ORIGINAL ARTICLE

Diagnostic Laparoscopy as a Gold Standard Investigation in Sub-Fertility

[1]ANISA KAMAL, [2]SONIA NAQVI, [3]SARDAR MUHAMMAD AL-FAREED ZAFAR, [4]IRUM AFZAL, [5]FAREEDA ASIF, [6]SHAFIQ AHMAD

[1]Assistant Professor obstetric and gynaecology Sir Syed Hospital, [2]Associate Professor Obstetrics and gynaecology Sir Syed Hospital, Cell # 0300 8248208, Email: sonia_naqvi@hotmail.com, Professor Gynecology FJMC/SGRH Lahore [3]Senior Registrar, Health Care Centre (Pvt.) Ltd. Peshawar, [4]Registrar, Health Care Centre (Pvt.) Ltd. Peshawar, [5]Professor, Health Care Centre (Pvt.) Ltd. Peshawar
Correspondence: Dr. Anisa Kamal, Assistant Professor obstetric and gynaecology Sir Syed Hospital
Email: anisakamal5@gmail.com, Cell # 0321 3820895

ABSTRACT

Objective: Diagnostic Laproscopy as a Gold standard investigation in patients with sub-fertility.
Study Design: Retrospective descriptive study.
Place and duration: Health Care Centre (Pvt.) Ltd. Peshawar from 2nd May 2012-15th August 2012.
Material and Methods: We reviewed case records of all the patients who underwent diagnostic laparoscopy for their sub-fertility. Data was collected from patients case records between 2 May 2012 to 15 August 2012 in department of obstetrics and gynaecology Health Care Centre (Pvt.) Ltd. Peshawar.
Results: 132 cases were reviewed out of which 32.92% had primary sub-fertility and 22.08% had secondary sub-fertility. The mean age of the patients in the primary sub-fertility group was 21.6years and 33.3years in the secondary sub-fertility group. Majority of our patients in the primary sub-fertility group had weight gain of 6.6% and hirsutism was seen in 5.42% followed by irregular cycles in 5.0% of the patients. No symptoms were observed in 12.08% patients, so probably the primary sub-fertility group had polycystic ovarian disease syndrome. However the number of patients with hirsutism was 6.25% in the secondary sub-fertility group as well. In the secondary sub-fertility group 4.17% of patients had weight gain, and irregular cycles were seen in 4.58% of the patients. Some of the patients approximately 4.58% had no complaints. The duration of the problem in the primary sub-fertility group was more seen between 2-5years duration. 29 patients 12.08% were in this time period and more than 5years duration was noticed in 48 patients 20%. The duration of the problem in secondary sub-fertility group for more than 5 years was noted in 32 patients 13.3%. We did a hysterosalpingogram in about 27% of our patients as a diagnostic tool for tubal patency. However in 7.92% of patients hysterosalpingogram could not be performed due to technical difficulties. Post operative pain was the first complaint observed in 10.42% of the patients followed by backache in 5.82%. However 12.08% had no complaints in the primary infertility group. In the secondary sub-fertility group pain was observed in 7.08% followed by backache in 4.58% of patients. No complaints were observed in 3.75% of patients. In our study four cases of genital tuberculosis were diagnosed and one case was complicated with peritionitis due to rupture of transverse colon and proceeded to laprotomoy.
Conclusion: Laparoscopy is a gold standard tool for females presenting with sub-fertility. The benefits of laparoscopy are that there is less pain, minimal scars, less hospital stay with early recovery and less resources consumed. It is also a better modality of investigation or a better diagnostic tool in the hands of skilled operator. However it is a skilled procedure which requires expertise of a trained surgeon.

Key Words: Sub-fertility. Laparoscopy. Primary Sub-fertility. Secondary Sub-fertility. Tubal Patency.

