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Justifying Role of Diagnostic Hysrero-Laparoscopy in an Infertile Patient

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Abstract: ***Background: To substantiate the findings of hysteroscopy and laparoscopy to justify its role in female infertility in tertiary care centre. This study is contemplated to review the effectiveness of combining diagnostic hysteroscopy and laparoscopy in identifying the cause of infertility and taking appropriate therapeutic measure according to pathology during and after the procedure. Aims and Objective: our aim is to portray the significance of hystero-laparoscopy as a diagnostic tool in an infertile patient. METHODS: This study is conducted at American International Institute of medical sciences, Udaipur, Rajasthan. All the infertile patient in this study fulfilled the inclusion and exclusion criteria, underwent hystero-laparoscopy and the anatomical abnormalities noticed during procedure were tackled at the same time if possible. Period of study- 8 months. Results: The study showed majority of infertile patients were b/w age group 26-30 years (50%). 62% patients were of primary infertility and 38% belonged to secondary infertility. On hysteroscopy, most common abnormality seen in both primary and secondary infertility is ostial stenosis. On laparoscopic findings, in primary infertility most common abnormality seen is ovarian cyst (25%), whereas in secondary infertility most common abnormality seen is PID (20%), TB (20%), and Endometriosis (20%). Chromopertubation test 56% had B/L positive test f/b 30% with negative test and 14% with U/L positive test. In our study during diagnostic hysterolaparoscopy, at the same sitting surgical intervention were performed in majority of cases i.e., 75% intervention were performed in primary infertility pt. and 40% intervention in secondary infertility pt. Conclusion: DHL is safe and effective, diagnostic with therapeutic tool for primary and secondary female infertility. It can be taken as gold standard in initial phases of infertility work-up.***

Keywords: Diagnostic, Hystero-laparoscopy, Infertility, surgical intervention

1. Introduction

Infertility is defined as the inability to conceive naturally after one year of regular unprotected intercourse. Infertility can be either primary or secondary. Primary subfertility is a delay for a couple who have had no previous pregnancies; and, secondary subfertility is a delay for a couple who have conceived previously, although the pregnancy may not have been successful for example, miscarriage, and ectopic pregnancy.[1]

Infertility (a state of subfertility) can be manifested either as the inability to become pregnant, inability to uphold a pregnancy, and inability to continue a pregnancy till term. [2,3] Infertility affects 10–15% of couples,[4] therefore a couple must be treated rather than an individual. Though the incidence of infertility has not changed over the last 3 decades, the diagnostic modalities have improved in the last few years.

Unexplained infertility refers to a diagnosis (or lack of one) made in couples in which standard investigations of tubal patency, ovulation, and semen analysis are normal. Depending on the number of investigations done and degree of evaluation of the couple, this term can be applied to as many as 30% of couples.[5]

The fertility is classified in various ways and it can be classified on anatomical and functional basis. Leading cause of infertility includes tuboperitoneal disease (40–50 %), ovulatory disorders (30–40 %), uterine factor (15–20 %) and male factor infertility (30–40 %).[6,7]

Clinically, the majority of pelvic pathologies have been difficult to determine based on routine pelvic examinations alone. The ability to see and manipulate uterus, fallopian tubes and ovaries during laparoscopy has made, it an essential part of infertility evaluation. Similarly, visualizing the uterine cavity and identifying the possible pathology has made hysteroscopy[8] an equally important tool in infertility evaluation.

Combined laparoscopy and hysteroscopy are considered the gold standard for evaluation of infertility; as the advantages of combined hysteroscopic and laparoscopic approach is proper assessment of the distal tubes and ovaries, the elimination of tubal spasm as a factor of infertility, absence of radiation, more precise application of instruments and confirmation of achievement of tubal patency during the procedure.[9]

2. Materials and Method

Patients with female infertility, age between 18-45 years presenting to the outpatient Department of Obstetrics and Gynaecology in GBH American Hospital were registered to participate in the study after taking the informed and written consent. After detailed history and clinical examination (general-physical, systemic and gynaecological examination), routine investigations were done. After considering the inclusion and exclusion criteria and contraindications of the operative procedure, hysteroscopy and laparoscopy were concurrently performed. Chromopertubation (CPT) was performed in all cases.

