

Hysterosalpingographic evaluation of tubal pathology causes of primary infertility

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Abstract

Background: Most frequent cause of infertility in women is tubal occlusion. For evaluation of tubal pathology hysterosalpingography is useful method. Causes of tubal occlusion include genital tract tuberculosis, sexually transmitted disease, previous tubal surgery, peritubal adhesions and previous tubal pregnancy.

Methods: It is descriptive prospective study of total 75 patients. HSG done on 7th to 9th day of menstruation without anaesthesia under mild sedation in Gynaec OPD at Zenana Hospital, SMS Medical College, Jaipur.

Results: A total of 75 patients were involved in the study. Their age ranged from 25 to 35 years (mean 28 ± 2.96 years). The mean duration of infertility was 4 ± 1.98 years. 32 cases (42.67%) have bilateral tubal patency and 43 cases (57.33%) have bilateral tubal block.

Conclusion: HSG is the first step diagnostic test for tubal pathology evaluation. It is minimally invasive &

cost effective test for tubal evaluation.

Keywords: Hysterosalpingography, Tubal occlusion

Introduction

Infertility is most common disorder in reproductive age group couples. Infertility is defined as the inability to conceive after 1 years of regular unprotected sexual intercourse.^{1,2}

The last few decade risk of infertility increased because of an increase in genital tuberculosis, pelvic inflammatory disease and others sexually transmitted disease. Infertility also increase from last years due to increase tendency to delayed age of marriage.³

Tubo-peritoneal factor is responsible for 40-50% of infertility, uterine pathology about 15-20% of cases.⁴

In routine infertility workup hysterosalpingography is widely used as first line approach to assess the patency of fallopian tubes and uterine anomalies.⁵

Tubal abnormalities observed with HSG can be congenital, or due to spasm, occlusion or infection. Tubal occlusion manifests as an abrupt cutoff of contrast material with non-opacification of the distal fallopian tube, and can be unilateral or bilateral. Peritubal adhesions prevent contrast material from spilling into the abdominal cavity and distributing freely.^{6,7}

Material and Methods

A total of 75 cases were subjected for Hysterosalpingography. Hysterosalpingography was done in postmenstrual phase between 7th to 9th day of menstrual cycle.

Hysterosalpingography

- Povidone Iodine solution
- Sponge holding forcep
- Sim's speculum
- Vulsellum
- Radio opaque dye-Urografin 76%
- Dispovan 20 cc
- Radiographic table
- X-ray machine
- Leisch Wilkinson's cannula

The patients were explained and informed about procedure and written consent of them was obtained. On the night before the procedure laxative was given to patient. Prior to procedure antispasmodic injection intramuscularly was also given.

The patient was placed in dorsal position with her knee flexed. After cleaning vulva and vagina with antiseptic solution a Sim's speculum was introduced into vagina, and cervix was caught with Vulsellum and Leisch Wilkinson's cannula inserted into the cervix, speculum was removed and patient was carefully positioned underneath the X-ray device. The contrast materials

was injected through the canula into uterine cavity that began to fill the uterine cavity, fallopian tubes and spills into the peritoneal cavity and two X-ray images were taken.

If certain abnormality was encountered, the patient was asked to rest and wait upto 30 minutes so that a delayed image could be obtained.

Results

Table 1 : Distribution of Cases According to Age Group

Age Group (in yrs)	No.	%
25 - 28	38	50.67
28 - 30	18	24.00
31 - 32	13	17.33
32 - 35	6	8.00
Total	75	100.00
Mean ± SD	28 ± 2.96	

The table-1 shows that maximum number of patients 38 (50.67%) were in 25-28 yrs age group. The next common group being 28-30 yrs (24.00%). Patients between age group of 31-32 yrs were 13 (17.33%). Minimum numbers of patients 6 (8.00%) were in 32-35 yrs age group.

Table 2 : Distribution of Cases According to Religion

Religion	No.	%
Hindu	67	89.33
Muslim	8	10.67
Total	75	100.00

The table-2 depicts distribution of patients according to religion. Out of total 75 cases, 67 cases (89.33%) were Hindu and 8 cases (10.67%) were Muslim.

Table 3 : Distribution of Cases According to Socio-economic Status

Socio-economic Status	No.	%
Lower	17	22.67
Middle	51	68.00
Upper	7	9.33
Total	75	100.00

The table-3 show distribution of patient according to their socio-economic status. Maximum number of patients 51 (68.00%) belongs to in middle class, 17 (22.67%) patients belongs to lower class and minimum number of patients 7 (9.33%) belonged to upper class.

Table 4: Distribution of Cases According to Duration of Infertility

Duration of Infertility (in yrs)	No.	%
1 - 2	21	28.00
2 - 5	44	58.67
6 - 9	10	13.33
Total	75	100.00
Mean \pm SD	4 \pm 1.98	

The table-4 shows that maximum number of patient i.e. 44 (58.67%) had infertility of 2-5 yrs duration. 21 patients (28.00%) had infertility of 1-2 yrs and 10 cases (13.33%) had infertility of 6-9 yrs duration.

Table 5 : Hysterosalpingography Findings

	Hystero-salpingography	
	No.	%
B/L Tubal Patency	32	42.67
B/L Cornual Block	12	16.00
B/L Fimbrial Block	11	14.67
U/L Cornual Block	14	18.66
U/L Fimbrial Block	6	8.00
Total	75	100.00

The table-5 shows that in HSG, 32 cases (42.67%) had bilateral tubal patent, in 12 cases (16.00%) bilateral cornual block was present, 14 cases (18.66%) had unilateral cornual block, 11 cases (14.67%) had

bilateral fimbrial block and in 6 cases (8.00%) there was unilateral fimbrial block.

Table 6: Complications During Hysterosalpingography

Complications	Hystero-salpingography	
	No.	%
Severe Pain	3	75.00
Vomiting	1	25.00
Fever	0	0.00
Stitch Line Defect	0	0.00
Total	4	100.00

Above table shows that during HSG three patients complain of pain and one patient complain of vomiting.

Discussion

Present study was conducted on 75 infertile women in Zenana Hospital, Chandpole affiliated to Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur during the period May 2018 to June 2019.

Our study show that mean age of infertile women is 28 \pm 2.96 years, similar study conducted by Ngowas JDK et al (2015)⁸ and Bhandari S et al (2015)⁹ the mean age of infertility was 31.4 \pm 6.45 years and 29.8 years respectively.

In this study maximum patients belong to Hinduism community (89.33%) and only 10.67% patients were Muslims. According to census 2011 3/4th population in Jaipur belongs to Hinduism, so maximum number of patients (68%) were from middle class.

Our results were comparable to study done by Lall SS et al (2007)¹⁰ had 9% of patients from middle socio-economic class.

In our study shows that mean duration of infertility was 4 \pm 1.98 years. Our results were also comparable to study done by Puri S et al (2015)¹¹ showed that mean duration of infertility as 6.8 \pm 5 years for primary infertility and 8.32 \pm 4.6 years for secondary infertility.

In our study 32 cases (42.67%) have bilateral tubal patency and 43 cases (57.33%) have tubal blockade. Our results were comparable to study done by Bacevac J et al (2001)¹² who show that in total 140 cases 53 cases (37.9%) have bilateral tubal patency and 67 cases (47.9%) have bilateral tubal blockade.

It is found that tubal pathology is significantly higher in our study. This may be due to higher incidence of tuberculosis in India. Our study also show that HSG had fewer minor complications.

Conclusion

HSG is first simple diagnostic method for tubal pathology evaluation, high incidence of tubal disease in infertile women due to genital tract infection and pelvic inflammatory disease.

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