



CONTRIBUTION OF COELIOSCOPIC SURGERY IN THE HEALTHCARE MANAGEMENT OF FEMALE INFERTILITY IN CAMEROON

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Abstract

694 patients with either secondary or primary infertility were subjected to laparoscopy during the period of January 2006 to December 2016 at the general hospitals of Yaoundé and Douala as well as the gynecology/obstetric and pediatric hospitals of Yaoundé still and Douala. The techniques used were mainly laparoscopic adhesiolysis in 35.9%, followed by laparoscopic fibroplastia in 17.4% case. The frequency of laparoscopic surgery in the units was 63% and the average years of infertility within the sample was 6.84 years. Regular patient follow up after surgery permitted to 83% of the sample to become pregnant. The study was mainly a cross-sectional descriptive study with a retrospective data collection period of 10 years. Hence, the study suggest that, laparoscopic surgery occupies a place of choice for diagnosis and therapy of female infertility in our society.

Key words: laparoscopy, infertility, care management

INTRODUCTION

The unsatisfied desire to have a child is a disease recognized by the world health organization (WHO) and it is a major problem faced by our societies today [1]. Infertility as defined by the WHO is the inability of a sexually active, non-contracepting couple to achieve pregnancy in one year [2]. Infertility affects more than 80 million of couples in the world with a greater prevalence in developing countries [3]. Thus, in Cameroon, 20 to 30% of couples suffers from infertility with variable prevalence from one region to the other: 13% in the north-west region against 28.4% in the far-north region [4]. In Cameroon, it is dominated by secondary infertility with a frequency of 60.6% followed by primary infertility with 39.4%. The principal means of care is medical and surgical. Surgery have seen its curative means ameliorated by progress made in the domains of microsurgery and coelioscopy surgery [6]. It is in this sphere of influence that laparoscopic surgery entered Cameroon during the years 1990 as in several African countries like Senegal in 1995 and Ivory Coast in 1999 [7].

Hence, in Cameroon just like anywhere in Africa, investment insufficiencies in materials, training difficulties and formation and the nature of pathologies encountered sets the problem of the place of laparoscopy in the care management of gynecologic pathologies and particularly that of the female infertility. As such, this study's general objective was to evaluate the contribution of laparoscopic surgery in the treatment of female infertility in Cameroon (HGY, HGD, HGOPY and HGOPD) and more specifically to:

- Describe the epidemiological, clinical and para-clinical aspects of the patients;
- Present the surgical procedures of the operation;
- Resorts the frequencies and permeability's of fallopian tube during surgery
- Evaluate the rate of fecundity post-surgery

METHODOLOGY

The study was a descriptive cross-sectional survey with retrospective data collection from the units of the room theaters of the general and gynecology/obstetric and

pediatric hospitals of Yaoundé and Douala. Only well documented medical files of the patients that underwent laparoscopic surgery for infertility within the period of January 2006 to December 2016 were analyzed. For each patient, we established an individual survey questionnaire upon which the following parameters were collected:

- Socio-demographic and clinical parameters such as age, type of infertility, and past history;
- The surgical procedure, type, technic and whether conversion to classical surgery or not;
- Post-surgical follow up particularly regarding fecundity after surgery.

Inclusion criteria:

- Patients with complete medical file who have been diagnosed for infertility and went through a laparoscopic surgery.
- Patients in recovery phase after surgery for infertility

Non-inclusion criteria:

- Patients with incomplete medical files
- Non-consented patients who refused to participate to the study

The Sampling process was an exhaustive consecutive non probabilistic sample following a clear consent from the inclusion criteria mass population.

For data collection, we used the following materials:

- Patients medical files;
- Surgical report register;
- Patients phone numbers
- Data collection prepared files;

Concerning the treatment and analysis of data, quantitative and qualitative data were collected and analyzed by Sphinx Plus² edition lexica V.5.1.0.7, Microsoft word and

Excel 2010. The variables were treated following the current statistic methods, the results are then presented in tables and figures and graphs through percentages.

