

*Research Article*

## Analysis of Diagnostic and Operative Laparoscopy with or without hysteroscopy in the Department of Obstetrics and Gynecology at Minia Maternity University Hospital from 2016 to 2019

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### Abstract

**Introduction:** One of the greatest transformations within the history of surgery has been the paradigmatic shift away from open surgery and into operative video-laparoscopy. Many have described the advent of operative video laparoscopy as a change to surgery as “revolutionary to this century as the development of anesthesia was to the last century” (Medina, 2001). **Patients and Methods:** This is a retrospective and prospective study to investigate and analyze the indications, procedures, findings and complications of diagnostic and operative laparoscopy at Minia maternity university hospital obstetrics and gynecology department from 2016 to 2019. **Results:** The study base was mainly built on 1052 cases had laparoscopy± hysteroscopy for different indications, during period of 2016, 2017, 2018 and 2019

**Keywords:** Operative Laparoscopy, hysteroscopy, greatest transformations

### Introduction

One of the greatest transformations within the history of surgery has been the paradigmatic shift away from open surgery and into operative video-laparoscopy. Many have described the advent of operative video laparoscopy as a change to surgery as “revolutionary to this century as the development of anesthesia was to the last century”<sup>(1)</sup>.

Laparoscopy is an invasive diagnostic, evaluation, and surgical method. Advances in imaging and instrumentation have resulted in an increase in surgical experience; as a consequence, laparoscopy, which was initially used in a few simple surgical procedures such as diagnostic purposes and tubal ligation, has become an acceptable, and even preferred, alternative to open surgical procedures<sup>(2)</sup>.

For centuries, gynecologists have been concerned by the elusive nature of pelvic pathology, and women have undergone unnecessary surgery for such problem<sup>(3)</sup>.

Laparoscopy, since its introduction into gynecology two decades or so ago, has become an essential diagnostic tool. More recently, it has promoted as a mean of treatment as well<sup>(4)</sup>.

The therapeutic options opened to laparoscopic surgeon are many and varied from simple adhesiolysis to excision of dense endometriotic tissue and even myomectomy, hysterectomy and lymphadenectomy are now possible without open surgery<sup>(5)</sup>.

Laparoscopy has become an alternative technique for carrying out many operations that have traditionally required an open approach. The benefits of minimal access surgery have been well recorded, including lower post-operative morbidity, shorter duration of hospital stay and a shorter return to work. This is often difficult to obtain by a conventional laparotomy, as magnification is not available, and the surgeon’s hands and large instruments often obscure the operative field<sup>(6)</sup>.

This study will discuss introducing operative laparoscopy into Minia Maternity University Hospital to highlight the problems and difficulties encountered. However, one of the important issues in this study is to analyze the impact of introducing such technology on patients’ health and hospital resources and to address the question of why some of these cases managed by operative laparoscopy were converted into laparotomy and were there any factors that could predict such conversions<sup>(7)</sup>

Patients managed by operative laparoscopy with or without hysteroscopy in the department of obstetrics and gynecology at Minia Maternity University Hospital are increasing moreover, operative endoscopic surgery is still in its infancy. There is much to be learned: which procedure should be done via the laparoscopic versus the laparotomy approach; which procedures involve complication rates too high to justify their performance; whether a reduced hospital stay for certain procedures justifies increased operating time and whether procedures can be made less costly by changing the method or instrument <sup>(8)</sup>.

**We need to describe our own experience to enhance it later depending on our own variables.**

**Patients and Methods**

This is a retrospective and prospective study to investigate and analyze the indications, procedures, findings and complications of diagnostic and operative laparoscopy at Minia maternity university hospital obstetrics and gynecology department from 2016 to 2019.

[This hospital is a tertiary care center. It serves the population of women in Minia city as well as it is a referral center for district hospitals and Obstetrics and Gynecology departments in other hospitals in the governorate.]

**Ethical issues**

The ethical committee of the department of Obstetrics & Gynecology at Minia College of medicine approved the study on 13 July 2019 (Minia University reference serial number: MUEOB00052).

