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Original Research Article

Role of diagnostic hysterolaparoscopy in evaluation of female infertility

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ABSTRACT

Background: Infertility affects 10-15% of reproductive age couples. Routine pelvic examination and usual diagnostic procedures can miss majority of the pelvic pathologies. Hysterolaparoscopy is an effective tool for diagnosing these pathologies and additionally therapeutic procedures, like polypectomy, myomectomy, septal resection and adhesiolysis, can be done in the same sitting. Objective of present study was to determine the role of diagnostic hysterolaparoscopy for evaluating the causes of infertility.
Methods: It was a prospective study conducted at the Department of OBGY from September 2015 to August 2016. Patients aged 20-40 years with infertility were included in the study. The prevalence of different lesions was analysed.
Results: Out of the 30 patients studied, most had primary infertility. Laparoscopic abnormalities (56.6%) were more common than hysteroscopic abnormalities (36.6%). Adnexal adhesions (26.6%) was the most common abnormality detected on laparoscopy, while the common intra-uterine pathologies were uterine septum and synechiae.
Conclusions: Hysterolaparoscopy may be recommended as the procedure of choice for evaluation of female infertility, which are usually missed by imaging modalities.

Keywords: Infertility, Laparoscopy, Adhesions, Synechiae, Septum

INTRODUCTION

Infertility affects 10-15% of reproductive age couples.[1] Infertility is defined as failure to achieve clinical pregnancy after 12 months of regular unprotected vaginal intercourse. However, in patients more than 35 years of age, evaluation should be done after 6 months itself. Female factor is responsible for 40-45% of etiology of infertility.[2] Diagnostic laparoscopy is essential for deciding the further plan of action.[3] Routine pelvic examination and the usual diagnostic procedures can miss majority of the pelvic pathology.

Hysterolaparoscopy is a very effective tool because the uterus, tubes, adnexa, peritoneum, uterine cavity and tubal patency can be assessed in one sitting and if required, procedures like septal resection, adhesiolysis, PCOS drilling, tubal cannulation, etc can be done in the same sitting.[4] In this study, the role of hysterolaparoscopy in evaluation of infertility was studied.

METHODS

This was a prospective study conducted at the Department of OBGY from September 2015 to August 2016. Patients in the age group 20-40 years were included in the study. Both patients of primary and secondary infertility of more than one year duration were included. Primary infertility patients were those who had never conceived before, while secondary infertile patients had at least one prior conception, irrespective of the outcome.

Inclusion criteria

- Patients aged 20-40 years of primary and secondary infertility of more than one year duration

- Women who failed to conceive even after six cycles of infertility treatment
- Women with suspected tubal pathology, endometriosis and unexplained infertility.

Exclusion criteria

Active genital tract tuberculosis or pelvic inflammatory disease. The following parameters were noted during laparoscopy, ie, adhesions, tubal pathology, PCOS, uterine anomaly, myoma, etc. Uterine septum, synechiae, tubal ostia, etc were assessed during hysteroscopy. Therapeutic hysterolaparoscopic procedure performed were also noted. Diagnostic hysterolaparoscopy was performed in the follicular phase of the cycle. Methylene blue dye was used for chrompertubation.

Statistical analysis

Statistical analysis was done using SPSS software version 16.

RESULTS

Out of the 30 cases studied, 70%(21) were primary infertility and 30%(9) were of secondary infertility.

Most of the patients of primary infertility were in the age group 18-25 years, while secondary infertility patients were elder. While laparoscopy detected abnormalities in 56.6% of cases, hysteroscopy detected abnormalities in 36.6% of the cases.

Table 1: Distribution of infertility cases according to age.

Age	Primary infertility (21)	%	Secondary infertility (9)	%	Total cases	Total percentage
18-25 years	12	57.14	2	22.2	14	46.67
26-30 years	7	33.34	5	55.5	12	40
31-35 years	2	9.52	1	11.11	3	10
36-40 years	-		1	11.11	1	3.33

Table 2: Laparoscopic findings.

Laparoscopic findings	Primary infertility (21)	%	Secondary infertility (9)	%	Total cases	Total percentage
Normal	11	52.38	6	66.6	17	56.66
Adhesions	5	23.80	3	33.3	8	26.6
Tubal pathology	1	4.76	1	11.11	2	6.66
PCOS	4	19.04	-	-	4	13.33
Uterine anomaly	2	9.52	-	-	2	6.66
Endometrioma	1	4.76	-	-	1	3.33
Myoma	-	-	-	-	-	-

Maximum patients, i.e., 57.14% of primary infertility belonged to age group 18-25 years, while most patients of secondary infertility, i.e, 55.5% were in the age group 26-30 years as seen in Table 1. Most common laparoscopic abnormality in primary and secondary infertility group was pelvic adhesions seen in 23.80% and 33.3% of the cases respectively as seen in Table 2. Adhesions were mainly adnexal adhesions, tubal adhesions, peritoneal omental and subdiaphragmatic. One patient had Fitz Hugh Curtis Syndrome. Overall the most common laparoscopic finding was adhesions seen in 26.6% followed by PCOS (13.3%).

