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Clinical Presentation, Laparoscopic Findings, and Therapeutic Aspects of Endometriosis in Patients Undergoing Laparoscopy at the Yaoundé Gyneco-Obstetric and Pediatric Hospital

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Abstract

Introduction: Endometriosis is a chronic gynecological disease defined as the presence of endometrial tissue outside the uterine cavity. It affects approximately 10% of women of childbearing age worldwide. It is a public health issue characterized by severe pain and infertility that negatively impacts the quality of life of affected patients. Laparoscopy plays a pivotal role in its diagnosis and surgical management. However, access to this minimally invasive technique remains limited to a few specialized hospital centers, including the Yaoundé Gyneco-Obstetric and Pediatric (YGOPH). This study aimed to evaluate the clinical, laparoscopic, and therapeutic aspects of endometriosis in patients undergoing laparoscopic surgery at YGOPH. **Methodology:** This was a descriptive cross-sectional study with retrospective data collection over a five-year period from January 2018 to July 2023, conducted in the Gynecology Department of YGOPH. We included patients with complete medical records who underwent laparoscopy and were diagnosed with endometriosis lesions. Disease staging was performed using the revised American Society of Repro-

ductive Medicine (rASRM) classification. Data were analyzed using IBM SPSS Statistics version 26, and results were expressed as the mean, frequency, and percentage. **Results:** Among 413 women who underwent laparoscopic surgery, 71 were diagnosed with endometriosis lesions, accounting for 17.2% of cases. The average age was 31.9 ± 5 years, and the average age at menarche was 12.28 ± 2.08 years. Nulliparous women accounted for 61% of cases. The most common clinical symptoms were chronic pelvic pain (53%) and infertility (59.4%). Pelvic ultrasound was the most frequently performed imaging study (53%). The primary surgical indications were infertility (34%), chronic pelvic pain (19%), and ovarian cysts (17%). Regarding laparoscopy, superficial endometriosis was the most prevalent phenotype (67%), with the ovary being the most affected organ (75%). The uterosacral ligaments were the most frequent location of deep lesions (65%). According to the rASRM, endometriosis was severe in 52% of cases. Surgically, endometriomas were systematically drained, followed by cyst wall excision in all cases. Superficial lesions were ablated by fulguration in 40.5% of cases. **Conclusion:** The prevalence of endometriosis among women undergoing laparoscopic surgery was 17.2%. This condition primarily affected young, infertile women with chronic pelvic pain. Superficial endometriosis was the most common phenotype, with surgical management tailored accordingly.

Keywords

Endometriosis, Clinical Presentation, Laparoscopy, Treatment, YGOPH

1. Introduction

Endometriosis is defined as the presence of endometrial tissue outside the uterine cavity. It is a chronic gynecological disease that affects approximately 10% of women of childbearing age worldwide [1]. Often associated with severe pelvic pain, dysmenorrhea, dyspareunia, and infertility, endometriosis significantly impacts patients' quality of life and represents a considerable socioeconomic burden [2]. Managing endometriosis is complex and involves medical and surgical approaches. Surgery is often recommended for severe or medically resistant cases. Laparoscopy, a minimally invasive surgical technique, is now considered the gold standard for both diagnosis and treatment of endometriosis, offering advantages such as smaller incisions, faster recovery, and less post-operative pain compared to laparotomy [3].

In the African context, particularly in Cameroon, endometriosis management faces specific challenges. Diagnosis is often delayed due to limited public awareness, restricted access to specialized diagnostic tools (experts on endometriosis, ultrasound, and MRI), and cultural normalization of pelvic pain in women [4]. Consequently, patients often present at advanced disease stages with extensive, complex lesions. Furthermore, although laparoscopy is the preferred surgical ap-

proach for endometriosis, its availability in Cameroon is predominantly limited to major urban centers. Key barriers include: high equipment cost, shortage of trained specialists, and insufficient surgical training programs in advanced laparoscopic techniques [5]. As a referral center, the Yaoundé Gyneco-Obstetric and Pediatric Hospital (YGOPH) plays a central role in managing complex gynecological conditions, including endometriosis.

This study aims to describe the clinical, laparoscopic, and therapeutic aspects of endometriosis in women who underwent laparoscopic surgery at YGOPH. This research will improve our understanding of the disease's specific characteristics in the Cameroonian clinical context, identify challenges in diagnosis and surgical management, and suggest ways to improve the care of women with endometriosis in Cameroon.

