Diagnostic hysterolaparoscopy in evaluation of female infertility in a Rural Medical College

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Abstract

Objective: To study the efficacy of combined diagnostic hystero-laparoscopy in evaluation of causes of female infertility.

Methods: Ours was a retrospective study conducted in the Department of Obs & Gyn from January 2013 to May 2016. Patients of age-group 20-40 years were included in the study.

Results: Of the 100 patients, 64% were cases of primary infertility and the rest 36% had secondary infertility. Laparoscopic abnormalities were more than hysteroscopic abnormalities in both the groups. Laparoscopy detected abnormalities in 36% of cases while hysteroscopy was helpful in diagnosing 20% of abnormalities. Combined diagnostic hysterolaparoscopy detected abnormalities in 28% of the infertile patients in both groups. Enlarged poycystic ovaries accounted for the most common laparoscopic abnormality(9%) followed by endometriosis (7%) and tubal pathology(6%). Myomas were seen in 4% cases, adenomyosis and adnexal pathology were detected in 3% of cases each. 20% cases had uterine causes of infertility. By Hysteroscopy the most common intrauterine malformation was a partial septum which was seen in six cases in the primary infertility group. Endometrial polyp, myoma and synechia were also diagnosed by hysteroscopy in both the groups of infertility. Post procedure two cases had port site infection, for which they were appropriately treated and followed up. Rest of the cases had no major surgical or anaesthetic complications.

Conclusion: Combined hysterolaparoscopy can be safely employed for evaluation of infertility to diagnose & appropriately treat lesions of pelvis and uterus. This procedure can be used as a first line investigation for evaluation of female infertility.

Keywords: Hysteroscopy, Laparoscopy, Infertility

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Introduction

Infertility affects about 10-15% of reproductive age couples[1,2]. Infertility, according to WHO, is defined as a disease of the reproductive system defined by failure of clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. Prevalence of infertile individuals is rapidly increasing globally. Female factors contribute 40-45% in etiology of infertility[3]. Diagnosis and treatment of female infertility stands out as the most rapidly evolving area in reproductive medicine. Routine pelvic examinations and the usual diagnostic procedures often fail to correctly diagnose the majority of pelvic pathology in infertile women. Laparoscopy has become an essential part of infertility evaluation by virtue of it's ability to visualize and manipulate the uterus, fallopian tubes and the ovaries. Diagnostic laparoscopy is thus essential in determining the optimal management plan[4]. Hysteroscopy too has become an equally important investigative tool for visualizing the uterine cavity and identifying possible causes of female infertility. The question of tubal morphology and patency, ovarian morphology, any unsuspected pelvic pathology, and uterine cavity abnormalities can all be resolved with accuracy at one session[5].

This study was undertaken to evaluate the safety and efficacy of hysterolaparoscopy for evaluation of causes of female infertility.

Materials and Methods

This was a retrospective study which was conducted in the Department of Obs & Gyn, KIMS, Narketpally from January 2013 to May 2016. Patients between 20 to 40 years of age with either primary or secondary infertility of more than 1 year duration were included in the study. Primary infertility patients were those who had never conceived before, whereas secondary infertile patients had at least one prior conception, irrespective of the outcome of the conception. Patients who presented with failure to conceive even after six or more cycles of infertility treatment, patients with suspected fallopian tube abnormalities or endometriosis or patients with unexplained infertility were included in this study. Patients with active genital infection were excluded. Couples presenting with abnormal semen analysis report were also excluded from our study. Diagnostic hystero laparoscopy with chromo pertubation test was performed in the early follicular phase in all the

patients. Data was collected pertaining to the prevalence of different lesions and was analyzed.

Results

Of the 100 patients, 64% women had primary infertility and the rest 36% had secondary infertility. Patients of secondary infertility were somewhat elder compared to primary infertility group. Abnormalities detected by laparoscopy were more common than those by hysteroscopy, both in the primary (40.6% vs 20.3%) and secondary(27.7% vs 19.44%) infertility groups.

Table 1: Prevalence of abnormalities in primary infertility group

Procedures	Primary (n=64)	Primary (n=64)
	Normal	Abnormal
Laparoscopy	38(60%)	26(40.6%)
Hysteroscopy	51(80%)	13(20.3%)

Table 2: Prevalence of abnormalities in secondary infertility group

Procedures	Secondary (n=36)	Secondary (n=36)
	Normal	Abnormal
Laparoscopy	26(72.2%)	10(27.7%)
Hysteroscopy	29(80.55%)	7 (19.44%)

Ovarian pathology in the form of PCOS and endometriosis were the most common abnormalities detected in laparoscopy in both the groups.

