ORIGINAL RESEARCH ARTICLE

A Study on Role of Hysterosalpingogram (HSG) in Evaluation of Female Infertility

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How to cite this article: T. Muni Kumari, Aavula Swetha, Himabindu Sangabathula. A study on role of hysterosalpingogram (HSG) in evaluation of female infertility. International Journal of Contemporary Medicine Surgery and Radiology. 2017;2(4):164-166.

ABSTRACT

Introduction: Infertility has important social and personal complications in most parts of the country. Hysterosalpingography has for many years being an invaluable procedure for the assessment of tubal patency and intrauterine pathology in infertility. Study was done to find the role of HSG in evaluation of female infertility

Material and Methods: A total of 50 primary infertility and secondary infertility patients were examined to evaluate the female infertility by using HSG at Modern Government Maternity Hospital, Hyderabad from June 20014 to December 2015 in the present study

Results: The incidence of duration of infertility was between 6-10 years and majority in 26-30 years age group was noted in the present study. Hysterosapingogram examination showed 48 patients (96%) have normal uterus and 2 patients have arcuate and 3 had bicornuate uterus. In one case there is filling defect due to fibroid. Related to tubal findings among 50 patients 42 patients (84%) has patent tubes with bilateral spillage.

Conclusion: Uterine and Tubal pathologies plays major role in female infertility, the present study suggests the HSG diagnostic and therapeutic role in evaluation of female infertility.

Keywords: Hysterosalpingogram, Infertility, Ultrasound

INTRODUCTION

Infertility is defined as one year of unprotected intercourse without pregnancy, primary infertility defined as in which no previous pregnancies have occurred and secondary infertility is the one in which a prior pregnancy that can be either live birth or not has occurred[1]. Several procedures for investigation are used during routine evaluation of female infertility like laproscopy, hysteroscopy, laprotomy, rubins air insufflation test, dilatation and curettage. The radiological methods to investigate female genital tract anatomy are HSG, ultrasound and MRI pelvis[2,3]. Hysterosalpingography known to be very efficient in the detection of mechanical causes of female infertility such as tubal occlusion, pelvic masses and peritubal abnormalities and it has a sensitivity of 85 to 100% in identifying tubal occlusion[4]. Ultrasound is the first line imaging investigation where as HSG is more commonly requested in the investigation of female infertility if tubal involvement is suspected[5]. The present study was undertaken to study the role of HSG in evaluation of female infertility.

MATERIAL AND METHODS

The present study was conducted in Modern Government Maternity Hospital, Hyderabad from June 20014 to December 2015. A total 50 patents between ages of 17 and 37 years were examined by taking through history, general physical examination, abdominal and pelvic examination. Male factor is excluded by seminal analysis. Patients were selected on the basis of history and physical examination. The series included 50 female infertility cases of which 36 were primary and 14 were secondary infertility [Table-1]. Patients were given appointment on 8th to 10th day of cycle. Initially pelvic scan was done, on the same day HSG was performed with conray 280 (containing 280 mg I/ml) 10-15 ml was used as contrast medium. Every patient was asked to empty the urinary bladder before the hysterosalpingogram examination. The procedure is briefly explained to the patient after entering the x-ray room and consent was obtained.

Results

The incidence of duration of infertility was between 6-10 years and majority in 26-30 years age group was noted in the present study [Table-2 and 3]. The incidence of menstrual abnormalities in infertility menstrual cycles were normal in 27 primary and 7 secondary infertility cases. We have noted dysmenorrhoea in 7 patients with

primary, 5 patients of secondary infertility, menorrhoea in primary patients alone in 2 cases and oligomenorrhoea in 2 patients alone in secondary infertility cases in the present study [Table-4].Among 50 cases ultrasound examination we have found 44 normal cases (88%)and 3 patients with Bicornuate uterus (6%), 2 patients with Fibroid uterus(4%) and one patient with ovarian cyst(2%) in the present study [Table-5]. On hysterosalpingogram examination out of 50 patients 48 patients (96%) have normal uterus [Figure-1] and 2 patients have arcuate and 3 had bicornuate uterus [Table-6]. In one case there is filling defect due to fibroid. Related to tubal findings among 50 patients 42 patients (84%) has patent tubes with bilateral spillage. 2 cases of primary infertility were of bilateral blocked tubes. One patient has right fimbrial block with left spillage and one had left tubal block with right spillage.4 cases had hydrosalpinx of which one is

Type	No. of cases	Incidence (%)
Primary	36	72
Secondary	14	28

Table-1: Incidence of Patients with Type of Infertility

Duration in years	Primary infertility		Secondary infertility	
	Number	%	Number	%
01 to 05	21	58.33	4	28.56
06 to 10	09	23.00	8	56.28
Above 10 years	06	16.66	2	14.26

