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HYSTEROLAPAROSCOPY- SEE AND TREAT INFERTILITY : A PROSPECTIVE OBSERVATIONAL STUDY IN RURAL INDIA

Dr.Meka Keerthana Postgraduate Student, Department of Obstetrics and Gynaecology, Rural Medical College, Loni, Ahmednagar, Maharashtra, India.

Dr. Shweta Dewani Senior Resident, Department of Obstetrics and Gynaecology, Rural Medical College, Loni, Ahmednagar, Maharashtra, India

Dr. Bangal Vidyadhar* Professor and Head, , Department of Obstetrics and Gynaecology, Rural Medical College, Loni, Ahmednagar, Maharashtra, India.*Corresponding Author

ABSTRACT **Introduction:** Although population explosion is a major problem in India, infertility appears to be a problem in 10-15% of population. This is compounded by the trend towards delayed child bearing to achieve socio-economic, educational and professional goals. In this regard, some tests should be included in routine workup for infertility which can outline the way of treatment by identifying the precise underlying cause. Diagnostic Hysterolaparoscopy is one such tool which requires resources available in low resource settings. **Aims and Objectives:** To study the role of laparoscopy and hysteroscopy in evaluation of female infertility in rural area. **Materials and methods:** A prospective observational study was conducted in women presenting with primary or secondary infertility at Pravara Rural Hospital, a tertiary care teaching hospital in Maharashtra during the period of January 2021 to August 2022. **Observations and Results:** During the study, a total of 85 admissions took place, 47.05% of which were 21-25 years of age and 35.29% belong to 26-30 years of age. Majority of women had BMI in the range of 18.5-24.9, only 8.23% suggested obesity. 24.7% of women had positive hysteroscopic findings. In laparoscopy, 21.17% of them had ovarian findings. 17.64% had hydrosalpinx and chromopertubation revealed tubal block in 21.58% of cases. Uterine fibroid was seen in 2.35% of cases. Total pelvic pathology was observed in 57.64% of cases and no cause was detected in 42.35% of them. **Discussion** and conclusion: Laparoscopy has become gold standard for diagnosis of pelvic and peritoneal diseases as direct visualisation of abdominal and pelvic organs allows a definitive diagnosis. Hysteroscopy has been proved to be definitive method for evaluation of uterine cavity and associated anomalies. Simultaneously during procedure, therapeutic methods have also been employed. Thus, this study shows that Diagnostic Hysterolaparoscopy can be considered as a primary investigation for infertility evaluation with the view of low complication rates, minimal time requirement and negligible effect on post-operative course.

KEYWORDS :

INTRODUCTION

Although population explosion is a major problem in India, infertility appears to be a problem in 10-15% of population. This is compounded by the trend towards delayed child bearing to achieve socio-economic, educational and professional goals. The WHO estimates that 60 to 80 million couples worldwide currently suffer from infertility.1Among Indian women reporting for primary infertility, PID and STD prevalence is high.1 WHO estimates overall prevalence of primary infertility in India to be between 3.9 and 16.8%.1 In this regard, some tests should be included in routine workup for infertility which can outline the way of treatment by identifying the precise underlying cause.

Diagnostic Hysterolaparoscopy is one such tool which requires resources available in low resource settings. Laparoscopy is a minimally invasive surgical procedure in which gynaecologist examines organs of pelvic region to both identify and treat causes of infertility. Chromopertubation is done during laparoscopy to assess tubal patency. Hysteroscopy is a surgical process used to examine uterine cavity for abnormalities causing infertility. Studies by Wang et al. and Golan et al. reported HSG has a false positive rate of 15.6%and false negative rate of 35.4%.2,3 Also, studies done in past showed Hysterolaparoscopy have 100% specificity. In view of the above facts, present study was conducted to evaluate the different causes of primary and secondary infertility with Diagnostic Hysterolaparoscopy as primary tool of investigation.

AIMS AND OBJECTIVES

To study the role of laparoscopy and hysteroscopy in the evaluation of female infertility in rural area. To diagnose and correct specific causes of tubal, uterine and ovarian factors of infertility, whenever possible. To diagnose medical conditions (eg. tuberculosis) associated with infertility and their treatment.

MATERIALS AND METHODS

A prospective observational study was conducted in women presenting with primary or secondary infertility at Pravara Rural Hospital, a tertiary care teaching hospital in Maharashtra during the period of January 2021 to August 2022.

SOURCE OF DATA- Indoor case file of 85 women presenting with primary and secondary infertility at Pravara Rural Hospital.

INCLUSION CRITERIA

i. All cases of infertility with age 19 years or more
ii. Evidence of tubal disease/ uterine anomaly on clinical examination or USG
iii. Unexplained infertility when all other tests are normal.

EXCLUSION CRITERIA-

i.Recent uterine perforation
ii.Medically unfit patients who could not get anaesthetic clearance
iii.Acute pelvic infections

85 women satisfied the criteria and were included as study subjects. History was taken, investigation and examination performed and patients posted for the procedure under general anaesthesia after well informed, written consent was taken. Age, menstrual history, BMI, hysteroscopic findings and laparoscopic findings were collected in a structured pre-validated and pre-tested proforma.