Table 3: Prevalence of different lesions detected in laparoscopy

Lesions	Primary(64)	Secondary(36)	Total(100)
Endometriosis	6(9.4%)	1(2.7%)	7(7%)
Myoma	2(3.12%)	2(5.5%)	4(4%)
Tubal pathology	4(6.2%)	2(5.5%)	6(6%)
Adenomyosis	2(3.12%)	1(2.7%)	3(3%)
Ovarian pathology(PCOS)	7(10.9%)	2(5.5%)	9(9%)
Uterine anomaly	3(4.7%)	1(2.7%)	4(4%)
Adnexal adhesions	2(3.12%)	1(2.7%)	3(3%)
Normal	38(59.4%)	26(72.2%)	64(64%)

Septum was the most common lesion detected in hysteroscopy, all of which were seen in primary infertility group. All were partial septum and septoplasty was done in two cases in a separate setting.

Table 4: Prevalence of different lesions detected in hysteroscopy

Lesions	Primary(64)	Secondary(36)	Total(100)
Polyp	3(4.7%)	2(5.5%)	5(5%)
Septum	6(9.4%)	0	6(6%)
Myoma	2(3.12%)	2(5.5%)	4(4%)
Synechiae	2(3.12%)	3(8.33%)	5(5%)

The prevalence of unilateral and bilateral tubal block was almost similar in both primary and secondary infertility groups.

Table 5: Prevalence of tubal block as detected on

Chromopertubation Test			
Site	Primary(64)	Secondary(36)	Total(100)
Unilateral	6(9.37%)	3(8.33%)	9(9%)
Bilateral	4(6.25%)	4(11.11%)	8(8%)

Except for two cases of port site infection postoperatively, there was no major surgical or anaesthetic complications in any of our cases.

Discussion

In our study, out of the 100 infertile women, 64% of women had primary infertility and 36% had secondary infertility. A similar observation was made in Nayak`s study[6] in Cuttack, they observed 69% of cases had primary infertility and secondary infertility in 35% of cases. They also made an observation that secondary infertility patients were slightly elder to that of primary group, in our study, primary infertility seen in age group of 20-35yrs age group and secondary infertility in 30-40 yrs of age group.

In primary infertility group we observed that laparoscopic abnormalities were more common than hysteroscopic abnormalities. (40.6% vs 20.3% $p<0.0001$). In nayak study laporoscopic abnormalities

were more common than hysteroscopic studies (35% vs 17% p<0.0001).

In secondary infertility group laparoscopic abnormalities were 27.7% vs 19.44% of hysteroscopic abnormalities. In Nayaks study among secondary infertility group, 30% of cases had laparoscopic abnormalities and 22% had hysteroscopic abnormalities.

Jayakrishna et al[7] in 2010 detected pelvic pathology in 26.8% of cases of infertile patients by laparoscopic evaluation. Nayak study in 2015 observed 30% 0f pelvic pathology, where as in our study 36% of cases pelvic pathology was detected by laparoscopy, this is because of increase in ovarian pathology (PCOS)

The commonest pathology detected by laparoscopy in both groups were ovarian pathology, accounting for 25% of all abnormalities. Similar results were seen in a study done in Punjab in 2015 by Puri S et al[5], they detected PCOS in 22% of cases. Another study by Kabadi[8] et al in 2016 also found that ovarian pathology was the most common laparoscopic abnormality ie., 20.8%.

The next common abnormality found in laparoscopy was endometriosis in 19.44% of cases. Similar observation was made by Suman puri et al, where they detected 18% of cases with endometriosis by laparoscopy. Adnexal and tubal pathology were other abnormalities detected by laparoscopy. Similar observation was made in different studies.

Uterine pathology are the causes of infertility in as many as 15% of infertile cases seeking infertility treatment[9] and are diagnosed in as many as 50% of infertile patients[10,11,12]. Hysteroscopic abnormalities were detected in 20% of infertile patients. Among all congenital uterine abnormality, septate uterus is the most common cause associated with highest reproductive failure rate[13,14]. In our study we observed 6 cases with septum in the uterus.

Hysteroscopic abnormalities other than septum were polyps, submucous fibroids and uterine synechia similar to other studies[6,15](Nayak et al, Kaminiski p).

Chromopertubation test detected unilateral tubal block in 9% of cases and bilateral tubal block in 8% of cases. Nayak study detected 10% unilateral & 10% bilateral block. Another study done in Nagpur diagnosed 7.29% cases with unilateral tubal block and 11.4% cases with bilateral tubal block, similar to our study.

Conclusion

Hysterolaparoscopy is a safe, minimal invasive procedure for comprehensive evaluation of infertile patients. Apart from diagnosis, some of the feasible corrective surgeries can be done simultaneously, like ovarian drilling in PCOS, adhesiolysis, polypectomy septal resection by experienced hands with proper selection of cases.

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