All Participants had signed a written informed consent after they have been made aware of the purpose of the study, interventions, outcome and possible complications.

**Study population**

This study included 1052 patients admitted to Obstetrics and Gynecology department, Minia maternity university Hospital and subjected to laparoscopic surgery and hysteroscopy, if any, as an investigative or therapeutic procedure for their complaints.

**The medical records found were collected and reviewed for the following data:**

Full history including age, marital status, residence, occupation, special habits of medical importance, menstrual history, obstetric history

(gravidity and parity), contraception history, main complaint and its duration as failure to

conceive, menstrual irregularity, amenorrhea, pelvic pain, and so on...., any medical disorders, any medications received, any investigations done.

- Full examination: general, abdominal and pelvic.
- Laboratory investigations: complete blood count, liver function tests, kidney function tests, urine analysis and fasting and 2 hours post prandial blood sugar levels in some cases.
- In addition to: hormonal profile (e.g. FSH, LH, progesterone, prolactin levels), pregnancy test, evaluation of tubal patency by HSG, as well as evaluation of male factor in cases of infertility.
- Ultrasound examination (2D).
- X-rays, CT scan, MRI and karyotyping results in special cases whenever available.
- Indications for laparoscopy, diagnostic or operative, and hysteroscopy.
- Informed consents were given by all patients in their medical records.
- Laparoscopic and hysteroscopy reports were collected and revised for the findings (uterine, tubal, ovarian, peritoneal findings, etc...) and procedures done.
- Complications of laparoscopy, if any and cause of failure in cases of failed laparoscopy and/or hysteroscopy.
- Whenever combined laparoscopy/ hysteroscopy done, results of hysteroscopy were reviewed.

**Inclusion criteria:**

All cases whose laparoscopy reports are available regardless availability of full history sheet and investigations.

**Exclusion criteria:**

Cases whose laparoscopy reports are not available.

**Follow up**

Post-operative results and outcome were noted after data collection from cases by telephone conversations.

**study Design:**

Retrospective analytical study

**equipments**

all examinations were performed with a scanner (power vision 6000 toshiba, Tokyo, Japan) Doppler

all laparoscopic and hysteroscopic procedures were performed with STORZ “KARL STORZ—ENDOSKOPE” set model 202210 20

#### **Data analysis**

1- Descriptive statistics will be used to summarize all study observations.

2- Standard t-tests or the Mann-Whitney U tests will be used for comparison between different indications, findings, management and outcome of laparoscopy±hysteroscopy

#### **Results**

The study base was mainly built on 1052 cases had laparoscopy± hysteroscopy for different indications, during period of 2016, 2017, 2018 and 2019

Laparoscopy was indicated as a part of work up for infertility in 692 patients (65.77%) as well as ectopic pregnancy in 120 cases (11.4%), missed IUD in 80 cases (7.6%), acute lower abdominal pain in 69 cases (6.6%), vaginal bleeding in 64 cases (6.1%), habitual abortion in 21 cases (2%), scar pregnancy in 4 cases (0.4) and laparoscopic hysterectomy in 2 cases (0.2%)

**Table 1: indications of laparoscopy ± hysteroscopy at minia maternity university hospital, obstetrics and gynecology department during 2016, 2017, 2018 and 2019**

<b>Indication s</b>	<b>Number of cases</b>	<b>Percentages</b>
<i>Primary infertility</i>	344	(32.7%)
<i>Secondary infertility</i>	348	(33.1%)
<i>Missed IUD</i>	80	(7.6%)
<i>Ectopic pregnancy</i>	120	(11.4%)
<i>Lap hysterectomy</i>	2	(0.2%)
<i>Scar pregnancy</i>	4	(0.4%)
<i>Vaginal bleeding</i>	64	(6.1%)
<i>Habitual abortion</i>	21	(2%)
<i>Acute lower Abdominal pain</i>	69	(6.6%)
Total number of cases with available reports in these years = 1052		