Inclusion Criteria: -

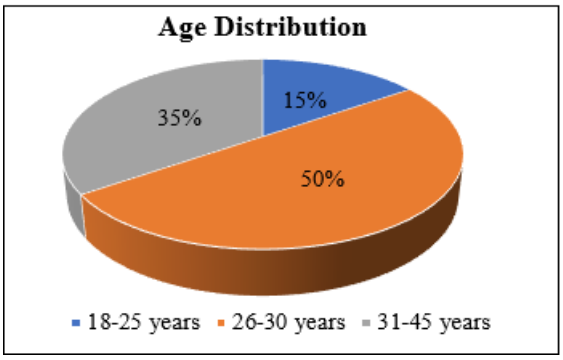
- Primary/ Secondary Infertility
- Age group of 18-45 years
- Couple who did not conceive even after at least one year of unprotected regular sexual intercourse.

- Wants Issue
- Normal partner seminogram

Exclusion Criteria:

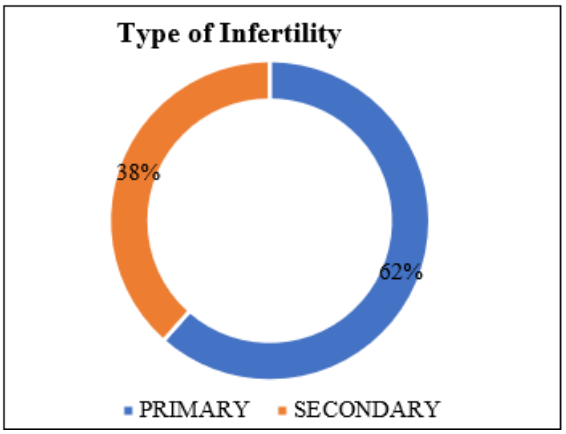
- Age <18 years and >45 years.
- Male Infertility
- Suspected Pregnancy
- Other systemic causes of infertility

3. Result



Graph 1: Distribution of Cases according to Age

In our study majority of infertile patients were b/w age group 26-30 years i.e., 50%. 35% patients belonged to age group of 31-45 years and rest 15% to age group of 18-25 years.



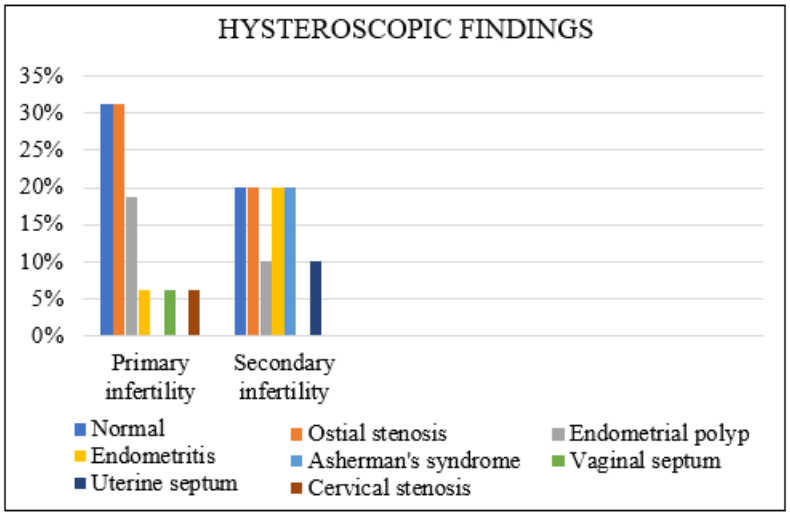
Graph 2: Distribution of Cases according to Type of Infertility

62% patients were of primary infertility and 38% of secondary infertility.

