

Laparoscopy: As a First Line Diagnostic Tool for Infertility Evaluation

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ABSTRACT

Introduction: The role of diagnostic and therapeutic hystero-laparoscopy in women with infertility is well established. It is helpful not only in the identification of the cause but also in the management of the same at that time.

Materials and Methods: In this study, the aim was to analyse the results of 203 women on whom laparoscopy for the evaluation of infertility was done. This study was carried out at a tertiary level hospital from 2005 to 2012. The study group included 121 women with primary infertility and 82 women with secondary infertility. Women with incomplete medical records and isolated male factor infertility were excluded from the study.

Results: It was observed that tubal disease was the responsible factor in 62.8% women with primary infertility and 54.8% women with secondary infertility followed by pelvic adhesions in 33% and 31.5%, ovarian factor in 14% and 8.5%, pelvic endometriosis in 9.9% and 6.1% women respectively. Thus tubal factor infertility is still a major cause of infertility in developing countries and its management at an early stage is important to prevent an irreversible damage. At the same time, it also directs which couples would be benefited from assisted reproductive technologies (ART).

Keywords: Endometriosis, Infertility, Laparoscopy, Pelvic adhesions, Tubal disease

INTRODUCTION

Infertility affects about 10-15% of couples of reproductive age groups [1]. Diagnostic hystero-laparoscopy (DHL) plays a pivotal role in the evaluation of the women with infertility. In the absence of any clinical signs and symptoms suggestive of a disease, hystero-laparoscopy offers an optimal means of direct visualization of the abdomen and the pelvic organs to unveil the hidden pathology [2]. Besides, it is also helpful in managing the underline cause to a large extent in the same sitting. In this study, our endeavour was to assess the hystero-laparoscopy as a diagnostic tool in infertile women in our setup and to ascertain the relative frequency of various causes of infertility and further treatment modality.

MATERIALS AND METHODS

There were a total of 257 women who underwent DHL at a tertiary care hospital of Delhi for the evaluation on infertility from 2005 to 2012. Fifty-four women were excluded from the study due to incomplete operative findings. This is a retrospective analysis of the operative findings of the 203 women. Patients' age, nature of infertility, laparoscopic findings as well as chromopertubation results were analysed.

RESULTS

The study group comprised of 121 women with primary and 82 with secondary infertility. These women were from low socio-economic group. The age of the women with primary infertility ranged between 20-34 y (mean age 24.6 y) and between 26-35 y (mean age 28.4 y) with secondary infertility. No visible cause of infertility on laparoscopy was found in 19.8% (n=24) in primary infertility and 24.4% (n=20) in secondary infertility.

Tubal pathology was present in 62.8% women (n=76) with primary and 54.8% women (n=45) with secondary infertility. The tubes (unilateral or bilateral) were blocked in 57% women (n=69) with primary infertility and 51.2% women (n=42) with secondary infertility. Hydrosalpinx as a cause of infertility was seen in 5.7% (n=7) and 3.6% (n=3) women with primary and secondary infertility respectively [Table/Fig-1].

Ovarian pathology was detected in 14% (n=17) and 8.5% (n=7) of primary and secondary infertility with polycystic ovarian disease (PCOD) in 6.6% (n=8) and 6.1% (n=5) of women respectively [Table/Fig-1].

Ovarian endometrioma was found in 4.9% (n=6) and 2.4% (n=2) women with primary and secondary infertility. Pelvic endometriosis was diagnosed in 9.9% and 6.1% of women with primary and secondary infertility respectively [Table/Fig-1].

Adhesions were seen in 33% and 31% of women with primary and secondary infertility. The corresponding occurrence of dense adhesions was 13.2% and 6.1% respectively [Table/Fig-1].

More than one factor was implicated in 13.2% (n=16) and 10.9% (n=9) of women with primary and secondary infertility by laparoscopy.

On hysteroscopy, endometrial polyp was seen in four and three cases of primary and secondary infertility. Rest all the women had normal findings.

DISCUSSION

Hystero-laparoscopy has nowadays become an integral part of infertility evaluation. Due to increased awareness and eagerness to have a pregnancy, couples are seeking medical help early. Most of the women with primary infertility were between 23-25 y and with secondary infertility were between 26-29 y which is similar to that quoted in other studies [3,4].

Normal laparoscopic findings were found in 19.8% in primary infertility and 24.4% in secondary infertility. Thus, 75-80% of patients had a pelvic pathology. These figures are lower than those reported by authors in their studies, and this is most probably due to small sample size [5,6].

According to WHO, malnutrition, pelvic tuberculosis and puerperal infections leading to tubal blockage is still the major cause of infertility [7]. It is found that 39-41% of tubal factor infertility is associated with tuberculosis, which is more common in developing countries [8]. Tubal disease was found in 62.8% women with primary infertility and 54.8% women with secondary infertility which is much higher than other similar studies which have found tubal disease ranging

Laparoscopic findings	Primary infertility (n=121)		Secondary infertility (n=82)	
	n	%	n	%
Normal findings	24	19.8%	20	24.4%
Tubal pathology	76	62.8%	45	54.8%
Blocked tubes*	69	57%	42	51.2%
Unilateral	27	22.3%	20	24.4%
Bilateral	42	34.7%	22	26.8%
Hydrosalpinx	7	5.7%	3	3.6%
TO Mass	3	2.5%	5	6.1%
Ovarian problems	17	14%	7	8.5%
Polycystic ovaries	8	6.6%	5	6.1%
Ovarian cyst	3	2.5%	0	0%
Chocolate cyst	6	4.9%	2	2.4%
Adhesions	40	33%	26	31.7%
Extensive	16	13.2%	5	6.1%
Mild to moderate	24	19.8%	21	25.6%
Endometriosis	12	9.9%	5	6.1%
Multiple factors#	16	13.2%	9	10.9%

[Table/Fig-1]: Laparoscopic findings in infertile women (n=203) *Blocked tubes in association with either normal pelvic finding or associated with other abnormal finding., #More than one aetiologies were involved

from 21% to 30% in both the groups [5,9]. Bilateral block was found in majority of infertile women in our study group, 34.7% in primary and 26.8% in secondary infertility, which is again higher than in other similar study [6]. Adhesions were seen in around 31 to 33% of women in both the groups in our study while Shamim et al., have reported adhesions to be present in 18% in both primary and secondary infertility [5].

We found that 6.6% women with primary infertility and 6.1% of women with secondary infertility patients had polycystic ovarian disease (PCOD) but the study by Boricha et al., found PCOD as the commonest cause of infertility in both primary and secondary infertility [3].

Endometriosis was seen in 12.3% of infertile women in the present study population while it has been reported as 22% and 75.7% respectively in different studies [3,10].

Over the time, endometriosis and PCOS have emerged increasingly as a leading cause of infertility in developed countries but tubal factor still remains the commonest cause of infertility in developing countries where prevalence of tuberculosis and pelvic inflammatory diseases is high.

CONCLUSION

Tubal disease is still the major cause for infertility in developing countries; therefore laparoscopy should be considered earlier in the workup of infertility and would prevent empirical ovulation induction. It helps in diagnosing asymptomatic diseases and appropriate tailor-made approach can be executed. It would also help in identifying women who require assisted reproductive technology (ART).

Thus, even in the developing countries, laparoscopy is emerging as a valuable technique for complete assessment of female infertility and also helps in treatment according to the cause.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **May 01, 2014**

Date of Peer Review: **May 27, 2014**

Date of Acceptance: **Jul 11, 2014**

Date of Publishing: **Oct 20, 2014**