

Coelioscopy Surgery in Cameroon: Assessment after 11 Years of Practice

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ABSTRACT

Coelioscopy surgery or laparoscopy is a “minimally invasive” and specialized technique for performing surgery with numerous advantages to classical or traditional “open” surgery. As such, to assess the place of laparoscopy in the state hospitals of Cameroon, we carried out a descriptive retrospective survey of 11 years of practice (2006-2016) in the general hospitals of Yaoundé and Douala as well as the gyneco-obstetric and pediatric hospital of Douala. Data were collected from the registers of patient medical files and surgical reports. Collected data were analyzed with Sphinx Déclic Version 5. Khi2 was the statistical test used. Results obtained reveals that 31.5% of laparoscopy was practiced within a sample of 709 cases. Most concerned with this laparoscopy were women with 94.4% compared to men with just 5.6%. The mean age of the sample size was 33.85 years with extremes at 8 years and 74 years respectively. Gynecological laparoscopy predominated with 89.6%, followed by digestive laparoscopy with 9.7%. We noted equally throughout this study the conversion of laparoscopy to tradition “open” surgery in 5.2% of the cases, motivated by important adhesions in the abdomen.

Keywords: Laparoscopy, Cameroon, Surgery

INTRODUCTION

Laparoscopy is a type of surgical procedure that allows a surgeon to access the inside of the abdomen and pelvis without having to make large incisions in the skin. The development of laparoscopic surgery was clearly a gradual evolution and not a revolution. Since the beginning of laparoscopy under the protection of the French gynecologist Raoul Palmer in 1955, it has witnessed important evolutions regarding materials, diagnosis and therapeutic domains [1]. As such, with the development of new surgical materials, laparoscopy has become a gold standard in the cure of certain surgical pathologies. In fact, laparoscopic surgery has much less discomfort and requires less pain medicine. Patients are able to get up and walk around sooner and get back to their regular activities earlier. They are also less likely to develop wound infections and because patients are able to get out of bed sooner they are less likely to develop blot clots or pneumonia. After the incisions have healed the scars are almost invisible so patients do not have to feel self-conscious at the beach or pool. As a result, approximately 80% of gynecologic surgery is practiced by coelioscopy [2]. The transfer of technology to developing countries concerning laparoscopy is still nowadays limited due to insufficient investment in technical equipment's, limited

human resources and know-how. In Cameroon, this technic has been introduced for the first time in April 1992 at the general hospital of Yaoundé. A study carried out after 5 years of practice in Yaoundé showed that 735 surgeries were practiced with laparoscopy [3]. Today, less review concerning this subject is found written in our local literature; hence, we decided to evaluate the place of this surgical technic in our hospitals here in Cameroon and notably its frequency and complications.

OBJECTIVES

General objective

Establish an assessment of the practice of laparoscopic surgery in Cameroon.

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Specific objectives

- Determine the socio demographic characteristics of concerned patients
- Determine the frequency of laparoscopic surgery
- Identify the surgical indications of this practice
- Describe the principal complications

METHODOLOGY

Type and study period

Descriptive retrospective study going from January 1st 2006 to December 31st 2016, either a period of 11 years of practice.

Data collection duration

Data were collected within a period of 4 months going from April 1st 2017 to July 31st 2017.

Place of study

This study was carried out at the gyneco-obstetric hospitals of Yaoundé and Douala and at the general hospitals of Yaoundé and Douala.

Population source

Surgical patients of the concerned hospitals.

Population size

Concerns the population of all the patients who went through a laparoscopic surgery during procedure.

Inclusion criterion

All laparoscopic surgery in the concerned hospitals with or without conversion to traditional surgery.

Non-inclusion criterion

Laparoscopic surgeries of other sources non-identified and traditional surgery.

Sampling

We went through an exhaustive sampling procedure recruiting all laparoscopic cases without any distinction and a total of 709 patients were enrolled.

Data collection

Data were collected from registers and the different variables concerned were mainly the socio demographic characteristics, preoperative diagnosis, laparoscopic technic of procedure and complications.