Table 3: Hysteroscopic findings.

Hysteroscopic finding	Primary infertility (21)	%	Secondary infertility (9)	%	Total cases	Total percentage
Normal	15	71.42	4	44.44	19	63.33
Septum	3	14.28	1	11.11	4	13.33
Synechiae	1	4.76	3	33.33	4	13.33
Ostia not visualized	1	4.76	2	22.22	3	10
Polyp	-	-	-	-	-	-

Most common hysteroscopic abnormality in primary infertility group was uterine septum seen in 14.28% cases, while in secondary infertility group it was synechiae seen in 33.33% of the cases as seen in Table 3. Overall, uterine septum and synechiae were the most common hysteroscopic findings.

Table 4: Simultaneous operative procedures done.

Procedure	Primary infertility (21)	%	Secondary infertility (9)	%	Total cases	Total percentage
Laparoscopic ovarian drilling	3	14.28	-	-	3	10
Endometrioma removal	1	4.76	-	-	1	3.33
Laparoscopic adhesiolysis	1	4.76	-	-	1	3.33
Hysteroscopic septal resection	2	9.52	1	11.11	3	10
Hysteroscopic adhesiolysis	-	-	2	22.22	2	6.66
Hysteroscopic cannulation	-	-	2	22.22	2	6.66

Table 4 shows that out of the 4 patients with uterine septum, hysteroscopic septal resection was done in 3 patients. The 4th patient had a partial septum only, hence no resection was done. In the two patients of tubal blockage in whom hysteroscopic cannulation was done, chromopertubation came positive post cannulation. One patient had bilateral large endometriomas which were drained and cyst walls were cauterized and adhesiolysis was done. Ovarian drilling was performed in 3 patients.

Table 5: Results of chromopertubation.

Result	Primary infertility (21)	%	Secondary infertility (9)	%	Total cases	Total percentage
Spill present	14	66.66	4	44.44	18	60
Bilateral block	3	14.28	2	22.22	5	16.66
Unilateral block	3	14.28	-	-	3	10
Delayed spill	1	4.76	3	33.33	4	13.33

DISCUSSION

In present study, 70% cases had primary infertility, while 30% had secondary infertility as seen in Table 1. Similar observations were recorded in Nayak's studyin Cuttack.[5] They also recorded that secondary infertility patients were slightly elder than patients with primary infertility, as seen in Present study too. In Present study, laparoscopy detected pelvic abnormalities in 56.6% cases which is similar to other studies which is evident from Table 2.[6,7]

The most common pelvic abnormality detected by laparoscopy was adhesions in both the groups (26.6%) as seen in Table 2. This can be due to pelvic inflammatory disease, previous surgeries and high prevalence of pelvic tuberculosis.[8] Tubal and peritoneal pathology account for infertility in 30-35% of the cases.[9]

Most common hysteroscopic abnormality detected was septate uterus in primary infertility group (14.28%) (Table 3). Uterine pathologies are responsible for 15% of infertility patients who seek treatment.[10] Septate uterus is associated with high rates of reproductive failure.[11] However, pregnancy rates improve dramatically after surgical correction. Hysteroscopic septal resection has revolutionized the treatment and associated with minimal complications. In present study, hyteroscopic septal resection was done in 3 patients (Table 4). In secondary infertility group, most common abnormality was synechiae which can be due to previous history of dilatation and curettage or dilatation and evacuation [12]. Hysteroscopic adhesiolysis was done in 2 patients of secondary infertility (Table 4).

In present study, chromopertubation test showed unilateral block in 10% cases and bilateral block in 16.6% of the cases (Table 5), which are similar to Nayak's study. Hysterosalpingography can also be used to assess tubal patency, but it is associated with complications like infection, radiation exposure, contrast allergy, etc.[13]

In present study, there was no complication reported in any procedure performed, except for mild postoperative pain in few patients.

CONCLUSION

Hysterolaparoscopy is a very safe and effective procedure for evaluation of female infertility. It can be performed as a day care surgery and patient can be discharged on the very same day. It can detect the abnormalities which are missed by routine investigations and correctable abnormalities can be dealt with in the same setting. It may be recommended as the final procedure for evaluation of female infertility.

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