

Frequency of Tubal Spasm During Hysterosalpingography

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ABSTRACT

Aim: To determine the frequency of tubal spasm during hysterosalpingography at Nishtar Hospital Multan. **Methods:** This descriptive study was carried out in the Department of Obstetrics & Gynecology, Nishtar Hospital Multan from September 2013 to March 2014. Two hundred and seventeen women with primary or secondary infertility from gynecological outpatient department fulfilling inclusion criteria were selected.

Results:- Among 217 patients of subfertility, majority of the patients (33.64%) was in age group 26-30 years and was nullipara. Majority of patients i.e. 51.15% were illiterate and were belonging to poor socioeconomic class. 61.29% were having primary subfertility. Secondary subfertility was reported in 38.70% of cases. Frequency of tubal spasm during hysterosalpingography was 13.36%.

Conclusion:- HSG is an important diagnostic test in the evaluation of intrauterine abnormalities and tubal patency in the infertility workup of female patients.

Keywords:- Hysterosalpingography, tubal spasm, primary subfertility.

INTRODUCTION

Infertility is defined as inability of couple to conceive following 12–24 month of exposure to pregnancy and when such a condition faced by a couple, it causes enormous distress to the affected¹. The overall prevalence of infertility worldwide is 3% to 7%². It may be primary and secondary³. Overall prevalence of infertility in Pakistan is 21.9% of which primary infertility is 3.5% and secondary is 18.4%⁴ and idiopathic infertility in 17% of the couples⁵. Patency of fallopian tubes and its normal functions are prerequisites for human fertility⁶. Fallopian tubes serve as the passageway for the ovum to travel from the ovary to the uterus. They are 10–12 cm in length and course along the superior aspect of the broad ligament.

Infertility has many causes and one of the major causes is tubal blockage⁷, which contribute 15% to 30%¹. Primary infertility due to tubal blockage is 15% and secondary infertility is 40%⁸. Causes of tubal blockage are due to sexually transmitted infection, past pelvic surgery, endometriosis and occasionally mullarian developmental anomaly¹. Investigation for tubal factor infertility includes hysterosalpingography (HSG), hysteroscopy and laparoscopy⁸.

HSG is integral part of gynaecological examination⁹. HSG may be a screening procedure¹⁰. It is a special X-ray using dye to look at uterus and fallopian tube. It involves the injection of oil soluble contrast medium through cervix¹¹. The fluid being radio-opaque, can be visualized under X-ray

screening condition^{1,12}. In evaluating, HSG assessment of tubal patency using laparoscopy as the gold standard showed sensitivity of 65% and specificity of 83%¹. When tubal occlusion is in the proximal or interstitial portion of tube at HSG, tubal spasm should be considered¹³. Bilateral tubal occlusion is usually indication of anatomic pathology. Unilateral proximal tubal occlusion is frequently transient due to spasm of utero-ostium or plugging by mucous or air bubbles. Unilateral tubal occlusion found 10% to 24%¹⁴.

MATERIAL AND METHODS

This descriptive study was carried out in the Department of Obstetrics & Gynecology, Nishtar Hospital Multan from September 2013 to March 2014. Two hundred and seventeen women with primary or secondary infertility from gynecological outpatient department fulfilling inclusion criteria were selected.

RESULTS

Among 217 patients, majority of the patients i.e., 61.3% was nullipara. 26.7% were P1, 8.7% were P2 and 3.3% were having parity =P3. Among 217 patients of subfertility, majority of patients i.e. 61.3% were having primary subfertility. Secondary subfertility was reported in 38.7% of cases. Frequency of tubal spasm during hysterosalpingography was 13.4%. Among 217 patients, majority of the patients (33.6%) was in age group 26-30 years (Table 1). Out of 217 subfertile patients, majority of patients i.e. 51.2% were illiterate (Table 2). Among 217 patients, most of the patients

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i.e. 61.3% were belonging to poor socioeconomic class (Table 3).