This table show that infertility (primary and secondary) is the most common indication of laparoscopy ± hysteroscopy during this period

**Total number of reports found:** these 1052 cases are which their reports were found and they represent nearly 87% of total number of cases who were admitted for laparoscopy± hysteroscopy which was 1209 cases

#### **\*age groups of cases submitted to laparoscopy± hysteroscopy**

**Table 2: range of age in patients who submitted to laparoscopy± hysteroscopy in this study**

Age group	Number of cases	Percentages
10-15	1	(0.1%)
16-20	100	(9.5%)
21-25	336	(31.9%)
26-30	276	(26.2%)
31-35	165	(15.7%)
36-40	116	(11%)
41-45	20	(1.9%)
46-50	24	(2.3%)
51-55	2	(0.2%)
56-60	4	(0.4%)
>60	8	(0.8%)

The table shows that most common age group has been 21-25 years old, and ranged between Range (15-74) Mean  $\pm$  SD 28.7 $\pm$ 7.9

### Discussion

Our study included 1052 cases had laparoscopy  $\pm$  hysteroscopy for different indications, during period of 2016, 2017, 2018 and 2019.

Laparoscopy was indicated as a part of work up for infertility in 692 patients (65.77%) as well as ectopic pregnancy in 120 cases (11.4%), missed IUD in 80 cases (7.6%), acute lower abdominal pain in 69 cases (6.6%), vaginal bleeding in 64 cases (6.1%), habitual abortion in 21 cases (2%), scar pregnancy in 4 cases (0.4%) and laparoscopic hysterectomy in 2 cases (0.2%) of total number of cases<sup>(9)</sup>

The range of age in this study was 15-74 years with mean of 28.7 years. The most common age group was 21-25 years old.

Most of our cases were of infertility, ectopic pregnancy and missed IUD.

And so, I will discuss and compare each indication of these cases separately.

#### As regard infertility

In this study 692 cases which represent 65.7% of total number of cases presented by infertility which were primary or secondary. 152 women had both hysteroscopy and laparoscopy performed, 484 had only laparoscopy and while 56 – only hysteroscopy<sup>(10)</sup>.

As regard the age: in this study 464 cases represent 67.05% of 692 cases were between 20-29 years old and 72 cases represent 10.4% of total number of infertility cases were above 35 years old.

Siam (2014) reported 70.45% of her 4103 patients were between 20-29 years.

Maheshwari et al., 2008 reported that 71.3% of patients were between 20-29 years old. Female age is considered the most detrimental factor. Patients above 35 years old usually have lower conception rates in both spontaneous and assisted pregnancy.<sup>(10)</sup>

In Bonneau et al., (2012) study mean age of his infertile group of 114 patients was 32.2 $\pm$ 4.54.

Mediros et al., (2012) in his 237 infertile patients admitted to have laparoscopy found the mean age was 31.6 $\pm$ 4.6

As regard type of infertility (primary or secondary): in our study 344 cases represent 49.7% of total number of infertility cases were primary and 348 cases represent 50.3% of total number of infertility cases were secondary

Bonneau et al., (2012) reported that 73.7% of his patients suffered of primary infertility and 26.3% had secondary infertility.

Siam (2014) found 71.8% had primary infertility and 28.2% had secondary infertility.

**As regard duration of infertility:**

Duration of infertility among the 692 patients ranged from 2-20 years in primary infertility cases with a mean duration of 5.3 and ranged from 2-18 years in secondary infertility cases with mean of duration of 5.3.

**As regard most common findings:** According to our study 112 cases represent 32.2% of total number of primary infertility cases and 88 cases represent 25.6% of total number of secondary infertility cases (totally 200 cases represent 28.9% of total number of infertile cases) were unexplained (no laparoscopic or hysteroscopic finding)

In unexplained infertility the incidence ranges from 48.0% to 87.0% (11).

In Our study through laparoscopy±hysteroscopy A definite pelvic pathology was diagnosed in 71.09 % of cases.

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