2. Methodology

2.1. Study Design

We conducted a descriptive, cross-sectional study with retrospective data collection over a five-year period from January 2018 to July 2023 in the gynecology department of YGOPH.

2.2. Study Population

We included all patients with complete medical records who underwent laparoscopy during the study period and were diagnosed with endometriosis. For each case, sociodemographic, clinical, paraclinical, and intraoperative data were collected. We used the revised American Society of Reproductive Medicine (rASRM) score to stage the disease.

2.3. Data Analysis

Data were analyzed using IBM SPSS version 26 software, and results were presented in tables and figures. Parameters of central tendency (mean and median) and dispersion (standard deviation and interquartile range) were used to describe quantitative variables. Qualitative variables were expressed as absolute or relative frequencies.

2.4. Ethical Considerations

This study was approved by the ethics committees of the Faculty of Medicine and Biomedical Sciences at the University of Yaoundé 1 and YGOPH. The anonymity and confidentiality of the collected data were maintained.

3. Results

During the study period, 413 patients underwent laparoscopy. Among them, 71 were found to have endometriosis lesions, of whom seven patients were excluded due to missing medical records. The participant flow chart is as follows (**Figure 1**).

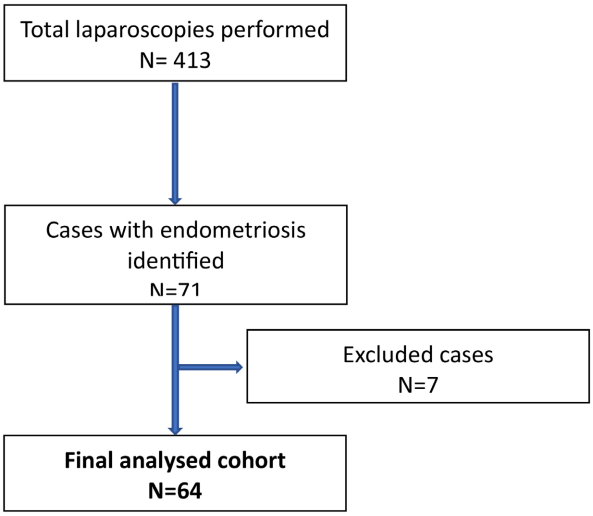

Figure 1. Participant flow diagram.

3.1. Prevalence of Endometriosis in Patients Undergoing Laparoscopic Surgery

Of the 413 patients who underwent laparoscopic surgery during the study period, 71 had endometriosis lesions, representing a prevalence rate of 17.2%.

3.2. Sociodemographic Characteristics

Table 1. Sociodemographic characteristics of the patients.

Characteristics	N = 64	%
Age		
Means ± SD	31.9 ± 5	
Range	20 - 43	
[20 - 24]	5	7.8
[25 - 29]	13	20.3
[30 - 34]	27	42.2
[35 - 39]	14	21.9
>40	5	7.8
Parity		
Nulliparous	39	60.9
Pauciparous	10	15.6
Primiparous	14	21.9
Multiparous	1	1.6
Marital Status		
Single	40	62.5
Married	24	37.5

Continued

Place of Residence		
Urban	59	92.2
Rural	5	7.8
Education Level		
Secondary	20	31.2
Higher Education	44	68.8
Occupation		
Civil Servant	17	26.6
Private Sector	15	23.4
Informal Sector	7	10.9
Student	14	21.9
Unemployed	11	17.2

The age range was 20 to 43 years old, with an average age of 31.9 ± 5.0 years. The most represented age group was 30 to 34 years old (42.2%).

Most of the patients were nulliparous (60.9%), single (62.2%), highly educated (68.8%), and lived in urban areas (92.2%) (Table 1).

3.3. Clinical and Paraclinical Characteristics of Patients

Table 2 summarizes the clinical characteristics of patients.

Table 2. Clinical characteristics of the patients.

Characteristics	N = 64	%
Menarche		
Means ± SD	12.28 ± 2.08	
Medical History		
Curettage	11	17.2
Cesarian Section	2	3.1
Myomectomy	6	9.4
Hysteroscopy	2	3.1
Cervical Stenosis	1	1.6
Infertility		
Primary	22	34.4
Secondary	16	25
Chronic Pelvic Pain		
Non-cyclical	16	25
Cyclical	18	28.1
Dyspareunia	23	35.9

Continued

Dyschezia	1	1.6
Menorrhagia	3	4.7
Abdominal Distension	1	1.6
Adnexal Mass	19	29.7
Uterosacral Ligament Induration	10	15.6
Abdominal tenderness	6	9.4
Fixed Uterus	6	9.4
Umbilical Nodule	3	4.7
Retroverted Uterus	3	4.7
Surgical Indications		
Infertility	22	34.4
Chronic Pelvic Pain	21	32.8
Ovarian Cysts	11	17.2
Post-myomectomy Laparoscopy	3	4.7
Unruptured Ectopic Pregnancy	3	4.7
Uterine Fibroid	1	1.6
Tubo-Ovarian Abscess	1	1.6
Suspected Ovarian Cancer	1	1.6
Adnexal Torsion	1	1.6

The average age at menarche was 12.28 ± 2.08 years.