Materials for data collection

We used: patients medical files, registers of hospitalization, registers of surgical reports and individual survey files.

Data analysis

Data analysis was made possible by the means of Microsoft Office 2013. The different variables in accordance with the study objectives were taken into account and analyzed by the software sphinx déclic version 5. Khi2 was the statistical test used.

RESULTS

The analysis of data permitted us to obtain the following results:

The evolution of coelioscopy surgery between 2006 to 2016.

The **Figure 1** shows that laparoscopy have evolved by jerks and jumps between 2006 and 2014. And from 2014 to 2016, it observed a net progression as the number of surgery increased from 48 in 2014 to 230 in 2016.

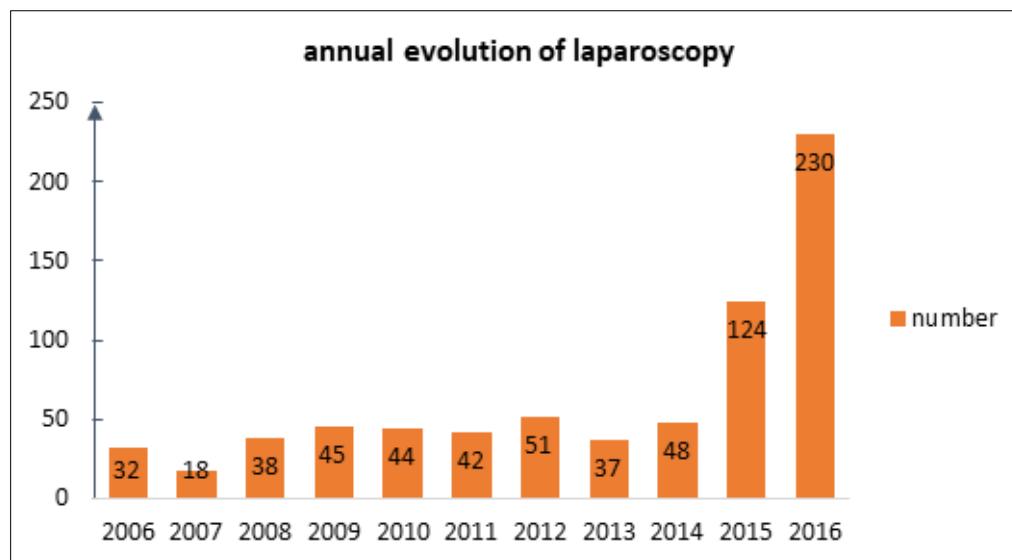


Figure 1. Annual distribution of laparoscopy.

Age distribution

We note that, the age group of 30 years to 39 years was the most represented age group with a rate of 58%. The mean

age of the sample size was 33.85 years with extremes at 8 years and 74 years, respectively (**Table 1**).

Table 1. Distribution of patients following age groups.

Age Group	Numbers (N)	Percentages (%)
<10	1	0.10
(10-19)	17	2.40
(20-29)	165	23.30
(30-39)	411	58.00
(40-49)	84	11.80
>50	31	4.40
Total	709	100.00

Patient's distribution following sex

Almost all the patients were of the female sex with 94.40% (**Figure 2**).