INTRODUCTION

Sub fertility is inability to answer child bearing when it is wanted.[1] There is a wide variation in defining sub fertility is terms of duration.[2] It is best defined as in ability to conceive after 1 year of unprotected regular inter course.[3, 4] Based on this 60-80 million couples all over the world can be labeled as suffering from sub-fertility.[5] The current evidence radiates 9% prevalence of sub-fertility (of 12 months) with 56% in less developed countries.[6] Sub-fertility is a problem of global proportions worldwide more than 70 million couples suffer from sub-fertility.[7] In Pakistan the prevalence of sub-fertility is reported as 21.95%.[8]

The common factors responsible for sub-fertility in females are an-ovulatory disorders, tubal factors, endometriosis uterine and cervical factors.[9] An accurate diagnosis is the key to successful treatment so we start with history than examine the patient. It is important to perform the relevant investigation in a logical order at the correct time than to perform a series of tests. Diagnostic Laparoscopy is an effective part for evaluation however number of reports have shown that it is an effective procedure for evaluation of long term sub-fertility.[10,11]

Besides this it is the most useful method of assessment of tubal patency Aim of the study was to determine the role of laparoscopy in infertile patients as a gold standard tool irrespective evaluation of tubal status.

PATIENTS AND METHODS

The Retrospective descriptive study was conducted in department of Obstetrics & Gynaecology of Health Care Centre (Pvt.) Ltd. Peshawar from 2nd May 2012-15th August 2012 under the supervision of Prof. Shafiq Ahmed.

We reviewed case records of all patients who underwent diagnostic laproscopy for sub-fertility either primary or secondary.

Data was collected from patient case records in a data entry sheet.

Before the procedure was started informed consent was taken and the findings were noted. Any gynaecological disease present was noted i.e. fibroids, ovarian cysts, pelvic inflammatory disease, polycystic ovaries, endometriosis and special emphasis was on tubal obstruction whether tubes were patent or obstructed.

All patients who underwent diagnostic laparoscopy for sub-fertility were included in the study while patients who had history of Peritonitis, abdominal tuberculosis, perforation of intestine or history of laprotomy were excluded.

The baseline investigations were performed before the start of procedure.

Diagnostic Laprsocopy was a day case procedure, and the patient was told to have 8 hours fasting.

The consent form was filled and anesthesia approval carried out individually.

Modified Lithotomy was needed in all of them.

A 2mm small nick was given at inferior margin of the umbilicus.

Abdominal wall was lifted up with left hand and laparoscope was introduced by closed method using Veress needle.

Pneumoperitoneum was created by the apparatus through a rubber tubing and gas source turned on till maximum of 2 liters. The fiber optic light cable was attached to laproscope and trocar with the cannula was introduced into peritoneal cavity.

The panoramic view was inspected carefully. All the pelvic organs were inspected thoroughly. Any disease or pathology noted.

For the tubal patency about 10mls of methylene blue was injected by assistant and surgeon inspected dye coming out of the fimbrial ends.

RESULTS

Total number of patients included in the study were 132.

Out of the 132 cases that were reviewed 79 (32.92%) were diagnosed with primary sub-fertility while 53(22.08%) were diagnosed with secondary sub-fertility.

The age of primary sub-fertility was 20 – 35 years in 16.6% of patients and more than 35 years in 4.17% of patients.

The age of secondary sub-fertility was 20 - 35years in 15.83% and more than 35 years in 17.08% of patients.

The mean age of Primary Infertility was 21.6 years and the mean age for Secondary Infertility was 33.3 years.

12 patients (5%) had irregular cycles. Dysmenorrhoea was noted in (3.75%) of patients and hirsutism in 13 (5.42%) with weight gain in 16 (6.67%) patients. No symptoms were observed 29 patients (12.08%).

In the secondary sub-fertility group irregular cycles were in 11(4.58%) patients. Dysmenorrhoea 6 (2.50%) and hirsutism 15 (6.25%) patients with weight gain in10 (4.17%) patients. No complaints were observed in 11 (4.58%) patients. Irregular cycles & hirsutism were common in secondary sub-fertility.