A history of curettage and myomectomy was found in 17.2% and 9.4% of cases, respectively.

Patients were infertile in 59.4% of cases and reported chronic pelvic pain (53.1%), which was mostly cyclical. Dyspareunia was present in 35.9% of cases.

The most common physical signs were the perception of an adnexal mass during a vaginal examination (29.7%) and induration of the uterosacral ligaments (15.6%).

The main reasons for surgery were infertility (34.4%), chronic pelvic pain (32.8%), and ovarian cysts (17.2%).

Table 3 summarizes the paraclinical characteristics of the patients.

Serum CA 125 testing was requested for nine patients (14%) as part of the investigation of an ovarian cyst. The test results were elevated in more than three-quarters of the cases.

Pelvic ultrasound was the most commonly performed morphological examination (53.1%). The main ultrasound finding was ovarian cysts (61.8%), and endometriosis was suspected in three patients. Kissing ovaries were identified on ultrasound in two patients.

Table 3. Paraclinical characteristics of the patients.

Characteristics	N = 64	%
CA125 Level	9	14
Elevated CA125	7	10.9
Pelvic Ultrasound	34	53.1
Ovarian Cyst	21	32.8
Kissing ovaries	2	3.1
Ascites	1	1.6
Pelvic MRI	11	17.2
Retrocervical Endometriosis	5	7.8
Kissing ovaries	2	3.1
Adenomyosis	2	3.1

3.4. Clinical and Intraoperative Characteristics of Patients

Table 4 summarizes these characteristics.

Superficial endometriosis lesions were the most frequent (67.2%).

Pelvic adhesions were present in 84.4% of cases.

The ovary was the most commonly affected organ (75%), followed by the utero-sacral ligaments (45.3%).

The most common primary lesions of superficial endometriosis were blue lesions (34.4%).

Table 4. Characteristics of Endometriosis Lesions.

Characteristics	N = 64	%
Endometriosis Phenotype		
Superficial Endometriosis	43	67.2
Endometrioma	34	53.1
Deep Infiltrating Endometriosis	34	53.1
Superficial Endometriosis Appearance		
Blue	22	34.4
Retraction	15	23.4
Stellate Lesion	9	14
Red	8	12.5
Cystic Nodule	7	10.9
White	5	7.8
Black	3	4.7
Hypervascularization	3	4.7
Brown	1	1.6
Yellow	1	1.6
Endometrioma Location		
Left Ovary	7	10.9
Right Ovary	10	15.6

Continued

Bilateral	17	26.6
Deep Infiltrating Endometriosis Sites		
Uterosacral Ligaments	22	34.4
Torus Uterinum	10	15.6
Rectovaginal Septum	12	18.7
Rectum	1	1.6
Overall Affected Organs		
Sigmoid Colon	2	3.1
Appendix	2	3.1
Rectum	4	6.3
Bladder	4	6.3
Diaphragm	5	7.8
Ovarian Fossa	5	7.8
Pouch of Douglas	7	10.9
Abdominal Wall	10	15.6
Rectovaginal Septum	12	18.7
Torus Uterinum	14	21.9
Fallopian Tube	16	25
Uterus	21	32.8
Uterosacral Ligaments	29	45.3
Ovaries	48	75
Adhesions (According to AFS Classification)	54	84.4
Type A (Filmy)	11	17.2
Type B (Dense Avascular)	44	68.7
Type C (Opaque)	16	25

Endometriomas were bilateral in half of the cases (26.6%). When unilateral, the right side was most commonly affected.

The uterosacral ligaments were the most common site of deep endometriosis lesions (64.7%).

Figure 2 illustrates the distribution of endometriotic lesions based on their severity according to the rASRM classification.