Table 1: Hysteroscopic Findings

Findings	Number (N=26)			Percentage (%)
	Total	Primary (n=16)	Secondary (n=10)	
Normal Study	7	5	2	30
Ostial Stenosis	7	5	2	30
Unilateral	2	3	0	
Bilateral	5	2	2	
Endometrial Polyp	4	3	1	15.4
Endometritis	3	1	2	11.5
Asherman's Syndrome	2	0	2	7.7
Vaginal Septum	1	1	0	3.8
Uterine Septum	1	0	1	3.8
Cervical Stenosis	1	1	0	3.8

In our study on hysteroscopic findings, majority of patients had normal findings (30%) and ostial stenosis (30%) f/b endometrial polyp (15.4%), endometritis (11.5%) and others i.e., asherman's syndrome, vaginal and uterine septum and cervical stenosis.



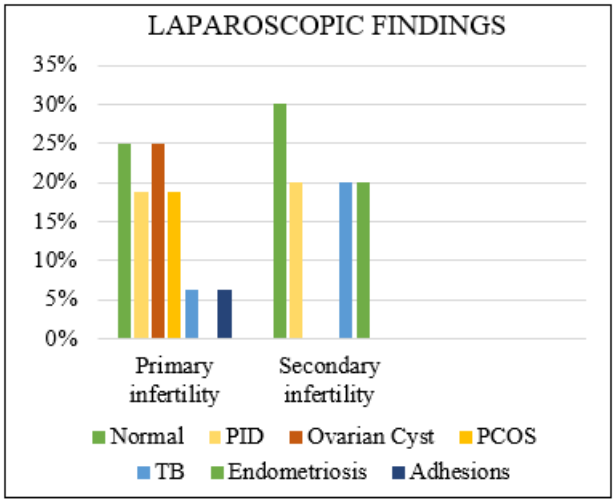
Graph 3: Hysteroscopic Findings in Primary and Secondary Infertility

On hysteroscopy, most common abnormality seen in primary infertility is ostial stenosis (31%) f/b endometrial polyp, whereas in secondary infertility most common abnormality seen is tubal blockage (20%), endometritis (20%) and asherman's syndrome (20%).

Table 2: Laparoscopic Findings

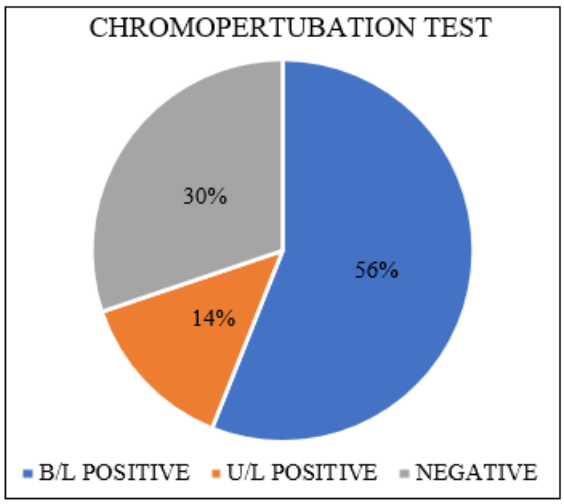
Findings	NUMBER (N=26)			Percentage (%)
	Total	Primary (n=16)	Secondary (n=10)	
Normal	7	4	3	30
PID	5	3	2	19.3
With Hydrosalpinx	3			
Without Hydrosalpinx	2			
Ovarian CysT	4	4	0	15.4
PCOS	3	3	0	11.4
TB	3	1	2	11.4
Endometriosis	2	0	2	7.6
Adhesions	2	1	1	7.6

On laparoscopy, majority of patients had normal findings (30%) f/b PID (with and without hydrosalpinx)- 19.3%, ovarian cyst (15.4%), PCOS (11.4%), TB (11.4%) and endometriosis and adhesions



