

Influence of Induced Abortion on Tubal Findings in Hysterosalpingography among Women with Infertility in Calabar, Nigeria

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Abstract

Background: Induced abortion is a major cause of infertility in our environment with post-abortal complications commonly occurring especially when done by untrained medical personnel and in unsafe environments. Complications affect fallopian tubes hence contributing immensely to tubal causes of infertility in our environment where induced abortion is illegal. Imaging plays a very important role in the assessment of tubal factors as a possible cause of infertility hence the choice of Hysterosalpingography as a vital initial tool in the diagnostic evaluation of these patients.

Objective: To determine the relationship of induced abortions and Hysterosalpingography tubal findings in management of females with infertility.

Materials and Methods: A cross-sectional descriptive study of 87 HSG's of women being managed for infertility in a private specialist hospital over a 2 year period from November 2015 to October 2017.

Results: The overall mean age of respondents was 34.09 ± 4.82 years. Most of the respondents were between 30-39 years (60.9%), nulliparous 70 (80.5%) and 71 (81.6%) had a previous history of induced abortion. Although the tubal findings were mostly normal (35.6%), the commonest abnormal findings were tubal blockage and hydrosalpinx (50.6%). The abnormal tubal findings were significantly associated with a past history of more than one induced abortion and null parity ($p < 0.05$). Hydrosalpinx (86.4%) was commonly linked with a previous history of induced abortion although the difference was not statistically significant ($p \geq 0.05$).

Conclusion: In the management of infertility, abnormal tubal findings in Hysterosalpingogram are commoner among women with a past history of induced abortion with however no statistically significant relationship with the number of induced abortions.

Keywords: Infertility; Induced abortions; HSG (Hysterosalpingogram)

Abbreviations: HSG: Hysterosalpingogram; PID: Pelvic Inflammatory Disease; TOP: termination of Pregnancy; STI: Sexually Transmitted Infection

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Introduction

In Nigeria there is a high incidence of unplanned pregnancies as a result of increased sexual activities and low contraceptive usage [1,2]. Securing abortion is illegal in Nigeria in spite of the high incidence of unplanned pregnancies. These unplanned pregnancies are clandestinely terminated by untrained medical and non-medical personnel in unsafe environment, with resultant post-abort complications especially infection.

Patients who survive these complications are often seen in general out-patient and gynaecological clinics with history of secondary infertility, which is inability of a woman to bear a child either due to inability to become pregnant or inability to carry a pregnancy to a live birth following either a previous pregnancy or previous ability to carry pregnancy to a live birth [3,4].

In countries where induced abortion is legalized, the prevalence of secondary infertility is 15% in developed countries and about 20% in African couples, with an increasing prevalence of 45% reported in Nigeria where abortion is not legalized [5]. A study by Akinola, et al. reported a high prevalence of induced abortions of up to 84% in Nigeria which could lead to post-abort infections of various grades; some of which may affect the fallopian tubes resulting in tubal causes of secondary infertility [4,6,7].

Besides other methods of assessing tubal status, Hysterosalpingogram (HSG) remains an effective method of assessing tubal factors due to its high sensitivity and specificity [8-10]. This study aim to assess the effect of induced abortions on the fallopian tubes using among female clients with secondary infertility in Calabar, Nigeria.

Materials and Methods

The study is a descriptive cross-sectional study carried out in the radiology unit of a private specialist hospital in the urban area of Calabar. It was conducted over a two-year period from November 2015 to October 2017 amongst patients referred from the Gynaecology unit (fertility clinic) of the private specialist hospital. The protocol was reviewed and approved by the research and ethics committee of the specialist hospital. Each participant signed an informed consent form in which the study was clearly described and the form emphasized confidentiality of all information.

All participants filled a self-administered questionnaire containing sections with questions on socio-demographics, reproductive history including a history of induced abortion and where it was done and by whom, symptoms related to pelvic inflammatory disease including a history of vaginal discharge, fever or painful sexual intercourse. Hysterosalpingogram was done using an aseptic technique after an informed written consent. The results obtained were analysed using SPSS version 20 and results were taken to be significant at p-value <0.05.

Results

Information and findings received from eighty-seven participants were analysed. In table one the overall mean age of respondents was 34.09 ± 4.82 years with age range of 25-45 years. Eighty-one point six percent (81.6%) of patients had one, two or three abortions as shown in Table 2. The tubal findings on HSG are presented in Figure 1 below. More of the respondents (35.6%) had normal HSG findings while a quarter of the respondents presented with either tubal blockage or hydrosalpinx. Few respondents (13.8%) presented with a combination of tubal blockade and hydrosalpinx.

The association between gynaecological profile and HSG findings as presented in Table 3, revealed that a significantly higher proportion of nulliparous women (Para 0) 56 (80%) were more likely to have abnormal HSG findings compared with women who had at least one child. Also, a significantly higher proportion of respondents who had performed more than one TOP were significantly more likely to have abnormal HSG findings compared to respondents who did at least one TOP. Other variables such as age, history of PID and infertility type were not associated with abnormal HSG results ($P>0.05$).