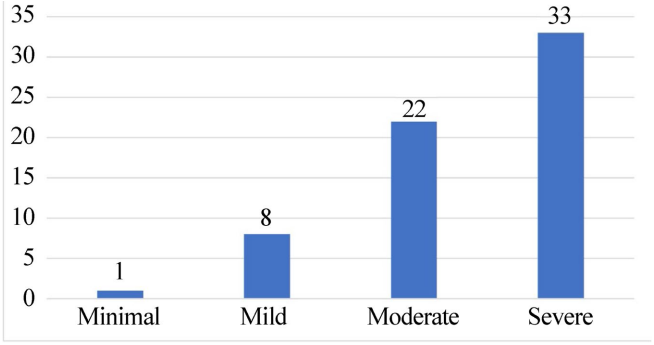

Figure 2. Revised American Society of Reproductive Medicine (rASRM) classification of endometriosis.

According to the revised classification of the American Society of Reproductive Medicine (rASRM), most patients (51.6%) had severe endometriosis.

Table 5 summarizes the surgical procedures performed to treat endometriotic lesions.

Table 5. Surgical management of endometriotic lesions.

Characteristics	N = 64	%
Adhesiolysis	54	84.4
Complete Adhesiolysis	45	83.3
Incomplete Adhesiolysis	9	16.7
Endometrioma Management	34	53.1
Cyst Drainage	34	100
Cyst Wall Excision	34	100
Superficial Endometriosis Management	37	57.8
Ablation (Fulguration)	15	40.5
Excision	12	32.4
Combined (Fulguration + Excision)	10	27.1
Deep Infiltrating Endometriosis Management		
Retrocervico-Rectal Shaving	12	18.7
Resection of Uterosacral Ligaments	22	34.4
Additional Procedures		
Appendectomy	1	1.6
Umbilical Nodulectomy	3	4.7
Tuboplasty (Fimbrioplasty/Salpingostomy)	30	46.9

Adhesiolysis was completed in the majority of cases (83.3%).

Endometriotic cysts were systematically drained, followed by cyst wall excision in cases.

The most common procedure for superficial lesions was ablation by fulguration (40.5%).

Resection of the uterosacral ligaments was the main procedure for deep lesions.

Retro-cervico-rectal shaving was performed for retro-cervico-rectal lesions.

4. Discussion

The main objective of this paper was to study the clinical, laparoscopic, and therapeutic aspects of endometriosis in women undergoing surgery at the YGOPH. More specifically, the aim was to determine the frequency of endometriosis in the study population, to describe the sociodemographic, clinical, and para-clinical characteristics of the participants, to identify the different indications for laparoscopy, and to report on intraoperative findings and surgical procedures. The main

limitations of our study were the absence of anatomopathological confirmation of endometriosis. In 2022, using histopathology as the gold standard in the diagnosis of endometriosis, Gratton *et al.* [6] found that sensitivity for laparoscopic visualization was 90.1% (95% CI: 81.0 - 95.1), specificity was 40% (95% CI: 23.4 - 59.3), while positive and negative predictive values were 81.0% (95% CI: 71.0 - 88.1) and 58.8% (95% CI: 36.0 - 78.4) respectively; and the accuracy was 77.1% (95% CI: 67.7 - 84.4). In fact, very few files provided this information, which could be explained by patients not performing the anatomopathological examination or not reporting the results in the files at the post-operative appointment. Excluding cases without histological confirmation would have drastically reduced our sample size. However, it is important to remember that according to the recent recommendations of the European Society of Human Reproduction and Embryology [7], a negative histology result does not entirely exclude the diagnosis of endometriosis. Thus, in our study, we considered the visual diagnosis of endometriosis lesions at laparoscopy.

The overall prevalence of endometriosis among our study population was 17.2%. This frequency is lower than the 48.1% found by Fawole *et al.* in 2015 [8] and the 62% found by Janssen *et al.* in 2013 [9] in Nigeria. The studies carried out by these authors concerned a population with chronic pelvic pain or infertility. In fact, 45 to 82% of women with chronic pelvic pain and 2.1 to 78% of infertile women have endometriosis [10] [11]. In 2016, Prescott *et al.* [12] found a frequency of 6%. Indeed, their study excluded infertile women. In Cameroon, in 2007, Mboudou *et al.* [13] found that 13.5% of women undergoing laparoscopic surgery for infertility had endometriosis. These disparities can be explained by the heterogeneity of the selection criteria for the various studies and the methodology used. With the development of endoscopic surgery in Sub-Sahelian Africa over the last few decades, we can see that endometriosis is no longer an uncommon pathology in black African women.