Table 1: Age wise distribution of patients (n = 217)

Age (years)	n	%age
19-25	61	28.1
26-30	73	33.6
31-35	66	30.4
36-40	17	7.8

Table 2: Educational status of the patients (n = 217)

Income	n	%age
Illiterate	111	51.1
Primary	47	21.6
Middle	35	16.1
High	24	11.9

Table-3 : Socioeconomic status of the patients (n = 217)

Status	n	%age
*Poor	133	61.3
**Middle	69	31.8
***Rich	15	16.1

* Monthly income <5000.

**Monthly income Rs.10000-30000.

***Monthly income >30000.

Table 4: Stratification according to age and parity (n=217)

Age (years)	Tubal spasm		P-value
	Yes	No	
19-25	08	53	Chi square 0.0521 df 3 P.value 0.9968
26-30	10	63	
31-35	09	57	
36-40	02	15	
Parity			
Nullipara	18	115	Chi square 0.1498 df 3 P.value 0.9852
P1	08	50	
P2	02	17	
P3	01	06	

Table 5: Stratification according to educational level & socioeconomic status (n=217)

Education level	Tubal spasm		P-value
	Yes	No	
Illiterate	15	96	Chi square 0.0578 df 3 P.value 0.9963
Primary	06	41	
Middle	05	30	
High	03	21	
Socio-economic status			
Poor	18	115	Chi square 0.0094 df 2 P.value 0.9972
Middle	09	60	
Rich	02	13	

DISCUSSION

To procreate is a natural instinct. It gives meanings to ones life as an individual and as a couple. If a couple is not able to reproduce, it gets socially and psychologically disturbed. Infertility is commonly

defined as the failure of conception after at least 12 months of unprotected intercourse¹⁵.

Hysterosalpingography (HSG) involves catheterization of the cervix to yield a watertight seal and injection of a contrast material under pressure in order to follow its flow path by obtaining radiographic images of the process. In this manner, one is able to appreciate morphology of the uterine cavity, lumina of the Fallopian tubes and, finally, tubal patency by visualizing peritoneal spillage of the contrast material¹⁶.

Many authors have questioned the validity of HSG, as rather wide ranges of negative and positive predictive values have been reported in the literature. Whereas reported negative predictive values range from 57.1% to 92%, positive predictive values range from 30.8% to 84.5%¹⁷.

The results generated by the present study are in line with the results of another International study, in which majority of the patients were in age group 26-30 years i.e. 41.1% and the least number of patients were in age group more than 35 years¹⁸. The ages of the patients recruited in another study ranged from 20-40 years (mean 29.5 years)¹⁹.

Analysis of parity distribution showed that majority of the patients in the study under consideration i.e. 61.3% was nullipara. 26.7% were P1, 8.7% were P2 and 3.2% were having parity =P3. Out of 217 subfertile patients, majority of patients i.e. 51.1% were illiterate. 21.6% were having their education up to primary, 16.1% up to middle and 11.1% of patients were having their education up to high class. Among 217 patients, most of the patients i.e. 61.3% were belonging to poor socioeconomic class. 31.8% were in middle class group and 6.9% of patients were belonging to rich class.

Among 217 patients of subfertility, majority of patients i.e. 61.3% were having primary subfertility. Secondary subfertility was reported in 38.7% of cases. The results revealed by our study are corresponding with the results of an International study in which, Primary infertility was the main reason for assessing tubal function. Several studies showed that secondary infertility is more common than primary infertility²⁰ but studies done in Turkey and Iran found out that primary infertility was more common, when compared to secondary infertility²¹.

Women with secondary infertility have a higher likelihood of having structural abnormalities in both uterus and fallopian tubes in comparison to those with primary infertility²². However this differs from other studies where it was found that primary infertility is commoner²³. Earlier researchers also obtained higher rates of secondary infertility comparable to the results of this study²⁴. It is also important to be aware of the fact that tubal spasm

may mimic tubal occlusion and result in false-positive diagnosis of tubal occlusion²⁵.

Historically, administration of glucagon and selective tubal catheterization have been performed in an attempt to combat proximal tubal occlusion. However, increased cost and technical complexity have caused these methods to become less popular²⁶.

CONCLUSION

HSG is an important diagnostic test in the evaluation of intrauterine abnormalities and tubal patency in the infertility workup of female patients as spasms has been suggested.

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