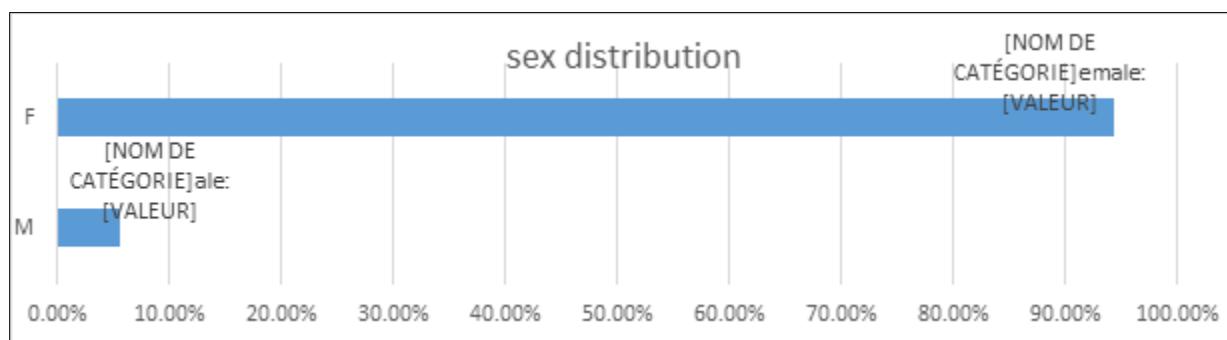


Figure 2. Patients distribution following sex.

Distribution of patients following the type of surgery

The **Figure 3** below shows that laparoscopy is mainly practiced in gynecology with a percentage practice of 89%.

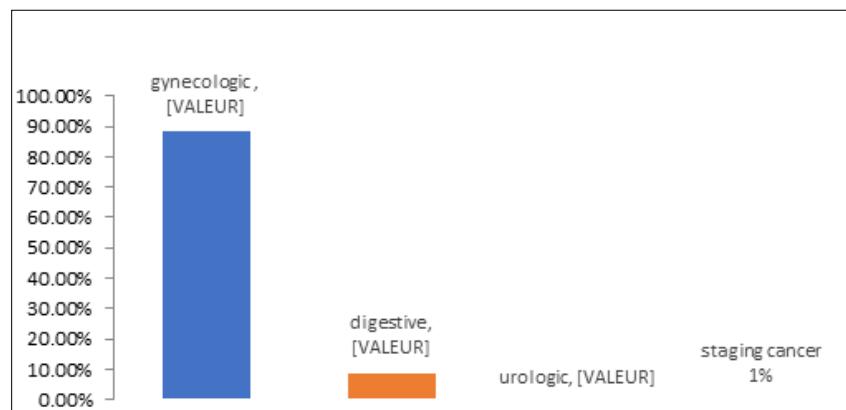


Figure 3. Patients distribution following the domain of surgery.

Evolution of the different types of surgery within years

Coelioscopic surgery in gynecology is the most practiced among the other laparoscopic technics in others surgical domains (**Table 2**).

Table 2. Annual distribution of laparoscopy in different domains.

Years	Gynecology	Digestive	Staging cancer	Total
2016	185	44	1	230
2015	105	17	2	124
2014	43	5	0	48
2013	37	0	0	37
2012	48	2	1	51
2011	42	0	0	42
2010	43	1	0	44
2009	44	1	0	45
2008	38	0	0	38
2007	18	0	0	18
2006	32	0	0	32

Incidents and accidents

We have registered 04 cases of hemorrhage during surgery, 02 uterine perforations, 01 intestine lesion and 01 bladder

lesion. We equally registered 03 cases of gas escape and one trocar defect during surgery. Globally 5% of the laparoscopies were converted to traditional surgery (**Table 3**).

Table 3. Patient's distribution following different incidents and accidents.

Incidents and accidents	Type	Numbers	Percentages (%)
None		696	98.20
Technical incident	Gas escape	03	0.60
	Trocar defect	01	
Hemorrhages		4	0.60
Difficult extraction of organ		0	0.00
Lesion of an abdominal organ	Uterine Perforations	02	0.60
	Intestinal lesions	01	
	Bladder lesions	01	
Total		708	100

DISCUSSION

Among 4426 laparotomies carried out within the period of 2006 to 2016, 1381 laparoscopies were practiced thus 31.2%. This result is slightly less than that reported by Tchuente et al. [4] in Yaoundé who obtained 39.1%. This

may also be as a result of the size of the population studied because we focused only on state general hospitals.

Age

The youngest age sample of this study was 8 years and the oldest 74 years with a means age of 33.85 years. The most

represented age group was that of 30 to 40 years with 58%. Similar results were obtained in Douala with Belley priso et al. [5] and Nana et al. [6] in Yaoundé which are respectively 32 and 32.7 years. Mboudou et al. [7] in Yaoundé obtained a mean age of 31.7 ± 5.4 years with extremes at 6 and 47 years.

