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ORIGINAL ARTICLE

ROLE OF DIAGNOSTIC HYSTERON -LAPAROSCOPY (DHL) IN THE ASSESSMENT OF INFERTILITY- A RETROSPECTIVE ANALYSIS

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ABSTRACT:

Background: One of the major concerns of the society is infertility. Identifying the cause of infertility is complex and after a standard evaluation 20-30% of couples will have no clearly identifiable cause of their infertility. Consequently, patients increasingly forgo surgery, particularly if they are otherwise asymptomatic and their initial diagnostic studies [i.e., hysterosalpingogram (HSG)] are normal. Hysteropsalpingography (HSG) is a radiologic procedure to investigate the shape of the uterine cavity and the patency of follapian tubes.This study was undertaken to evaluate the role of diagnostic hysteron ‑laparoscopy (DHL) in the evaluation of infertility. **Material & Methods:** From January to December in 2008 this retrospective study was conducted at two tertiary care centres . DHL with chromopertubation test was performed in early follicular phase in all the patients. The instruments used were those of KARL STORZ, Tuttlingen, Germany. Statistical analysis was done using SPSS software version 16. The Student's t test was used for comparison of continuous variables and Chisquare test for proportions. **Results:** Out of 320 patients, 226 (about 70%) women had primary infertility and the rest had secondary infertility. The patients in secondary infertility group were slightly elder compared to primary group. The prevalence of unilateral and bilateral tubal block was equal in both the groups. **Conclusion:** Diagnostic hysterolaparoscopy is a safe method for assessment of infertility, particularly for detecting peritoneal endometriosis, adnexal adhesions, and septum in the uterus.

Key words: Hysteron -laparoscopy, Infertility

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INTRODUCTION

Infertility is a growing concern of the society. In India there are approximately 10-15% couples are infertile. Identifying the cause of infertility is complex and after a standard evaluation 20-30% of couples will have no clearly identifiable cause of their infertility.[1, 2] However, these estimates include couples in which the female partner may not have been thoroughly evaluated with laparoscopy for pelvic pathology (such as endometriosis). It has been estimated that using laparoscopy as a standard test have tubal function would reduce the apparent incidence of unexplained infertility from 10% to 3.5%.[3] Diagnostic laparoscopy is the final step in determining the cause of infertility and is also frequently performed as a standard procedure in diagnosing infertility.[4] However, the role of laparoscopy as a standard approach to the management of infertility remains controversial for several reasons. Although women with infertility have an increased prevalence of endometriosis (estimated at greater than 30%), it is difficult to predict which patients are likely to benefit from surgery.[5,6] Modern fertility treatments, especially *in vitro* fertilization (IVF), result in marked improvements in fecundity; it is unclear whether these treatments are compromised by unrecognized endometriosis. Consequently, patients increasingly forgo surgery, particularly if they are otherwise asymptomatic and their initial diagnostic studies [i.e., hysterosalpingogram (HSG)] are normal.[7, 8]Hysteropsalpingography (HSG) is a radiologic procedure to investigate the shape of the uterine cavity and the patency of follapian tubes.

This study was undertaken to evaluate the role of diagnostic hysteron ‑laparoscopy (DHL) in the comprehensive work up of infertility.

MATERIALS & METHODS

From January to December in 2008 this retrospective study was conducted Maharaja Institute of Medical Sciences, Nellimarla, Vizianagaram. Patientsbetween 20 and 40 years of age with eitherprimary or secondary infertility of more than1 year duration were included in the study.Primary infertility patients were those whohad never conceived before, while secondaryinfertile patients had at least one priorconception, irrespective of the outcome.Hormonal abnormalities known to cause anovulation like thyroid dysfunction, hyperprolactinemia, and polycystic ovarian syndrome were excluded. Couples with abnormal semen analysis were also not included in this study.[9] DHL with chromopertubation test was performed in early follicular phase in all the patients. The instruments used were those of KARL STORZ, Tuttlingen, Germany. Statistical analysis was done using SPSS software version 16. The Student's ttest was used for comparison of continuous variables and Chisquare test for proportions.

RESULTS

Out of 320 patients, 226 (about 70%) women had primary infertility and the rest had secondary infertility. The patients in secondary infertility group were slightly elder compared to primary group ($P < 0.0001$). But there was no difference in duration of infertility in two groups. In primary infertility group, laparoscopic abnormalites were more common [Table 1] than hysteroscopy (approximately 34% vs. approximately 16%, $P < 0.0001$). Endometriosis and adnexal adhesions were the most common abnormalities detected in laparoscopy in primary and secondary infertility groups respectively [Table 2]. The most common intrauterine pathology in both the groups was uterine septum [Table 3]. The prevalence of unilateral and bilateral tubal block was equal in both the groups [Table 4]. Other than mild abdominal pain, there was no major surgical or anesthetic complication in any of our patients.