The mean age of the participants was 31.9 years (±5 years), with extremes of 20 and 43 years. These results are similar to those found in the African literature [8] [13]-[16]. Indeed, endometriosis is a pathology of young women of childbearing age. Single women represented 68% of our sample, while some authors [13] [14] found a predominance of married women. The mean age at menarche was 12.28 ± 2.08 years. Early menarche, defined as occurring at an age of 11 or 12 years or younger, depending on the author, is associated with a higher risk of endometriosis [17] [18]. Nulliparous women were the most represented group (61%), with only one participant being multiparous. Existing studies [14] [19] found a predominance of nulliparous women. Endometriosis is recognized as a cause of infertility through several mechanisms, including impaired folliculogenesis, poor oocyte quality, impaired ovarian reserve, anatomical changes due to adhesions, a lack of exposure to sexual activity in women with chronic pain, and local proinflammatory factors, which reduce implantation rates and promote early abortion.

In our study, patients' main complaints were infertility (61%) and chronic pel-

vic pain (53%), which was most often cyclical. Pelvic pain and/or infertility are the primary manifestations of endometriosis. These findings corroborate those of several authors [8] [9] [13] [14] [16], who have shown that chronic pelvic pain and infertility are the primary manifestations of endometriosis. The majority of patients have normal physical findings, and the perception of an adnexal mass on vaginal examination was the most frequently detected physical sign (30% of participants). This could be explained by the fact that our study included patients with various clinical suspicions and operative indications. This makes searching for physical signs specific to endometriosis suboptimal. Additionally, clinical findings differ depending on whether they are sought during or outside of menstruation. It should be noted that these signs are more visible during menstruation. Three of our patients presented with umbilical nodules, which are a sign of cutaneous endometriosis. The clinical manifestation of cutaneous endometriosis depends on the hormonal environment and is often associated with catamenial hemorrhage [20].

Serum Cancer Antigen 125 (CA 125) essays were performed by 14% of participants, with elevated levels found in over three-quarters of cases (77.8%). In 2012, Szubert *et al.* [21] in Poland also found higher serum CA 125 levels in women with endometriosis. CA 125 can be used to improve diagnostic accuracy for endometriosis, and to assess the efficacy of surgical treatment and the progression towards malignant transformation. However, the sensitivity of CA 125 alone is unsatisfactory, because elevated levels are seen in several physiological or pathological situations, such as ovulation, menstruation, ovarian cysts, pelvic infections, and cancers of the ovary, pancreas, and lungs [22] [23].

A pelvic ultrasound was the most common morphological examination, performed on 34 out of 64 patients (53.1%). Potential reasons to explain this low rate are direct referral for emergent laparoscopy based on clinical presentation or patient financial barriers. The main ultrasound finding was the presence of ovarian cysts (60%). These results are consistent with those of Bilkissou *et al.* [14], who found that 69.8% of patients underwent pelvic ultrasounds, with endometriomas being the primary finding in 25.3% of cases. Pelvic ultrasound is accessible and is often used as a first-line procedure for pelvic gynecological diseases, including endometriosis. Moreover, endovaginal ultrasound has a sensitivity of 81% - 84% and a specificity of 90% - 97% for diagnosing endometrioma [24]. A pelvic MRI was performed on 11 patients (17%). Most of them showed deep endometriosis lesions. The sensitivity and specificity of MRIs for diagnosing and evaluating deep endometriosis lesions preoperatively are 88% and 99% [25] [26], respectively. However, the high cost of this examination and the limited number of radiologists who specialize in endometriosis may restrict its use.

The main indications for surgery were infertility (34.4%), chronic pelvic pain (32.8%), and ovarian cysts (17.2%). In 2018, Hemmert *et al.* [27] in the USA found that the main indications were pelvic pain (63%), pelvic masses (14%), and menstrual irregularities (10%). Infertility accounted for only 4%. Schliep *et al.* [19] also found pelvic pain (62.2%), pelvic masses (12.8%), menstrual irregularities (8.8%),

and infertility (7.4%). These differences may be explained by the fact that all of these studies included patients who had undergone laparoscopy for various reasons and for whom endometriosis lesions had been identified. The ovary was the most affected organ (75%). Mboudou *et al.* [13] and Ajani *et al.* [15] also found the ovary to be the most affected organ in 35.8% and 58.8% of cases, respectively. Superficial endometriosis lesions were the most frequent (67.2%). These results differ from those of Bilkissou *et al.* [14], who found endometriomas (22.9%) and adhesions (14.5%). According to the rASRM classification, most of our patients (51.6%) had severe endometriosis. Chapron *et al.* [28] in France in 2003 found mild endometriosis in most cases (38.1%). This difference may be explained by the fact that their study only included patients with deep endometriosis lesions, whereas the rASRM classification is not the most suitable for deep endometriosis, as it does not take into account the involvement of sites such as the uterosacral ligaments, vagina, rectum, and bladder. Its scoring system prioritizes adhesions and ovarian disease, thereby underrepresenting the functional impact of deep infiltrating nodules.