The duration of sub-fertility between 2-5years was noticed in 29 (120%) patients in the primary group and 48 patients 20% had duration of more than 5years.

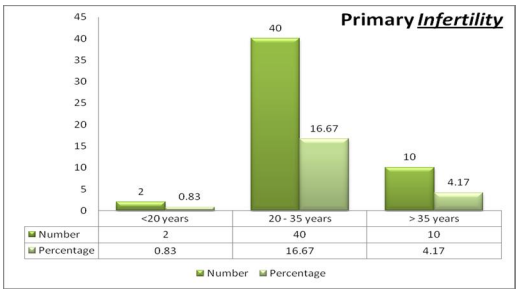
In the secondary sub-fertility group 29 (12.08%) had duration between 2-5 years and 48 (20%) patients had duration than more than 5years.

Secondary sub-fertility duration of sub-fertility more than 5 years (13.3%) 2 – 5years (5.42%).

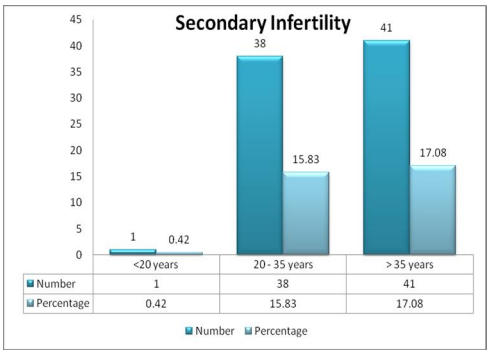
HSG was carried out on 65 patients (21%). No HSG was carried out in 48 patients (20%). Failure to perform HSG was noted in 19 patients (7.92%).

In the secondary sub-fertility group 11 patients (4.58%) had normal findings and 18 (7.50%) had tubal occlusion whereas 15 patients (6.25%) had pelvic inflammatory disease.

Primary Infertility
AGE
N = 132
Age < 20 years = 2
20 – 35 years = 40
>35 years = 10



Secondary Infertility
AGE
N = 132
Age < 20 years = 1
20 – 35 years = 38
>35 years = 41



Infertility
N = 132
Primary Infertility = 79
Secondary infertility = 53

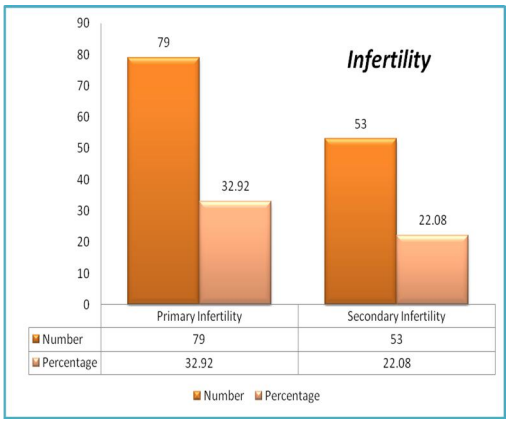
Pain was the first symptoms in 25 patients (10.42%) followed by backache in 11 (4.58%) patients. No complaints were observed in 29 (12.08%) patients.

In the secondary infertility group pain was observed in 17 patients (7.08%) followed by backache in 16 patients.

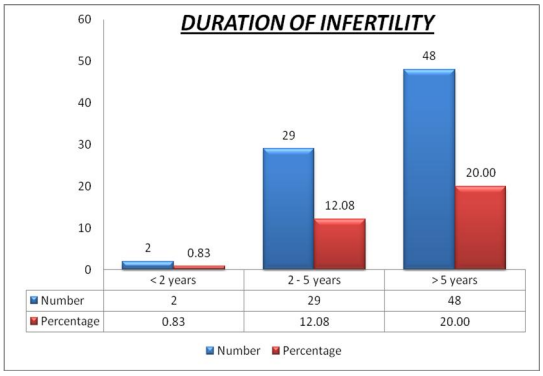
Endometriosis was found in one patient in the primary infertility group and one in the secondary infertility group.