Sex

The sample study regrouped 94.4% female and 5.6% male. The high representation of women in this study may be as a result of the great number of gynecological pathologies and preferences for laparoscopy for surgeries.

Type of surgery

Throughout the study, gynecological surgery predominated with 89.6%, followed by digestive surgery with 9.7% and then stating cancer with 0.7%. Results are similar to those of Fe Togola [8] in Bamako who obtained 67.9% practice in gynecology followed by 29.6% practice in digestive surgery. This high rate of gynecologic pathology in this study may be explained by the fact that gynecologic laparoscopy is one of the most ancient technic.

Conversion and motifs

During the course of this study, 5.2% conversion was observed either 37 cases. Among this number were 4 digestive cases and 33 gynecologic cases. Our results look greater than those of Tcheunte et al. [4] who obtained 2.46% conversion from laparoscopy to traditional laparotomy. On the other hand, Sokol et al. [9] obtained 6.3% conversion which is closer to our results. Numerous pelvic adhesions were recorded and were for the most the first reason of conversion with a rate of 41.7% followed by enormous myoma which represented 22.2% and lastly hemorrhages with 13.9%. These tendencies were reported by Coulibaly in 2007 [10].

Perioperative accidents

We recorded 2 perioperative accidents during this study period. It has been reported 4 vascular sections during appendectomy and 2 during extra uterine pregnancy cure. The only case of vascular section in hemorrhages following the section of the lombo-ovarian section is reported by Tcheunte et al. [4]. Two uterine perforations, one intestinal and bladder lesion concords with the three cases of organ lesions reported by Tcheunte et al. [4].

Per operative incidents

Five per operative incidents were recorded in this study, either 0.7%. The incidents were CO₂ escape in three cases and trocar defect in one case. We obtained more incidents than Fosto in Bamako who obtained 0.2% [11].

Post-operative follow up

Post-operative complications in this study was of the order of 4.52%, much less than that of Tcheunte and al. [4] who

obtained 8.3% but a little bit greater than that of Mboudou et al. [7] which is 3.9%. Suppuration of the site of incision was observed in five cases either a rate of 0.7% which is above the values in the other literatures which varies between 0.18% to 0.5% [12-14]. Three cases of peritonitis post-surgery due to organ lesion was recorded and a case of incisional hernia either a rate of 0.14%. This result is similar to that of Tcheunte et al. [4]. One case of death due to peritonitis was registered corresponding to 0.14% in this study.

Hospitalization and post-surgery stay

Study reports 86.3% a hospitalization period of 72 hours with and average stay period of 3.19 days. This result is similar to that of Koumare in 2007 [15]. As for post-surgery stay period, the mean of this study is 1.16 days. Bendinelli in 2002 [16] on the other hand obtained 3.7 days in average. Meanwhile Raiga et al. in Cameroon [17] and Henrion in France [18] obtained, respectively, 3 days and 2.84 days. The longest stay period was 21 days after surgery.

CONCLUSION

The objective of this design study was to assess the activities of laparoscopic surgery in state general hospitals of Cameroon. It results that, the frequency of laparoscopy was of the order of 31.2% within study period of 2006 to 2016. Gynecologic laparoscopy was the most practiced with a frequency of 89.6%. Several morbidities were recorded and dominated by post-surgical procedures related to digestive troubles and infections with respectively 2.12% and 0.85%. At last, laparoscopy is a reality in Cameroon hospitals and proven its efficiency with a mortality rate of 0.14% within 11 years of practice even though still not really practiced. Its practice may be valorized and encouraged by the engagement of public authorities.

CONFLICTS OF INTEREST

Authors declare no conflicts of interest.

AUTHOR'S CONTRIBUTION

Ngaroua and Joseph Eloundou Ngah: conception and planification of the study, supervision.

Aminatou Soufianou, Djibrilla Yaouba and Dah'Ngwa Dieudonné participated to the literature review and writing of this work.

SPONSORSHIP

Declared none.

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