RESULTS

a- Socio-demographic characteristics

During study period, 694 patients medical files in whole participated to this study amongst which, most of them were of Cameroonian nationality. The sample was mainly an urban population with an average age of 32.79 years and extremes at 19 years and 47 years respectively. More than half of the sample size belonged to the age group of 30 to 35 years.

Concerning clinical data, 174 women presented a past history of pelvic infection, 144 women had a spontaneous or induced abortion in the past. Yet, secondary infertility was the most frequent with an average year of 6.84 years. Echo graphic images revealed uterus myoma in 40.30% of the cases whereas, **hysterosalpingography** (HSP) revealed for most, a bilateral obstruction of the fallopian tube at the distal regions as a result of the presence of a **hydrosalpinx** in 39.5% case.

b- Surgical data

- Results of the action of blue methyl after surgery

Table1: distribution of patients following blue methyl action after surgery

Fallopian tube aspect	Number (n)	Frequency (%)
Distal unilateral tubal obstruction	56	10
Proximal unilateral tubal obstruction	68	12.2
Distal bilateral tubal obstruction	47	8.4
Proximal bilateral tubal obstruction	74	13.2
Bilateral heterogenous tubal obstruction	25	4.5
Bilateral permeability	238	42.6
Unilateral permeability	51	9.1
Total	559	100

- Laparoscopic surgical procedure and technic

Table2: distribution of patients following surgical procedure

Surgical procedure	Number (n)	Frequency (%)
Adhesiolysis	566	81.60%
Fibrioplasty	275	39.60%
Myomectomy	100	14.40%
Kystectomy	132	19.00%
Neostomy	237	34.10%
Aspiration	58	8.40%
Others	209	30.10%
Total	694	

