International Journal of Gynaecology and Obstetrics Research
www.gynaecologyjournal.in
E-ISSN: 2663-3612, P-ISSN: 2663-3604
Received Date: 10-08-2019 Accepted Date: 13-09-2019; Published: 20-09-2019
Volume 1; Issue 4; 2019; Page No. 45-48

Laparoscopic evaluation in primary infertility in females at Aswan university hospital

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Abstract
Introduction: Infertility, one of the most common conditions confronting gynaecologists, is known as inability to conceive after 1 year of regular unprotected marital life.
Infertility is a problem of global proportion. The World Health Organization (WHO) estimates 60–80 million couples worldwide suffer from infertility.
Laparoscopy is the gold standard for diagnosing tubal and peritoneal disease, endometriosis and adhesions because no other imaging technique provides same degree of specificity and sensitivity. Aim of this study is to evaluate causes of primary infertility by diagnostic laparoscopy.
Patients and Methods: This retrospective study include 34 women admitted in Obstetrics and Gynecology Department, Faculty of Medicine, Aswan University, Aswan, Egypt with 1ry infertility for diagnostic laparoscopy meeting the inclusion and exclusion criterion was included.
Results: In the present study mean age was 30 years. No patient was above 40 years of age. Maximum patients i.e 35.29% were in age group of 26-30 years In the present study, most cases were presented with tubal factor of infertility 38.23% followed by ovarian factor of infertility in 23.52% followed by Peritoneal factor of infertility in14.70% followed by uterin and mixed factor of infertility in8.82% for each Normal study were found in 5.88%
Conclusion: Laparoscopy plays a valuable role in the evaluation of infertility. In current study, laparoscopy helped to detect a cause in 90% of the infertile patients. large number of patients having tuboperitoneal factor for infertility (61.75%),

Keywords: laparoscope, evaluation, tubal factor and primary infertility

Introduction

Infertility, one of the most common conditions confronting gynaecologists, is known as inability to conceive after 1 year of regular unprotected marital life [1].
Infertility is a problem of global proportion. The World Health Organization (WHO) estimates 60–80 million couples worldwide suffer from infertility [2].
Infertility varies across regions of the world and is estimated to affect 8–12% of couples all over the world [3].
Infertility is divided into two types. Primary infertility: in which no previous pregnancy has occurred. Secondary infertility: in which a prior pregnancy, although not necessarily a live birth, has occurred, including ectopic pregnancy [4].
The female factor contribute most (i.e. 40-55%) in the aetiology of infertility followed by male factors (i.e 30-40%), both male and female (10%) and unexplained (10%) [5].
Any infertile couple should be investigated after one year of regular unprotected exposure with adequate frequency. The interval is however, shortened to 6 months after the age of 35 years of female and 40 years of male [6].
Incidence of different causes varies among centres, partly because of difference in referral population. Also, in a significant number of patients, infertility will have multiple causes, and thus every couple must have a complete evaluation even if one problem area is readily found [7].
The tubal and peritoneal pathology is among the most common causes of infertility, being primary diagnosis in approximately 30-35% of both younger as well as older infertile couples [8].
Laparoscopy is the gold standard for diagnosing tubal and peritoneal disease, endometriosis and adhesions because no other imaging technique provides same degree of specificity and sensitivity [8].
Laparoscopy with direct visual examination of the pelvic reproductive anatomy is the only method available for specific diagnosis of peritoneal factors that may impair fertility. It is also helpful in diagnosing uterine and ovarian factors. The practice committee of American Society of Reproductive Medicine (ASRM) suggests that laparoscopy should be done before applying aggressive empirical treatments involving significant costs and/or potential complications [9].

Objectives

Aim of this study is to evaluate causes of primary infertility by diagnostic laparoscopy. To visualize tubal morphology and patency. To study the external surfaces of internal pelvic organs and identify local pathology of uterus, tubes, ovaries, peritubal and periovarian adhesions responsible for infertility.

Patients and Methods

This retrospective study include 34 women admitted in Obstetrics

and Gynecology Department, Faculty of Medicine, Aswan University, Aswan, Egypt with 1ry infertility for diagnostic laparoscopy meeting the inclusion and exclusion criterion was included.