Fibroid uterus was observed in 3 patients (1.25%) in the primary infertility group and 2 (0.83%) in the secondary group.

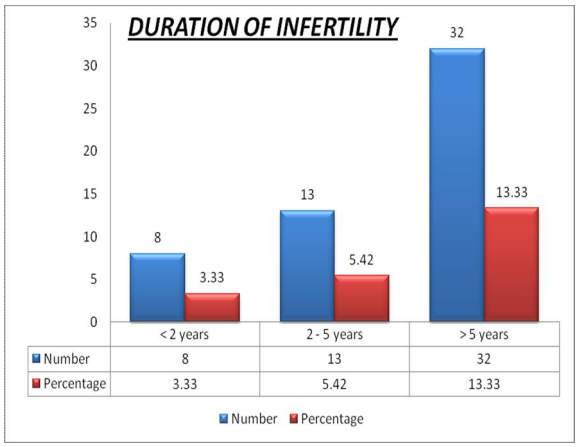
Ovarian cysts were in 2 patients in both the group.

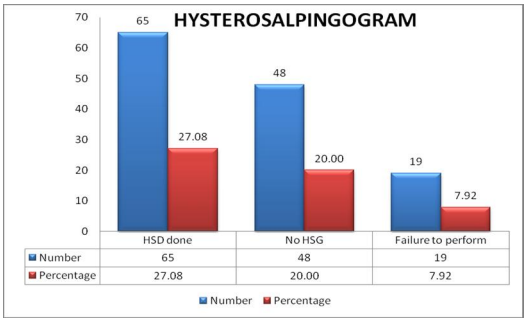


Duration of Infertility
N = 132
Primary Infertility = 79
< 2 years = 2
2 – 5 years = 29
> 5 years = 48



Duration of Infertility
N = 132
Second Infertility = 53
< 2 years = 8
2 – 5 years = 13
> 5 years = 32





Hysterosalpingogram
N = 132
HSG done = 65
No HSG = 48
Failure to perform = 19

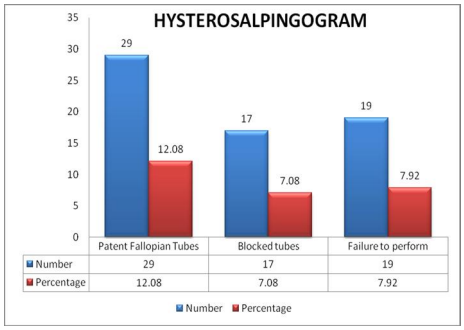
Other Complaints
n = 132
Primary Infertility = 79
Irregular Cycles =12
Abdominal Pain = 9
Hirsutism = 13
Weight Gain = 16
No Complaints = 29

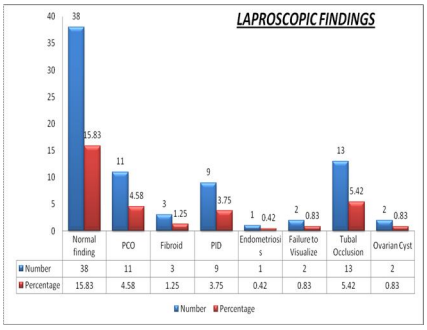
	Irregular Cycles	Abdominal Pain	Hirsutism	Weight Gain	No Complaints
Numbers	12	9	13	16	29
Percentage	5.00%	3.75%	5.42%	6.67%	12.08%

Secondary Infertility = 53 Irregular Cycles = 11 Abdominal Pain = 6
Hirsutism = 15 Weight Gain = 10 No Complaints = 11

	Irregular Cycles	Abdominal Pain	Hirsutism	Weight Gain	No Complaints
Numbers	11	6	15	10	11
Percentage	4.58%	2.50%	6.25%	4.17%	4.58%