The type of surgical treatment depends on the clinical form of endometriosis and the number and location of the lesions. The most common procedure for treating superficial endometriosis lesions was ablation by fulguration. Ablation is indeed a destructive technique recommended for treating superficial endometriosis lesions; however, the main drawback is the thermal damage associated with the diffusion of heat laterally and at depth. The endometrioma was systematically drained, followed by shell excision in 82% of cases. Exeresis of the cyst is associated with a lower risk of recurrence than ablation. However, a greater or lesser portion of ovarian tissue may be removed, especially in endometriomas larger than 60 mm [29]. Surgery for deep nodules most often involved total resection of the nodules (68%). This aligns with the literature [29] [30].

Surgery should be considered only in patients with symptoms that do not respond to medical treatment and significantly impact the quality of life [31]. The current recommendations for the management of endometriosis suggest medical therapy as the first line, including combined hormonal contraceptives and progesterone. The second line consists of Gonadotropin-releasing hormone (GnRH) agonist, GnRH antagonist, and aromatase inhibitors [31].

5. Conclusion

This study highlights the clinical, laparoscopic, and therapeutic aspects of endometriosis among women undergoing surgery at the Yaoundé Gyneco-Obstetric and Pediatric Hospital (YGOPH). The prevalence of endometriosis in our population was 17.2%, with infertility (59.4%) and chronic pelvic pain (53%) as the predominant symptoms. Sociodemographic findings align with existing literature, emphasizing endometriosis as a condition affecting young, predominantly nulliparous women of reproductive age. Despite the absence of routine histopathological confirmation, laparoscopic visualization remained a reliable diagnostic tool,

consistent with recent ESHRE guidelines. Imaging modalities such as pelvic ultrasound and MRI proved valuable, though accessibility and cost limit MRI's widespread use in our setting. Surgical management, tailored to lesion type and severity, predominantly involved fulguration for superficial lesions and cyst excision for endometriomas, reflecting global standards. The study underscores the growing recognition of endometriosis in Sub-Saharan Africa, driven by advances in endoscopic surgery. However, challenges persist, including limited diagnostic resources and heterogeneity in clinical presentation. Future efforts should prioritize multidisciplinary approaches, standardized protocols, and increased awareness to optimize early diagnosis and treatment, ultimately improving quality of life for affected women. To enhance clinical outcomes in our region, we recommend the development and implementation of standardized diagnostic and treatment protocols for endometriosis.

Conflicts of Interest

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

References

[1] Giudice, L.C. (2010) Endometriosis. *New England Journal of Medicine*, **362**, 2389-2398. https://doi.org/10.1056/nejmcp1000274

[2] Peter, A.W., Adamson, G.D., Al-Jefout, M., Becker, C.M., D'Hooghe, T.M., Dunselman, G.A.J., *et al.* (2017) Research Priorities for Endometriosis: Recommendations from a Global Consortium of Investigators in Endometriosis. *Reproductive Sciences*, **24**, 202-226. https://doi.org/10.1177/1933719116654991

[3] Koninckx, P.R., Ussia, A., Adamyan, L. and Wattiez, A. (2012) Endometriosis and Deep Infiltrating Endometriosis. *Current Opinion in Obstetrics and Gynecology*, **24**, 205-209.

[4] Gharoro, E.P. and Enabudoso, E.J. (2010) Endometriosis: A Review of Current Perspectives. *Tropical Journal of Obstetrics and Gynaecology*, **27**, 15-20.

[5] Fondjo, L.A., Sando, Z., Ngounou, E., Mve, K., Ndong, P., Essomba, M., *et al.* (2019) Prevalence and Clinical Profile of Endometriosis at the Yaounde Central Hospital, Cameroon. *Open Journal of Obstetrics and Gynecology*, **9**, 1085-1093.

