International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Antaratani RC et al. Int J Reprod Contracept Obstet Gynecol. 2017 Oct;6(10):4454-4457
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20174423

Original Research Article

Hysterolaparoscopy in the evaluation and management of female infertility

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Received: 22 July 2017
Revised: 29 August 2017
Accepted: 01 September 2017

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ABSTRACT

Background: To study the role of hysterolaparoscopy in the evaluation and management of female infertility.
Methods: A retrospective study of the 677 case files of all the patients who underwent diagnostic hysterolaparoscopy for infertility between January 2011 to December 2016 at Karnataka Institute of Medical Sciences, Hubli and Sushruta Multispeciality hospital, Hubli. These infertile women were confirmed to have normal ovulatory cycles, hormonal assays and seminogram report. Dye studies as well as inspection for abnormal pelvic and intrauterine pathology and necessary therapeutic interven-tions were done during the procedure. Abnormal pelvic and intrauterine pathology by hysterolaparoscopy were categorized.
Results: Out of 677 cases, 74% patients had primary, 26% patients had secondary infertility. As a whole pelvic pathology was confirmed in 59.5% and intrauterine pathology in 22.3% patients by hysteroscopy. The most common laparoscopic abnormality detected was Polycystic ovaries (27.1%), followed by pelvic adhesions (18.7%). Tubal block comprised 8.1% whereas distorted uterus by fibroid in 6.2% and pelvic endometriosis in 8.7%. In hysteroscopy, the incidence of uterine anomaly was 54 (7.9%). Septate uterus is the most common with a mean incidence of approximately 37 (67.8%).
Conclusions: Diagnostic hysterolaparoscopy is an effective diagnostic and therapeutic modality for certain significant and correctable abnormalities in pelvis, tubes and uterus which are missed by other imaging modalities.

Keywords: Hysteroscopy, Infertility, Laparoscopy

INTRODUCTION

Though there is no unanimous definition it is generally agreed that Infertility is failure to achieve a clinical pregnancy after 1 year of unprotected frequent intercourse. The couple should be investigated.

It affects approximately 10-15% of couples. Leading cause of infertility includes tuboperitoneal disease (40-50%), ovulatory disorders (30–40 %), uterine factor (15-20 %) and male factor infertility (30–40 %).[1,2]

If the age is more advanced, the treating physician should advise invasive investigations. Most of the tests like USG and HSG are likely to miss many intra-abdominal lesions like adhesions, endometriosis, ovarian and tubal pathologies.

Hysterolaparoscopy is an excellent diagnostic modality to detect hidden pathology in patients without any overt clinical manifestations. Laparoscopy can reveal the presence of peritubal adhe-sions, periadnexal adhesions, tubal pathology and endometriosis in 35-68% of cases

even after normal HSG.[1] Diagnostic hysteroscopy is an equally important modality to detect uterine anomalies and other intrauterine pathologies.[3] Surgical procedures can be done in the same setting.

Keeping this in view, the present study was designed to assess the role of hysterolaparoscopy in the evaluation and management of Infertility.

METHODS

This study was conducted in Karnataka Institute of Medical Sciences, Hubli and Sushruta Multispeciality hospital, Hubli from January 2011 to December 2016 retrospectively. All the patients who came for infertility were investigated.

Inclusion criteria

- Women aged 19-40 years
- Primary or secondary infertility as per WHO criterion
- Normal ovulatory cycles and normal serum level of TSH, FSH, LH, prolactin
- Normal seminogram.

They were subjected to diagnostic hysterolaparoscopy to rule out other causes of infertility. Surgical corrective procedures were done in the same setting.

The data collected were demographic factors such as age, duration and type of infertility, base line hormonal profile and records of male evaluation. Intraoperative findings, surgical interventions and complications during procedure were noted. The following parameters such as tubal occlusion, peritubal, periadnexal and dense pelvic adhesions, endometriosis during laparoscopy and abnormality of cervical canal, uterine cavity, bilateral tubal ostium and endometrium during hysteroscopy were noted.

RESULTS

Out of 677 cases, 74% patients had primary, 26% patients had secondary infertility.

Majority of cases, 265 cases (39.1%) were in the age group of 26–30. 225 (33.2%) belonged to the age group of 18–25 years, 130 (19.2%) belonged to 31–35 and 57 (8.4%) to 36-40 years.

Majority of cases, 297 (43.8%) had a married life of 5-10 years. 273 cases (40.3%) had a married life under 5 years and 107 cases (15.8%) had a married life of 10 years.

As a whole pelvic pathology was confirmed in 58.7% and intrauterine pathology in 15.9% patients by hysteroscopy. The most common laparoscopic abnormality detected was Polycystic ovaries (27.1%), followed by pelvic adhesions (18.7%). Tubal block comprised 8.1% whereas distorted uterus by fibroid in 6.2% and pelvic endometriosis in 8.7%. In hysteroscopy, the incidence of uterine anomaly was 54 (11.1%). Septate uterus is the most common with a mean incidence of approximately 37 (67.8%).