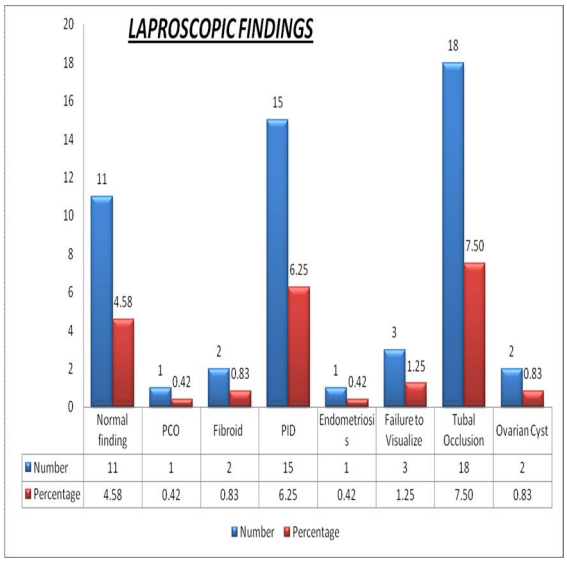
Hysterosalpingogram
N = 65 Patent Fallopian Tubes = 29 Blocked tubes = 17 Failure to perform = 19





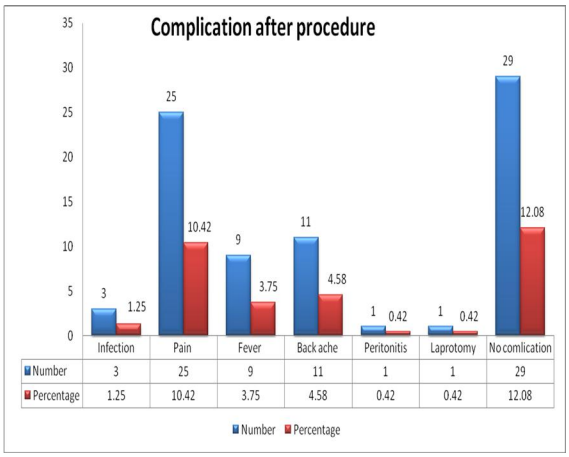
Laproscopic Findings
N = 132
Primary Infertility = 79
Normal finding = 38
PCO = 11
Fibroid = 3
PID = 9
Endometriosis = 1
Failure to Visualize = 2
Tubal Occlusion = 13

Ovarian Cyst = 2
Secondary Infertility = 53
Normal finding = 11
PCO = 1
Fibroid = 2
PID = 15
Endometriosis = 1
Failure to Visualize = 3
Tubal Occlusion = 18
Ovarian Cyst = 2



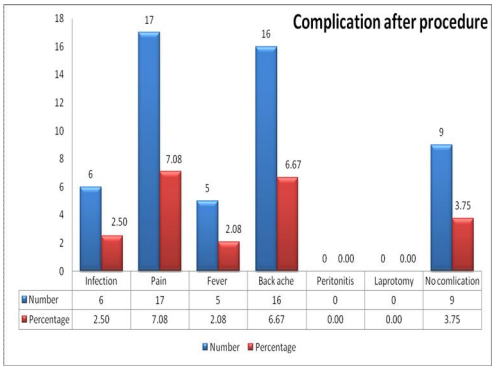
COMPLICATION AFTER PROCEDURE

N = 132
Primary Infertility = 79
Infection = 3
Pain = 25
Fever = 9
Back ache = 11
Peritonitis = 1
Laprotomy = 1
No complication = 29



Complication after procedure

Secondary Infertility = 53
Infection = 6
Pain = 17
Fever = 5
Back ache = 16
Peritonitis = 0
Laprotomy = 0
No complication = 9



DISCUSSION

Sub fertility is inability to ensure child bearing where it is wanted. (1) Infertility affects about 10 – 15 % of reproductive age couples[12]. Approximately 5% of the couples are definitive infertile with a nearly zero % chance of becoming spontaneously pregnant in the future[13]. Fertility varies across region of the world and is estimated to affect 8 – 12 % couples worldwide[14]. Infertility is basically of two types primary infertility is defined as inability to conceive within 1 year of exposure to sexual intercourse among women 15 – 49 years old who are not practicing contraception. Secondary infertility is inability to conceive following a previous pregnancy[15]. Laproscopy is a mandatory procedure that provides full assessment of the infertile couple as it not only shows tubal patency but also gives a panoramic view of the entire pelvis. Out of all the factors affecting infertility, age of the female patients is the single most important determinant factor of spontaneous as well as treatment related conception. There is no universally ally accepted definition of advanced reproductive age but 5 years is considered as the limit of infertility (American society of reproductive medicine 2006).

