et al.* and Noa Ndoua *et al.* with 38.7 years \pm 7.6 years and 39.3 years \pm 7.8 years, respectively [7] [8]. These results are consistent with the profile of patients who consult at GESHRTH, a facility dedicated to addressing infertility issues.

The majority of our patients had a higher level of education; our results are similar to those of Voundi *et al.* in 2025. The latter found that the risk of infertility increases with the level of education, women with higher education having 10.44 times the risk of infertility than those with a secondary education [4]. This could be explained by the societal and professional pressures that women face, thus relegating the desire for motherhood to a secondary concern.

In our study, patients working in the private sector were mostly frequent. Our results are comparable to those of Voundi *et al.*, who found that the risk of seeking help for female infertility was 4.9 times higher for women working in the private sector. The private sector appears to involve more physical or psychological constraints and consequently impacts the desire for motherhood.

Dysmenorrhea (41.3%), menorrhagia (27.8%), dyspareunia (18.3%), and amenorrhea (11.1%) were the main clinical signs found in our patients apart from the inability to conceive. Our results are similar to those of Noa Ndoua *et al.*, who found, with the exception of dyspareunia, that dysmenorrhea, menorrhagia, and amenorrhea were the main clinical symptoms in infertile patients [8].

A past history of abortion was recorded in 74.7% of our patients, with curettage as management in 33.8%. Noa Ndoua *et al.* and Nyada *et al.* found the same figures [7] [8]. The high proportion of curettage could explain the occurrence of uterine synechiae.

Fibroids are the most frequently occurring benign tumors of the uterus. Therefore, a history of myomectomy was recorded in 27.8% of our patients.

Secondary infertility was the most common in our study (73%). Our results are similar to those of Sule *et al.* in Nigeria, who found 77.5% [9]. Odunvbun also found similar results, with 76.8% [10].

The main abnormalities detected were fibroids (65%), polyps (59.5%), and synechiae (13.9%); our results are consistent with those of Ray-Offor *et al.* in Nigeria in 2021 [11].

5. Limitations

This was a single-center design study in a specialized center, which may include selection bias. Furthermore, it was a descriptive study with no comparison done. And we chose to rely on pre-hysteroscopic scanning workup rather than hysteroscopic findings.

6. Conclusion

Patients with intracavitary female infertility awaiting hysteroscopy at GESHRTH

have a mean age of 37.9 years, and most have a higher education level. The majority have secondary infertility that has been present for 7.8 years, and the identified intracavitary lesions are fibroids (65%), polyps (59.5%), and synechiae (13.9%).

Authors' Contributions

Ndounda A Zock Marcelle wrote the first draft. Nyada Serge Robert, Ngonono Akam Vanina, Mpono Emenguele Pascale, Metogo Ntsama Junie, Batoum Mboua Véronique, Nsahlai Christiane, Ebong Clifford Ebontane, and Tompeen Isidore were co-investigators. Noa Ndoua Claude was the supervisor of the study. All authors reviewed the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Organisation mondiale de la Santé (2024) Infertilité. OMS. <https://www.who.int/news-room/fact-sheets/detail/infertility>
- [2] Kasia, J.M., Belinga, E., Noa Ndoua, C.C., Bella, A., *et al.* (2019) Facteurs prédictifs de grossesse chez les femmes âgées de plus de 38 ans en assistance médicale à la procréation. *Health Sciences and Disease*, **21**, 11-14.
- [3] Carson, S.A. and Kallen, A.N. (2021) Diagnosis and Management of Infertility: A Review. *Journal of the American Medical Association*, **326**, 65-76. <https://doi.org/10.1001/jama.2021.4788>
- [4] Voundi, E., Toukam, M., Noa Ndoua, C., Nguéfack Tsague, G., *et al.* (2025) Prévalence et facteurs associés d'infertilité d'origine féminine au CHRACERH, Yaoundé, Cameroun. *Health Sciences and Disease*, **25**, 6-11.
- [5] Inam, L. and Faridi, M.S. (2026) Hysteroscopy in the Evaluation of Intrauterine Pathologies with Primary and Secondary Infertility: A Prospective Study from North India. *Cureus*, **18**, e101116. <https://doi.org/10.7759/cureus.101116>
- [6] Donnez, J., Taylor, H.S., Marcellin, L. and Dolmans, M. (2024) Uterine Fibroid-Related Infertility: Mechanisms and Management. *Fertility and Sterility*, **122**, 31-39. <https://doi.org/10.1016/j.fertnstert.2024.02.049>
- [7] Nyada, S.R., Mpono, E.P., Ngonono, A.V., Metogo Ntsama, J.A., *et al.* (2023) Frequency and Pattern of Intrauterine Hysteroscopic Lesions among Women Coming for IVF in the City of Yaoundé. *Health Sciences and Disease*, **24**, 39-42.
- [8] Noa Ndoua, C.C., Ayissi Nga, G.G., Metogo, J., Belinga, É., *et al.* (2018) Hysteroscopic Features of Endocavitary Lesions at CHRACERH, Cameroon. *Health Sciences and Disease*, **19**, 61-65.
- [9] Sule, J.O., Erigbali, P. and Eruom, L. (2008) Prevalence of Infertility in Women in a Southwestern Nigerian Community. *African Journal of Biomedical Research*, **11**, 225-227. <https://doi.org/10.4314/ajbr.v11i2.50716>
- [10] Odunvbun, W.O., Oziga, D.V., Oyeye, L.O. and Ojeogwu, C.L. (2018) Pattern of Infertility among Infertile Couple in a Secondary Health Facility in Delta State, South South Nigeria. *Tropical Journal of Obstetrics and Gynaecology*, **35**, 244-248. https://doi.org/10.4103/tjog.61_18

- [11] Ray-Offor, E. and Nyengidiki, T.K. (2021) Diagnostic Yield and Therapeutic Outcome of Hysteroscopy in Women with Infertility in a Referral Clinical Setting: A Port Harcourt, Nigeria Experience. *Pan African Medical Journal*, **38**, Article 155. <https://doi.org/10.11604/pamj.2021.38.155.27101>