[6] Gratton, S., Choudhry, A.J., Vilos, G.A., Vilos, A., Baier, K., Holubeshen, S., *et al.* (2022) Diagnosis of Endometriosis at Laparoscopy: A Validation Study Comparing Surgeon Visualization with Histologic Findings. *Journal of Obstetrics and Gynaecology Canada*, **44**, 135-141. https://doi.org/10.1016/j.jogc.2021.08.013

[7] Editor, R. (2022) Endometriosis. Guideline of the European Society of Human Reproduction and Embryology—2022. *Reproductive Endocrinology*, No. 66, 8-19.

[8] Fawole, A.O., Bello, F.A., Ogunbode, O., Odukogbe, A.A., Nkwocha, G.C., Nnoaham, K.E., *et al.* (2015) Endometriosis and Associated Symptoms among Nigerian Women. *International Journal of Gynecology & Obstetrics*, **130**, 190-194. https://doi.org/10.1016/j.ijgo.2015.02.030

[9] Janssen, E.B., Rijkers, A.C.M., Hoppenbrouwers, K., Meuleman, C. and D'Hooghe, T.M. (2013) Prevalence of Endometriosis Diagnosed by Laparoscopy in Adolescents with Dysmenorrhea or Chronic Pelvic Pain: A Systematic Review. *Human Reproduction Update*, **19**, 570-582. https://doi.org/10.1093/humupd/dmt016

[10] Mahmood, T.A. and Templeton, A. (1991) Prevalence and Genesis of Endometriosis. *Human Reproduction*, **6**, 544-549. https://doi.org/10.1093/oxfordjournals.humrep.a137377

[11] Meuleman, C., Vandenabeele, B., Fieuws, S., Spiessens, C., Timmerman, D. and D'Hooghe, T. (2009) High Prevalence of Endometriosis in Infertile Women with Normal Ovulation and Normospermic Partners. *Fertility and Sterility*, **92**, 68-74. https://doi.org/10.1016/j.fertnstert.2008.04.056

[12] Prescott, J., Farland, L.V., Tobias, D.K., Gaskins, A.J., Spiegelman, D., Chavarro, J.E., *et al.* (2016) A Prospective Cohort Study of Endometriosis and Subsequent Risk of Infertility. *Human Reproduction*, **31**, 1475-1482. https://doi.org/10.1093/humrep/dew085

[13] Mboudou, E.T., Priso, E.B., Mayer, F.E., Minkande, J.Z., Foumane, P. and Doh, A.S. (2007) Prevalence de l'endometriose en laparoscopie chez les femmes infertiles à Yaounde, Cameroun. *Clinics in Mother and Child Health*, **4**, 233-236.

[14] Bilkissou, M., Opoulou, N., Kamdem, D., Ngalame, A., *et al.* (2023) L'Endométriose chez la Femme Camerounaise Vivant à Douala: Aspects Cliniques, Paracliniques et Thérapeutiques. *Health Sciences and Diseases*, **24**, 46-51.

[15] Ajani, M.A., Salami, A., Nwanji, I.D., Olusanya, A.A. and Fatunla, O.E. (2019) Distribution and Characteristics of Endometriotic Lesions in South-Western Nigeria: A Single Institutional Experience. *Medical Journal of Zambia*, **46**, 28-32. https://doi.org/10.55320/mjz.46.1.221

[16] Vanina, N.A.M., Abega, A., Serge, N., Pascale, M., Christiane, N., Michelle, M., *et al.* (2023) Epidemiological Profile and Location of Lesions According to #ENZIAN of Patients Operated on for Endometriosis in a Public Endoscopic Surgery Centre, Yaounde, Cameroon. *Open Journal of Obstetrics and Gynecology*, **13**, 1919-1927. https://doi.org/10.4236/ojog.2023.1312162

[17] Shafrir, A.L., Farland, L.V., Shah, D.K., Harris, H.R., Kvaskoff, M., Zondervan, K., *et al.* (2018) Risk for and Consequences of Endometriosis: A Critical Epidemiologic Review. *Best Practice & Research Clinical Obstetrics & Gynaecology*, **51**, 1-15. https://doi.org/10.1016/j.bpobgyn.2018.06.001

[18] Nnoaham, K.E., Webster, P., Kumbang, J., Kennedy, S.H. and Zondervan, K.T. (2012) Is Early Age at Menarche a Risk Factor for Endometriosis? A Systematic Review and Meta-Analysis of Case-Control Studies. *Fertility and Sterility*, **98**, 702-712.e6. https://doi.org/10.1016/j.fertnstert.2012.05.035