In our study the mean age of primary infertility was 21.6years and 33.3years in the secondary infertility group.

Our study included couples mostly from low socio economic group residing in Afghanistan, so, they presented late in their mid-twenties and thirties. Talib reported earlier age in both the groups of 22.1years & 29.4years is secondary infertility group.[16]

There were only 2 patients with age of less than 20 years in the primary infertility group and one patient is the secondary infertility group.

About 12% of the patients of the primary group had infertility of 2-5 years of standing as compared

to 20% is the secondary group where it was more than 5 years.

In Pakistan most patients will go to untrained general practitioner for treatment of infertility which leads to future delay in proper management[17].

Hysterosalpingogram was carried out on 27% of the patients and 48 patients i.e. 20% refused to carry out the procedure. These patients wanted to go for diagnostic laproscopy as they wanted to save time & their resources. Hysterosalpingogram is a cycle specific procedure and cannot be done on any & every day of the menstrual cycle.

The major symptoms of patients were irregular cylces, dysmenorrhea, weight gain & hirsutism which are in accordance with other infertility studies at national & international levels[18] Polycystic ovarian syndrome was a common presentation in the primary infertility group and tubal occlusion was observed more in the secondary infertility.

The majority of patients in the secondary infertility group had tubal occlusion 5.42% followed by PCO (4.58%).

It is in correlation with Malihowski and colleagues reported high incidence of polycystic ovaries in their study. [19]

Tubal disease accounts 15-20% cases of primary infertility and approximately 40% in the secondary infertility group [20]. A single episode of pelvic inflammatory disease carries upto 10% risk of future tubal blockage. Tubal blockage was found more in the secondary infertility group as compared to primary. Same results have been reported from Peshawar [21]. Tubal occlusion was observed in 5.42% of the patients in primary infertility group and it is most commonly due to pelvic inflammatory disease. Pelvic inflammatory disease was seen in 3.75% primary infertility group and 6.25% in secondary infertility group. Tubal occlusion was observed in 7.50% patients in second infertility group.

In a study conducted at Zarger et al at Sri Nagar matched report tubal occlusion is 11%. [22]

The frequency of fibroid in the present study was 1% the incidence of myoma in women with infertile without any obvious cause of infertility is estimated to be 1 – 2.4% [23] in accordance to our study.

In our study endometriosis was found to be present in 2 patients. A study conducted by Mehmood showed the incidence of endometriosis in 13.6% of patients in primary infertility and 2.52% in second infertility but our study ratio was reduced and pelvic inflammatory disease was common in our patients.[24]

Genital tuberculosis is common in Indo Pak and a combination of clinical and laprosocpic diagnosis along with endometrial histopathology A.F.B culture PCR diagnosis in infertile women.[25]

In our study 4 cases of genital tuberculosis was observed with caseous nodules on the ovaries and omentum with one case complicated with pertitonitis due to supture of transverse colon and had to undergo laprotomy. The surgeons were suspecting pathology which came out to be a perforated gut due to typhoid fever.

After diagnostic laproscopy 5 patients conceived in the very next cycle.

CONCLUSION

It is obvious that laproscopy is not only a clinically important diagnostic tool but may also be important in making decisions for other gynaecological problems.

Diagnostic laproscopy is a gold standard investigation for evaluation of the pelvis and is considered a safe procedure. It improves pregnancy rate and quality in the hands of a specialist.

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