Table 1: Laparoscopy findings.

Finding	Number (N = 668)	%
Normal study	270	40.4
Tubal block	55	
Unilateral block	30	8.1
Bilateral block	25	
Polycystic ovaries	184	27.1
Pelvic inflammatory disease	72	10.6
Adhesions	128	18.9
Fibroid uterus	42	6.2
Endometriosis	59	8.7
Anomaly (Arcuate, Uni/bicornuate)	12	1.7

Intrauterine pathology was diagnosed in 18.1% patients by hysteroscopy.

Table 2: Hysteroscopy findings.

Finding	Number (N = 483)	%
Normal study	375	77.6
Uterine anomaly	54	11.1
Polyp/myoma	32	6.6
Synechiae	22	4.5

Table 3: The following procedures were carried out as a part of management of infertility.

Procedure	399
Ovarian drilling	181
Hysteroscopic septal resection	37
Laparoscopic myomectomy	35
Adhesiolysis/synecholysis	116
Hysteroscopic polypectomy	30

DISCUSSION

Infertile women with normal ovulatory cycles, seminogram and hormonal profiles have higher possibility of having tuboperitoneal and subtle endometrial pathologies. These women undergo series of procedures like HSG, receiving treatment for timing ovulation with coitus, controlled ovulation stimulation with follicular tracing by transvagi-nal ultrasound, laparoscopy and hysteroscopy before being referred for ART. Performing hysterolaparoscopy as single step procedure straightway in these patients proves to be more fruitful as therapeutic interventions or early decisions for ART or both can be undertaken simultaneously.[4]

Diagnostic hysteroscopy is also a proven method for investigating the cause of female infertility. Uterine

pathologies can be the contributing factor for infertility in as many as 15% of couples seeking treatment.[5-8]

Septate uterus is the most common uterine anomaly with a mean incidence of approximately 37.15% followed by bicornuate uterus approximately 26.13% and arcuate uterus approximately 21.26% of uterine anomaly in infertile couple.[9] Present study shows that the incidence of uterine anomaly was 54 (11.1%). Septate uterus is the most common anomaly with a mean incidence of approximately 37 (67.8%). Septate uterus has been recognized as most common cause associated with highest reproductive failure rates. The reproductive performance of women with an uncorrected septum is rather poor, as 65% losses occur in the first trimester.[10] Pregnancy outcomes also dramati-cally improve after surgical correction of septate uterus with 80% term delivery, 5% preterm delivery and 15 % pregnancy loss.[11]

Our study also revealed myoma and polyp in 32 (6.6%), synechiae in 22 (4.5%). In infertile patients about 20% of hysteroscopic examination shows some grade of intrauterine abnormalities.[12] This is at par with our study 22.3% (108/483). In a study comparing hysteroscopy with HSG, the latter showed a false negative rate of 12% and the complication rate of diagnostic hysteroscopy can be as low as 0.012%.[12,13]

In a retrospective study of 495 infertile women with unexplained infertility, laparoscopy before starting treat-ment revealed a significant incidence of abnormalities resulting a change in decision.[15] Similarly when patients with unexplained infertility following standard infertility screening tests underwent diagnostic laparoscopy, 21-68% of these patients was found to have pathologic abnormalities which included endometriosis and tubal disease.[14,16,17] Our results at laparoscopy and dye studies had shown bilateral tubal patency in 613 (91.7%), bilateral tubal block in 25 (3.6%) and unilateral tubal block in 30 (4.4 %) of infertile patients.

In one study at laparoscopy, bilateral tubal patency was demonstrated in 86.67%, bilateral tubal block in 5% and unilateral block in 8.33% of patients.[9] In our study, pelvic pathology by laparo-scopy was confirmed in 59.5% of our cases, which was similar to other studies.[16,17]

Thus, diagnostic laparoscopy is the standard means of diagnosing the tubal pathology, peritoneal factors, ovarian factors and uterine factors as cause of infertility. In a comparative study between HSG and laparoscopy done by La Sala et al. for evaluation of tuboperitoneal factors, he had shown a false negative rate 35.5% and false positive rate of 37.7% for HSG, and Snowden et al also in their study obtained the false negative rate of 13% and false positive rate of 16% for HSG.[18]

HSG showed tubal block in 11 cases, but dye studies showed block in only 7, a false positive rate of 36.3%.

CONCLUSION

As a whole, pelvic pathologies were confirmed in 59.5% of patients and intrauterine pathologies in 22.3% of patients by simultaneous diagnostic hysterolaparoscopy. With the view of the low complication rate, minimal time requirements, dealing the abnormal finding therapeutically at the same sitting, a negligible effect in the postoperative course and significant advantage over HSG, hysterola-paroscopy should be considered as a definitive day care procedure for evaluation and treatment of female infertility.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Antaratani RC, Harsha B. Hysterolaparoscopy in the evaluation and management of female infertility. Int J Reprod Contracept Obstet Gynecol 2017;6:4454-7.