- Conversion from laparoscopy to classical surgery

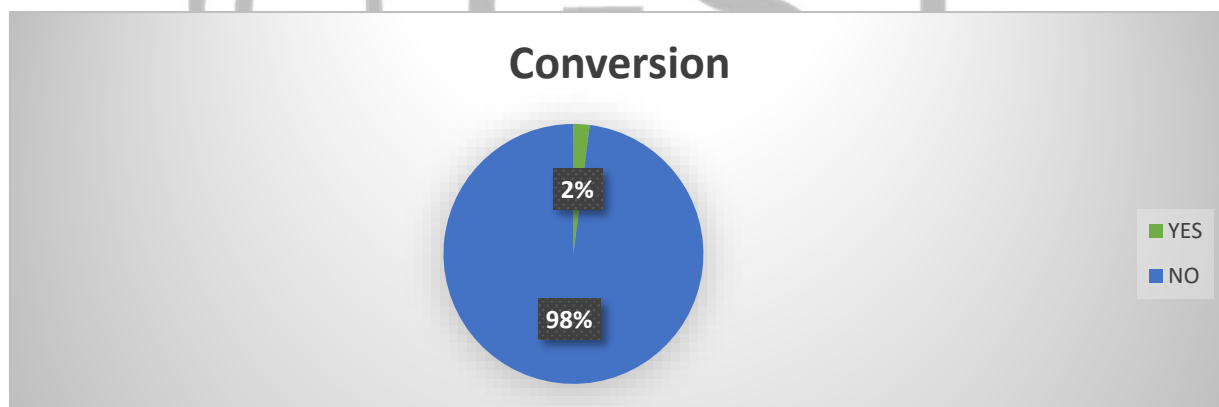


Figure 1

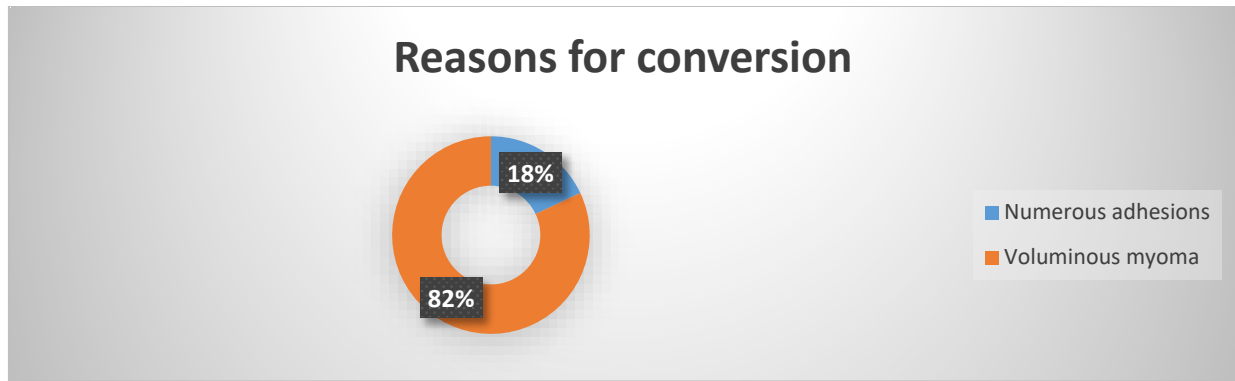


Figure 2

Figure1 and 2: distribution of patients following the conversion of their surgical procedure from laparoscopy to classical open surgery and the reasons for these conversions

c- Post-operative follow-up

- Post-op stay period

Table3: post-op stay period patient’s distribution

Period of hospitalization (days)	Number (n)	Frequency (%)
Less than 5	646	94.9
From 5 to 9	29	4.3
From 10 to 14	3	0.4
From 15 to 19	0	0.0
From 20 to 24	1	0.1
From 25 and above	2	0.3
Total	681	100

The average post operation hospital stay period was 2.95+/-1.96 days.

- Presence of an infertility factor in post-op

The phone numbers of 215 patients permitted us to follow 49 patients. Among the 49 patients, 8 of them still had some infertility factors whereas 39 didn't. The figure below shows their distribution.

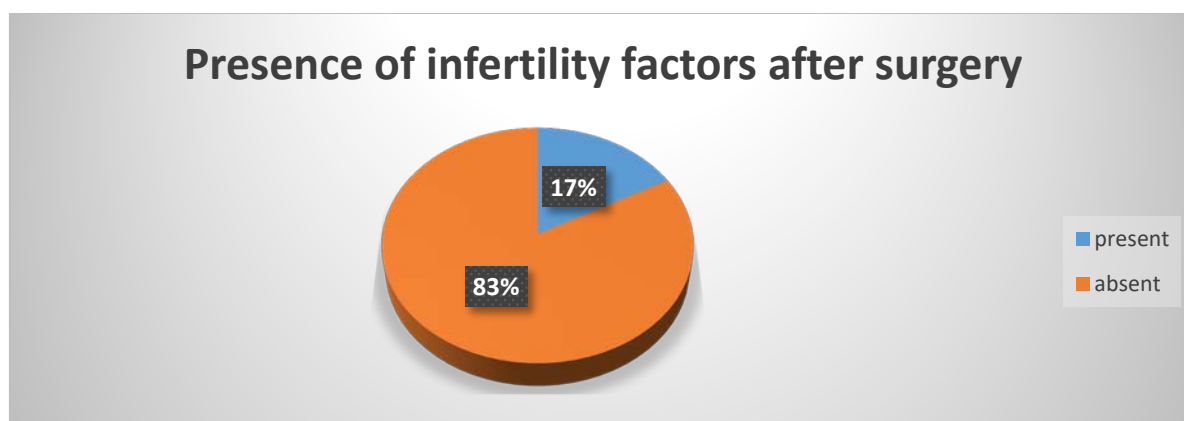


Figure 3: infertility factor presence after laparoscopy for the 49 women followed up

- Variation of the pregnancies after laparoscopy

In the course of this study, female pregnancy results after laparoscopy was less than or equal to 18 months for 5 patients. Then extra uterine pregnancies were the most frequent with 93.3% of the cases, hence, the variation resulted to a 64.1% birth of a normal living baby. Below is a distribution of the variations of pregnancies in women after laparoscopy.