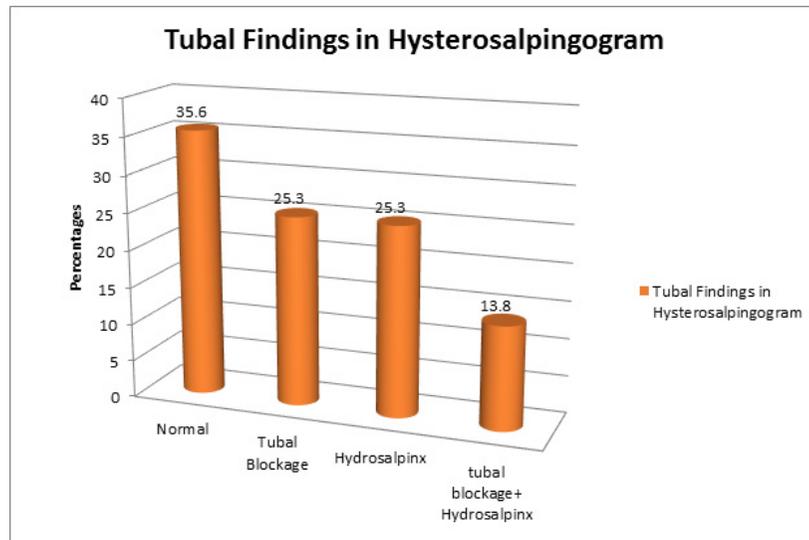


Figure 1: Percentage of tubal findings in HSG among study population.

Variable	HSG findings				Chi-square	p-value
	Normal Freq. (%)	Tubal Blockage Freq. (%)	Hydrosalpinx Freq. (%)	Blockage + Hydrosalpinx Freq. (%)		
Induced Abortion						
Yes	25 (80.6)	18 (81.8%)	19 (86.4%)	9 (75.0%)		
No	6 (19.4%)	4 (18.2%)	3 (13.6%)	3 (25.0%)	0.70	0.891

Table 1: Association between Gynaecological profile and HSG findings.

Variable	Frequency N (87)	Percentage
Age(Years)		
20-29	18	20.7
30-39	53	60.9
Parity		
0	70	80.5
1	17	19.5
Induced abortion		
One induced abortion	46	52.9
Two induced abortion	15	17.2
Three induced abortion	10	11.5
None	16	18.4
Previous history of PID		
No	52	59.8

Yes	35	40.2
Type of infertility		
Primary	14	16.1
Secondary	73	83.9

Table 2: Socio-demographic/Gynaecological profile of respondents.

Variable	Tubal findings in HSG		Chi-square	p-value
	Normal Frequency (%)	Abnormal Frequency (%)		
Termination of Pregnancy				
≤ 1TOP	26(41.9)	36(58.1)		
>1 TOP	5(20.0)	20(80.0)	3.74	0.053
Age (years)				
≤34	20(41.7)	28(58.3)		
>34	11(28.2)	28(71.8)	1.70	0.192
Parity				
0	14(20)	56(80)	FET	<0.001
1	17(100)	0(0.0)		
PID				
No	19(36.5)	33(63.5)		
Yes	12(34.3)	23(65.7)	0.046	0.830
Type of infertility				
Primary	6(42.9)	8(57.1)		
Secondary	25(34.2)	48(65.8)	0.380	0.538

Table 3: Relationship between induced abortions and Hysterosalpingography findings.

More respondents who had performed an induced abortion in the past were more likely to present with hydrosalpinx 19 (86.4%) followed by tubal blockage 18(81.1%). The difference however was not statistically significant ($p > 0.05$), as illustrated in Table 3.

Discussions

Hysterosalpingography (HSG) remains an essential part in the management of infertile couple and its value cannot be underestimated in modern gynaecological practice despite emergent of laparoscopy and dye test in low and middle income countries [8]. Infertility has immense physical and emotional stress on the couple especially the female partner, who are often erroneously accused as the cause of the problem. Some factors in women are known risk factors and causes of infertility, one of these factors is pelvic infection following induced abortion. Majority of patients (60.9%) were between 30-39 years however abnormal tubal findings were found in 71.8% of the patient above 34 years. This probably explains the high rate of infertility seen in this age group. This finding is similar to what Bukar, *et al.* found in their study [11].

In this study, the incidence of secondary infertility was higher than that of primary infertility with a ratio of 5.2:1. This is similar to the findings of others in the sub-region [11-13]. The high rate of secondary infertility and the fact that there was a high rate of tubal related abnormalities (about 60%) could be secondary to post abortion sepsis, puerperal sepsis and/or sexually transmitted infections (STIs). It is worthy to note that in this study 71.1% had only one induced abortion, and this may be attributed to the fact that majority of them had the induced abortion done by unskilled personnel and in very unsafe environment.

In this study the relationship between induced abortions and tubal findings showed borderline significance ($p = 0.058$). This finding is similar to findings of Torres-Sanchez, *et al.* study in Mexico where on the contrary, induced abortion is legal and hence is done by trained medical personnel in a sterile environment and post procedure antibiotics are given empirically [14]. There will therefore be other likely factors contributing to tubal findings outside the healthcare provider and infection.

Limitations of the study might include absence of long-term follow-up of cases; especially Hegazy suggested that HSG itself might disturb the internal environment of the Fallopian tubes with increased incidence of ectopic pregnancy or even unexplained infertility [15]. The religious associated stigmatization and legality of induced abortion likely affected population of respondents and the number of induced abortions reported.

Conclusions

This study shows that the degree of tubal damage that causes secondary infertility does not correlate with the number of induced abortions. This situation can be avoided if abortion is legalized and performed in safe environment by trained medical personnel. Further prevention can be achieved if contraceptive use can be increased among the sexually active women in order to reduce the incidence of unplanned pregnancy.

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