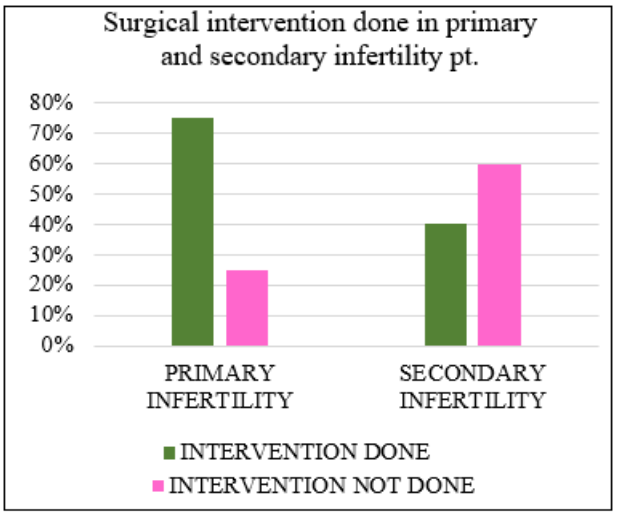
Graph 4: Laparoscopic Findings in primary and Secondary Infertility

On laparoscopic findings, in primary infertility most common abnormality seen is ovarian cyst (25%), whereas in secondary infertility most common abnormality seen is PID (20%), TB (20%), and Endometriosis (20%).



Graph 5: Chromopertubation Test

In our study on Chromopertubation test 56% had B/L positive test f/b 30% with negative test and 14% with U/L positive test.



Graph 6: Surgical Interventions Done

In our study during diagnostic hysterolaparoscopy, at the same sitting surgical intervention were performed in majority of cases (62%) out of which 75% intervention were done in primary infertility pt. and 40% intervention in secondary infertility pt., which were cannulation, ovarian drilling, cystectomy, hysteroscopic polypectomy and septum resection.

4. Discussion

In our study majority of infertile patients were b/w age group 26-30 years i.e., 50%. 35% patients belonged to age group of 31-45 years and rest 15% to age group of 18-25 years. Similar results were seen in study by Ravikanth GO et al.[10]

In our study, 62% patients were of primary infertility and 38% of secondary infertility. Similar results were seen in study by Ravikanth GO et al.[10] and Nanaware SS et al.[11] Results from study by Al-Bromboly WH et al.[12] were different from out study i.e., 42.7% pt. had primary infertility and 59.5% had secondary infertility.

In our study on hysteroscopy, most common abnormality seen in both primary and secondary infertility isostial stenosis, different from the study by Ravikanth GO et al.[10] where they found uterine synechia as the most common abnormality and Nanaware SS et al.[11] where they had uterine septum as most common abnormality.

In our study on laparoscopic findings, in primary infertility most common abnormality seen is ovarian cyst(25%), whereas in secondary infertility most common abnormality seen is PID(20%), TB(20%), and Endometriosis(20%), different from the study by Ravikanth GO et al.[10] where they found pelvic adhesion as most common abnormality and Nanaware SS et al.[11] where they found most common abnormality and tubal pathology and pelvic adhesion.

In our study on Chromopertubation test 56% had B/L positive test f/b 30% with negative test and 14% with U/L positive test. Study by Nanaware SS et al.[11] showed in Chromopertubation test, primary infertility group and secondary infertility group have tubal blockage in 22.38% and 27% cases respectively.

In our study during diagnostic hysterolaparoscopy, at the same sitting surgical intervention were performed in majority of cases (62%) out of which 75% intervention were performed in primary infertility pt. and 40% intervention in secondary infertility pt., which were cannulation, ovarian drilling, cystectomy, hysteroscopic polypectomy and septum resection. Study by Agrawal N et al[13] showed, all of the 48 secondary infertility patients with hysterolaparoscopic abnormalities experienced for active hysterolaparoscopic interventions. Hysterolaparoscopic abnormality in primary infertility group, 73 (~94.8%) experienced active intervention.

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