[19] Schliep, K., Chen, Z., Stanford, J., Xie, Y., Mumford, S., Hammoud, A., *et al.* (2015) Endometriosis Diagnosis and Staging by Operating Surgeon and Expert Review Using Multiple Diagnostic Tools: An Inter-Rater Agreement Study. *BJOG: An International Journal of Obstetrics & Gynaecology*, **124**, 220-229. https://doi.org/10.1111/1471-0528.13711

[20] Isidore, T., Anita, N.O.G., Coralie, M.M., Etienne, B., Cyrille, N.N. and Pascal, F. (2024) Endometriosis beyond the Pelvis: A Case Series of Cutaneous Endometriosis and Literature Review. *Open Journal of Obstetrics and Gynecology*, **14**, 77-88. https://doi.org/10.4236/ojog.2024.141009

[21] Szubert, M., Suzin, J., Wierzbowski, T. and Kowalczyk-Amico, K. (2012) CA-125 Concentration in Serum and Peritoneal Fluid in Patients with Endometriosis—Preliminary Results. *Archives of Medical Science*, **3**, 504-508. https://doi.org/10.5114/aoms.2012.29529

[22] Muyldermans, M., Cornillie, F.J. and Koninckx, P.R. (1995) CA125 and endometriosis. *Human Reproduction Update*, **1**, 173-187.

https://doi.org/10.1093/humupd/1.2.173

[23] Wilczak, M., Rzymski, P., Stryjakowska, K., Stanek, R. and Opala, T. (2007) Case Report: Highly Elevated Levels of the Antigen Ca-125 Associated with Inflammatory Abdominal Masses. *Archives of Medical Science*, **3**, 278-280.

[24] Guerriero, S., Ajossa, S., Minguez, J.A., Jurado, M., Mais, V., Melis, G.B., *et al.* (2015) Accuracy of Transvaginal Ultrasound for Diagnosis of Deep Endometriosis in Uterosacral Ligaments, Rectovaginal Septum, Vagina and Bladder: Systematic Review and Meta-analysis. *Ultrasound in Obstetrics & Gynecology*, **46**, 534-545. https://doi.org/10.1002/uog.15667

[25] Tavcar, J., Loring, M., Movilla, P.R. and Clark, N.V. (2020) Diagnosing Endometriosis before Laparoscopy: Radiologic Tools to Evaluate the Disease. *Current Opinion in Obstetrics & Gynecology*, **32**, 292-297. https://doi.org/10.1097/gco.0000000000000638

[26] Diallo, M., Niang, F.G., Diop, A.D., Soko, T.O., Fall, A., Diouf, C.T., *et al.* (2020) Profil de l'endométriose pelvienne à l'IRM à Dakar—Sénégal. *Journal Officiel de la Société de Radiologie d'Afrique Noire Francophone* (*SRANF*), **12**, 145-150. https://doi.org/10.55715/jaim.v12i3.113

[27] Hemmert, R., Schliep, K.C., Willis, S., Peterson, C.M., Louis, G.B., Allen-Brady, K., *et al.* (2018) Modifiable Life Style Factors and Risk for Incident Endometriosis. *Paediatric and Perinatal Epidemiology*, **33**, 19-25. https://doi.org/10.1111/ppe.12516

[28] Chapron, C., Fauconnier, A., Vieira, M., Barakat, H., Dousset, B., Pansini, V., *et al.* (2003) Anatomical Distribution of Deeply Infiltrating Endometriosis: Surgical Implications and Proposition for a Classification. *Human Reproduction*, **18**, 157-161. https://doi.org/10.1093/humrep/deg009

[29] Koninckx, P.R., Fernandes, R., Ussia, A., Schindler, L., Wattiez, A., Al-Suwaidi, S., *et al.* (2021) Pathogenesis Based Diagnosis and Treatment of Endometriosis. *Frontiers in Endocrinology*, **12**, Article 745548. https://doi.org/10.3389/fendo.2021.745548

[30] Kennedy, S., Bergqvist, A., Chapron, C., D'Hooghe, T., Dunselman, G., Greb, R., *et al.* (2005) ESHRE Guideline for the Diagnosis and Treatment of Endometriosis. *Human Reproduction*, **20**, 2698-2704. https://doi.org/10.1093/humrep/dei135

[31] Becker, C.M., Bokor, A., Heikinheimo, O., Horne, A., Jansen, F., Kiesel, L., *et al.* (2022) ESHRE Guideline: Endometriosis. *Human Reproduction Open*, **2022**, hoac009. https://doi.org/10.1093/hropen/hoac009