RESULTS

In the present study, majority of patients were in primary infertility group (72.94%), while secondary infertility was present in 27.06% patients. Most of the patients, 40 (47.05%) were in the age group of 21-25 years, 3 patients were from 19-20 group and married 1-5 years before approaching for investigations for infertility(Table 1,2) . This is consistent with the early marriage and problem of high illiteracy in rural India. Patients trying to conceive decreased with age, thus between 36-40 years, only 4(4.40%) patients were present.

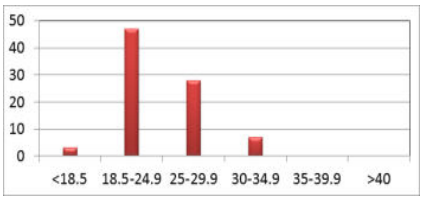
Table 1.Age distribution of cases

Age in years	Total no. of cases	Percentage
21-25	40	47.05%
26-30	30	35.29%
31-35	9	10.58%
36-40	4	4.70%

Table 2.Duration of Infertility in primary and secondary type

Duration of infertility in years	Primary infertility	Secondary infertility	Total
	No. of cases(%)	No. of cases(%)	No. of cases(%)
1-5	41(66.12%)	12(52.17%)	53(62.35%)
6-10	16(25.80%)	9(39.13%)	25(29.41%)
11-15	3(4.38%)	2(8.69%)	5(5.88%)
16-20	2(3.22%)	0(0%)	2(2.35%)
Total	62(72.94%)	23(27.05%)	85(100%)

Diagram 1.Distribution of cases according to body mass index



Only 7 patients (8%) suggested obesity and possibility of obese polycystic syndrome(PCOS). Majority of patients had BMI within normal range, 18-25 (55.29%). 32.94% patients have BMI 25-30, as most of them belong to middle class. (Diagram 1)

In hysteroscopy, intra-uterine adhesions were noticed in 10.58% cases. In 8 cases ostia were not visualized.72.29% had normal hysteroscopic findings. In laparoscopy, 96.47% cases had normal uterine findings,1 case had bicornuate uterus and 2 patients had uterine myomas. 82.35% had normal tubes, 77.64% bilateral patent in chromopertubation but delayed spillage was shown in 8 cases due to peritubal adhesions. Hydrosalpinx was seen in 15 patients, unilateral block in 10 cases and bilateral block in 9 cases. 74.11% had normal ovaries , those with polycystic ovaries, simultaneous ovarian drilling was done. No abnormality was found in pelvic cavity in 84.70% patients.

Table 3.Hysteroscopic Findings

Findings	No. Of cases	Percentage
Ostia not visualised	8	9.41%
Fibroid	2	2.35%
Polyp	1	1.17%
Adhesion	9	10.58%
Septum	1	1.17%
Total	21	24.70%

Table 4.Laparoscopic Findings

Findings	No. Of cases	%
1)Uterus		
Normal uterus	82	96.47%
Uterine myoma	2	2.35%
Congenital anomaly	1	1.17%
2)Tubes		
A)Appearance		
Normal	70	82.35%
Hydrosalpinx	15	17.64%
B)Chromopertubation		
B/L patent	66	77.64%
U/L block	10	11%
B/L block	9	10.58%
3)Ovaries		
Normal	67	74.11%
PCOD	18	21.17%
4)Pelvic cavity		
Endometriosis grade III/IV	8	9.41%
Pelvic adhesions	5	5.88%

DISCUSSION

Hysteroscopy has been proved to be the definite method for evaluation of the uterine cavity and diagnosis of associated abnormalities. 4,5 Several studies have demonstrated that once the uterine cavity has to be investigated as part of the infertility workup, hysteroscopy is much more accurate than other diagnostic methods, mainly HSG.4,6 In present study primary infertility was more dominating than secondary infertility in our area but according to a study done by Zargar et al, magnitude of primary infertility was 50%.7 While there is no universally accepted definition of advanced reproductive age, 35 years is considered as the limit in fertility terms (American Society of Reproductive Medicine 2006). A woman reaches her maximum fertility potential at the age of 30.8 In the present study we observed maximum number of infertile females in the age group of 21-25 years indicating a shift in the fertility potential age. In cases of secondary infertility, most of them previous abortion (17.39%) and preterm births(17.39%). Patient who underwent intrauterine instrumentation previously, more adhesions were present. Infertility factor which was observed at the time of procedure where ever possible , adhesiolysis was done in laparoscopy and hysteroscopy, ovarian drilling was done in cases of PCOD concurrently. In patients with chronic infection, endometrial PCR was also done. In present study, no major complications were observed either intra-operatively or post-operatively. Patients were closely observed for a period of 24 hours and were discharged. They were advised to follow-up for the treatment of factors detected and treated. Till this time, 3 patients have reported with conception.

CONCLUSION

Globally the incidence of infertility is increasing. Diagnostic hysteroscopy offers a reliable evaluation of the uterine cavity and subsequent detecton of intrauterine disease. Diagnostic laparoscopy is the standard means of diagnosing the tubal pathology, peritoneal factors, endometriosis and intra-abdominal causes of infertility. Not only does this help in identification of unsuspected pelvic pathology, but also contributes to decision making of infertility treatment.

With the view of low complication rates, minimal time requirement and a negligible effect on post-operative course, diagnostic hysterolaparoscopy can be performed as a part of routine workup in all infertile women. It has replaced other older methods of evaluation in view of distinctive advantages.

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