Inclusion Criteria

The following criteria are included in the study:

1. Patients with primary infertility after excluding the exclusion criteria reporting to the hospital.
2. Age between 20-40 years
3. Normal semen analysis of the male partner.

Exclusion Criteria

The following criteria are excluded from the study:

1. Male factor infertility.
2. Couples who had not lived together for 12 months
3. Patients with absolute or relative contraindications for laparoscopy.
4. Hyperprolactinemia or thyroid function abnormalities.
5. lack of consent

All patients underwent standard infertility evaluation including complete history including sexual history, physical examination with special reference to secondary sexual characters, thyroid examination, abdominal, and per vaginal examination.

All baseline investigations, male semen analysis, and hormonal analysis including follicle-stimulating hormone (FSH), luteinizing hormone (LH), thyroid-stimulating hormone, serum progesterone day 21, anti-Mullerian hormone (AMH), and serum prolactin were done. TVS with antral follicle count (AFC) and hysterosalpingography were also done. Laparoscopic evaluation was done as per standard guidelines.

The data were collected on a pro forma and various laparoscopic fndings in primary, secondary, and total cases of infertility were noted. SPSS were used to carry out the statistical analysis of data. Data were analyzed with the help of descriptive statistics, namely percentages, means, and standard deviations and presented by means of bar and pie diagrams

Results

In the present study mean age was 30 years. No patient was above 40 years of age. Maximum patients i.e 35.29% were in age group of 26-30 years followed by29.41% in age group of 31-35 years followed by23.52%% in age group of 20-25 years and 11.76% in age group of 36-40 years (Table 1)

Table 1: Age distribution in primary infertility.

Age groups (years)	Number of cases	Percentage
20-25	8	23.52%
26-30	12	35.29%
31-35	10	29.41%
36-40	4	11.76%
Total	34	100%

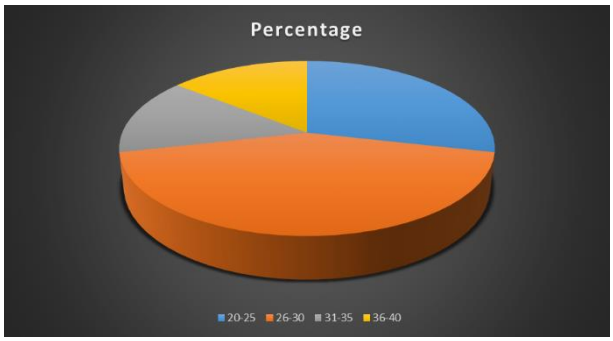

Fig 1

Table 2: Distribution according to duration of primary infertility.

Duration of infertility	Number of cases	Percentage
1-5 years	13	38.23%
6-10 years	18	52.94%
>10 years	3	%
Total	34	100%

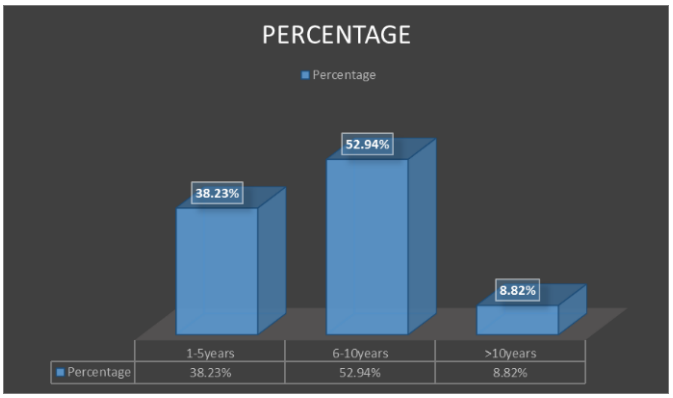

Fig 2

In the present study, most cases were presented with tubal factor of infertilityy 38.23% followed by ovarian factor of infertility in 23.52% followed by Peritoneal factor of infertility in14.70% followed by uterin and mixed factor of infertility in8.82% for each Normal study were found in 5.88% (Table 3)

Table 3: Causes of infertility at laparoscopy

Laparoscopic finding	Number of cases	Percentage
Uterine	3	8.82%
Tubal	13	38.23%
Ovarian	8	23.52%
Mixed	3	8.82%
Peritoneal	5	14.70%
Normal study	2	5.88%
Total	34	100%