Pregnancy variations	Number (n)	Frequency (%)
Pregnant	8	20.5
Spontaneous abortion	6	15.4
Living foetus	25	64.1
Total	39	100

DISCUSSION

In the room theaters of our hospitals of study, laparoscopic surgery was mainly indicated for gynecologic pathologies. The frequency of tubal laparoscopy was of the order of 63.09%. It is similar to that of FOGANG who obtained in a study a frequency of 61.71% in Mali (2013) but less greater than that of TSACHOUA who obtained 72.03% in Mali (2006). The difference may be as a result of the fact that we considered in the course of this study all infertility cases whereas TSACHOUA considered only

infertilities concerned with the fallopian tube. Also, ageing is a factor of infertility. This is so because, a women aged 35 years have less than 5% chances of getting pregnant which constitute a state of hypo fertility. And, the rate of fecundity becomes null at menopause [11]. In this study, obtained results are similar to that of SALMA AIT where it is 33 years in morocco (2008).

The constant of this age in reviews and literatures, may be as a result of the fact that, at this age, the woman is at mid procreation period and the desire to get pregnant is very high. Furthermore, all the socio-professional groups were represented in the study with housewives predominance, similar with Malian data studies [35, 36, 38]. This may be the consequence of the fact that, in Africa and Cameroon in particular, housewives constitute the greater portion of the female population an age of procreation. However, most of the women had no medical nor surgical past history. The notion of repeated genital infection was observed in the studies of SINDHU and TRAORE Y. The frequency of this genital infection may be as a result of the recrudescence insufficient or bad body hygiene and sexually transmissible infections and post-abortions badly treated or not treated at all. Which gives the fallopian tube a macroscopically abnormal aspect at coelioscopy because of adhesions. Obtained results are different from those of TSACHOUA who obtained instead a predominance of hydro **salpinx** with 24.6%. This observed difference may as such be because of the non-consideration of tubal adhesions by the authors. In fact, pelvic adhesions, mostly after-effects of surgical interventions and infections are frequent causes of tubal infertility. Blue methyl action revealed a predominant bilateral distal tubal obstruction before surgery. However, after surgery, the tubes were permeable. This explains the efficiency of surgery in these tubal obstructions. As such, these obstructions remains the principal indication of laparoscopy. We recorded during this study a 75.9% discordance between the results of the HSG and that of the action of blue methyl. This discordance is equally found in reviews [35,36,44,46,47]. The major reasons for this discordance may be the existence of functional spasm at the uterine horns, viscosity of

the products of radiographic contrasts and wrong obstructions when the contralateral passage is heavy.

Concerning surgery and technics, pelvic adhesiolysis constituted the main therapy. The procedures were realized with minimally invasive technics which brings out the benefits of laparoscopic surgery compared to open classical surgery. But, obtained results differs from that of FOGANG still because in his study, he considered equally associate technics. Nevertheless, the decision of conversion remains a wise decision because for the most it permits to minimize per operative complications. Hence, the conversion for open surgery was less frequent because most of the gynecologist of the study carried out by FOGANG had a good mastery of laparoscopic surgery. In fact, our hospitals of study, a part of the gyneco-obstetric and pediatric hospital of Douala, the most recent, all have at least 15 years of professional experience. In addition, the average hospital stay period was 2.95 ± 1.96 days. This result is near to that recommended in reviews, that is 2 to 3 days [7,38,39]. hence coelioscopy greatly reduce hospital stay period.

CONCLUSION

Evaluate the contribution of laparoscopic surgery in the treatment of female infertility was the principal objective of this study. We retain as such that, the average infertility period of women in this study was 7 years and mainly concerned secondary infertility related for the most to after-effect infections. The best means of exploration and tubal permeability check-up of the related lesions is coelioscopy. It is so because it permits to put in evidence lesions that cannot be revealed by hysterosalpingography and equally treats them. Adhesiolysis, fibroplastia and salpingostomy are the therapeutic procedures carried out in distal tubal obstructions and give as results: 97% intra uterine pregnancies and 3% extra uterine pregnancies. Majority of the pregnancies come up immediately the year following surgery. It is therefore establish that,

coeloscopy have taken an important place not only for diagnosis of female sterility but equally in the treatment management of infertility in general.

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