Table 1: Prevalence of hysteroscopy and laparoscopy abnormalities

Procedures	Primary		Secondary	
	Normal	Abnormal	Normal	Abnormal
Laparoscopy	64%	36%	69%	31%
Hysteroscopy	82%	18%	77%	23%
Total	73%	27%	73%	27%

Table 2: Laparoscopic findings

Findings	Primary	Secondary	Total
Myoma	4%	4%	4%
Endometriosis	13%	7%	11%
Adnexal adhesions	6%	11%	7%
Adenomyosis	3%	4%	3%
Tubal pathology	7%	9%	8%
Ovarian pathology	9%	6%	8%
Uterine anomaly	2%	0	2%

Table 3: Hysteroscopy findings

Findings	Primary	Secondary	Total
Myoma	4 %	3%	3%
Polyp	6%	6%	5%
Septum	8%	11%	11%
Synechiae	0%	1%	1%
Foreign body	3%	3%	1%

Table 4: Prevalence of complete tubal block

Findings	Primary	Secondary	Total
Unilateral	11%	9%	11%
Bilateral	8%	14%	9%

DISCUSSION

Infertility affects about 10-15% of reproductive age couples.[10]The prevalence of infertile individuals is increasing globally.Tuboperitoneal pathology is responsible for 40-50% cases ofinfertility. Experience has shown that routine examination anddiagnostic procedures is not enough to evaluate pelvic pathologyof infertile women. The ability to observe and treatment theuterus, fallopian tubes, and ovaries during laparoscopy has madeit a gold standard to evaluate pelvic pathology.[11] Similarly, visualizingthe uterine cavity and identifying the possible pathologyhas made hysteroscopy an essential part of infertility evaluation.The abnormalities of pelvic and uterus can resolved in combined hysterolaparoscopy, such as the lesion of tubal morphology and patency, ovarian morphology, and uterine cavity abnormalities at the same time.[12]

Although a diagnosis of septate uterus per se is not an indication for septoplasty, the reproductive performance of women with an uncorrected septum is rather poor (80% pregnancy loss, 10% preterm delivery, 10% term delivery) with most losses occurring in the first trimester (approximately 65%). Pregnancy outcomes dramatically improved after surgical correction (80% term delivery, 5%preterm delivery, 15% pregnancy loss).[13] Previously, surgical correction of septate uterus was requiring an abdominal metroplasty, which was associated with increased morbidity and future pregnancy complications due to scarred uterus. Currently, the modern operative hysteroscopic techniques have made it a relatively easy and brief day care procedure with low morbidity and prompt recovery. Therefore, septal resection is recommended more liberally nowadays. Other than septate uterus, the major hysteroscopy abnormalities in our study were myomas and polyps similar to another study.[14] The evidence to suggest that uterine myomas decrease fertility is inferential and relatively weak; the bulk of it is derived from studies that had compared the prevalence of myomasin fertile and infertile women or the reproductive performance of women with otherwise unexplained infertility before and after myomectomy.[15, 16]

Goldman et al. found that in the absence of findings during an unexplained infertility evaluation, routine laparoscopy was not necessary. The majority of patients who proceed to treatment will become pregnant. However, this study compared pregnancy outcomes in women with unexplained infertility rather than findings at laparoscopy.[17] Shimizu et al. concluded that diagnostic laparoscopy should be offered as an option for younger patients who desire spontaneous pregnancy because no significant difference was found in the cumulative pregnancy rate between patients proceeding to direct IVF and those doing so after laparoscopy. In the latter, however, the chance of spontaneous conceptions was higher.[18]Proposed mechanisms bywhich myomas might adversely affect fertility include corneal myomas that involve or compress the interstitial segment ofthe tube, dysfunctional uterine contractility interfering withovum or sperm transport or embryo implantation, and poorregional blood flow resulting in focal endometrial attenuationor ulceration.[19] The incidence of asymptomatic endometrialpolyps in women with infertility has been reported to rangefrom 10% to 32%.[20,21] A prospective study of 224 infertilewomen who underwent hysteroscopy observed a 50%pregnancy rate after polypectomy.[22]

Diagnostic hysteron-laparoscopy is a very safe procedure. Other than mild abdominal pain, there were no major surgical or anesthetic complications in any of our patients.

CONCLUSION

Diagnostic hysterolaparoscopy is an effective and safe tool in comprehensive evaluation of infertility, particularly for detecting peritoneal endometriosis, adnexal adhesions, and septum in the uterus. These are correctable abnormalities that are unfortunately missed by routine pelvic examination and usual imaging procedures.

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