Table-2: Duration of Infertility

Age group	Primary		Secondary		Total	
	NO	%	No.	%	No.	%
Up to 20 years	05	10	---	---	05	10
21 to 25 years	07	14	02	04	09	18
26 to 30 years	22	44	10	20	32	64
31 to 35 years	02	04	01	02	03	06
35 and above	---	--	01	02	01	02

Table-3: Incidence of Infertility According to Age of Patient

	Primary Infertility		Secondary Infertility	
	No	%	No	%
Normal	27	54	07	14
Dysmenorrhoea	07	14	05	10
Menorrhagia	02	04	----	----
Oligomenorrhoea	----	----	02	04

Table-4: Incidence of Menstrual Abnormalities in Infertility

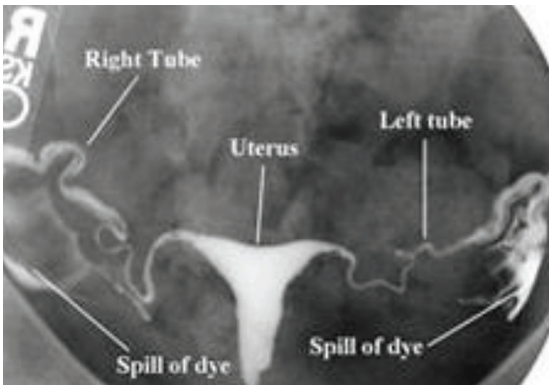

Figure-1: Normal Hysterosalpingogram of a patient with dye spillage

Findings	Primary Infertility		Secondary Infertility	
	Number	%	Number	%
Normal	33	66	11	22
Bicornuate uterus	02	04	01	02
Fibroid	01	02	01	02
Ovarian cyst	---	---	01	02

Table-5: Ultrasound findings in the Representative Cases

Uterus	Primary Infertility		Secondary Infertility	
	Number	%	Number	%
Size				
Normal	34	68	14	28
Small	01	02	----	----
Large	01	02	----	----
SHAPE				
Normal	34	68	11	22
Bicornuate	02	04	01	02
Arcuate	---	----	02	04
Surface				
smooth	35	70	14	28
Irregular with filling defect	01	02	----	----

Table-6: Uterine Findings on HSG

Findings	Primary Infertility		Secondary Infertility	
	Number	%	Number	%
Normal tubes with bilateral spillage	31	62	11	22
B/L blocked tubes	02	04	---	---
B/L hydrosalpinx with spillage	01	02	---	----
B/L hydrosalpinx with block	---	---	01	02
Rt.block with left spillage	01	02	---	----
Lt.block with rt.spillage	---	---	01	02
Rt.hydrosalpinx with block	---	---	01	02
Lt.hydrosalpinx with block	01	02	----	----

Table-7: Tubal Findings and Peritoneal Spillage on HSG

bilateral hydrosalpinx with block and another case is of left hydrosalpinx with no spillage on left side [Table-7].

DISCUSSION

The minimum ages of women referred for HSG were 25 years and 15 years respectively. The differences in age of the women may not be unconnected with socio-cultural, tribal/ethnic and even religious beliefs which affect age of marriage of women in different parts of the country[6,7]. The incidence of menstrual abnormalities in infertility menstrual cycles were normal in 27 primary and 7 secondary infertility cases in the present study. Secondary infertility among the women studied was very high (70.0%) reported a preponderance of cases of secondary infertility among women in Sub-Saharan Africa[8,9]. The results in the present study related to secondary infertility were low incidence when compared to previous literatures. Lash et al.,[10] had previously established an association between secondary infertility and fallopian tube occlusion, these results further stress the fact that infection may have been a major cause of infertility among the population studied. Among 50 patients 42 patients (84%) have patent tubes with bilateral spillage, 2 cases of primary infertility were of bilateral blocked tubes and one patient has right fimbrial block with left spillage, 1 patient had left tubal block with right spillage in the present study. we have also observed 4 cases had hydrosalpinx (2-bilateral hydrosalpinx with block; 1-left hydrosalpinx with no spill on left side,1-unilateral right hydrosalpinx) in the present study on HSG examination. Tubal abnormalities observed with HSG can be congenital, or due to spasm, occlusion or infection. Peritubal adhesions prevent contrast material from spilling into the abdominal cavity and distributing freely[11,12]. There was improved patency of the fallopian tube due to the flushing during the examination in therapeutic exposure of HSG was noted[13]. We have observed HSG plays major role in investigation of tubal pathology of the infertile women in both primary and secondary infertility conditions. The results of the present study indicating the increased incidence of primary infertility and role of HSG as advanced investigation when compared to ultra sound examination to reduce the risk of female infertility in Indian population[10,13].

CONCLUSION

The present study suggests that evaluation of female infertility by using HSG plays diagnostic and therapeutic role in reducing risk factors in upcoming generations.

Acknowledgements

Authors are thankful to the Staff, Department of Radiology, Modern Government Maternity Hospital, Hyderabad for their inconstant help during the work.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 08-11-2017; **Published online**: 10-12-2017