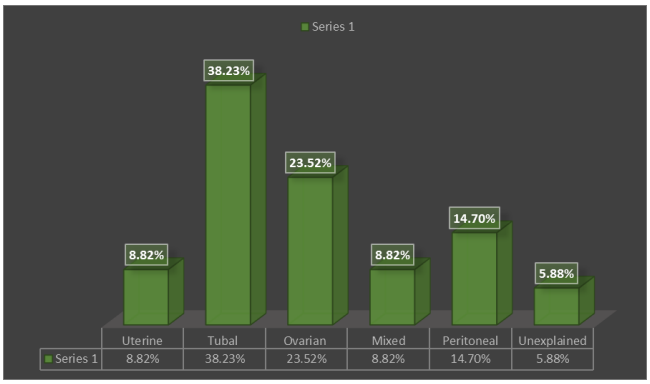

Fig 3

Discussion

The work up of an infertile female has to be done with all the possible means available to the attending gynaecologist. The use of diagnostic and now operative laparoscopy has increased the available armamentarium to the surgeons managing infertility [10].

The advantage of the use of laparoscopy for management of infertility lies in its direct visualization of the passage of the dye through the tubes and the fimbrial end of the tubes. As compared to (HSG) the results are much better. The fallopian tube can now be examined directly in real time under magnification and in its natural habitat under physiological conditions [11].

However it is pertinent to mention that laparoscopy is an invasive procedure and all the complications associated with general anaesthesia and the laparoscopy can be occurred. It is essential that the surgeon performing the procedure is properly trained and experienced in laparoscopy. Woman has to be properly counselled andall the known complications should be identified [12].

In the current study, most cases were in age group of 26-30 years (35.29%). This results disagree with Ruby *et al* [13] who found that most cases were in age group of 21- 25 years (37.5%). But in agree with Shamim *et al*, [14] who found that maximum number of patients were in age group of 26-30 years (47.4%), Shetty *et al* [15] also observed same distribution (32.35%) In the current study duration of infertility was 6-10 years in 52.94% cases. This results disagree with Bhatia *et al* [16] (51.51%) and Kanal and Sharma [17] (47%) they found that maximum patients with 1-5 years of infertility. Shetty *et al* [15] also observed that most of patients of primary infertility had duration of 1-5 years (67.6%).

In the current study, most cases were presented with tubal factor of infertility 38.23% followed by ovarian factor of infertility in 23.52% followed by Peritoneal factor of infertility in14.70% followed by uterin and mixed factor of infertility in8.82% for each Normal study were found in 5.88% Kanal and Sharma [17] did a study of primary infertility in females by diagnostic laparoscopy, found tubal blockage in 22.5% cases, pelvic TB, fibroid, ovarian enlargement and hypoplastic uterus in 5% each and normal study in 30%.6 Shamim *et al* (14) observed 22.22% cases of tubal blockage, 18.5% with adhesions, 9.25% of PCOD, 7.4% each had endometriosis and fibroid, 3.7% each of hydrosalpinx and mullerian anomalies while 29.6% patients had normal study.15 Butt *et al* (18) in her study observed tubal blockage in 47.5% patients, 7.5% each of adhesions and mullerian anomalies, 2.5% each of pelvic TB, fibroid and ovarian enlargement while 37.5% patients had normal study.

Conclusion

Laparoscopy plays a valuable role in the evaluation of infertility. In our study, laparoscopy helped to detect a cause in 90% of the infertile patients. large number of patients having tuboperitoneal factor for infertility (61.75%), for which laparoscopy is the gold standard, laparoscopy is a very effective procedure in evaluating these infertile women and thus to plan appropriate management. Also least expected conditions like endometriosis on clinical evaluation, can be diagnosed and treated with ease on laparoscopy.

Ethics committee approval and Informed consent

All patients were counselled on the processes of laparoscopy. Informed consent for the process, and for using results for training and research was obtained from subjects of the study. Anonymity of individual patients was maintained by coding. The study was approved by the local Ethics Committee.

Acknowledgments

Authors would like to acknowledge to all doctors and staff of Department of Obstetrics and Gynaecology, Aswan university Hospital for their sincere support and help.

Funding: No funding sources Conflict of interest: None declared

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