HYSTEROSALPINGOGRAPHY FINDINGS IN WOMEN WITH INFERTILITY

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ABSTRACT

BACKGROUND: Hysterosalpingography (HSG) is a specialized radiological investigation that employs the use of contrast agent to outline the uterus and fallopian tubes, it is an important tool in the evaluation of infertility which is a major clinico-social issue among women in Nigeria.

OBJECTIVE: To determine the pattern of HSG findings among women with clinical diagnosis of infertility in Abubakar Tafawa Balewa University Teaching Hospital Bauchi, North Eastern Nigeria.

MATERIALS AND METHODS: The case files and records of 640 patients were reviewed retrospectively between January 2015 and October 2016 at Abubakar Tafawa Balewa University Teaching Hospital Bauchi, North Eastern Nigeria. The data were analyzed using SPSS Version 21.0 Chicago.

RESULTS: The commonest age group affected were between the ages of 25 years and 34 years 55.47% (n=355) with peak range at 25-29 years 28.75 % (n=184). 20 patients (3.13%) were <20 years. There is higher percentage of secondary than primary infertility in the study population. Result showed 35.78% (n=229) of women with primary infertility, while 33.59% (n=215) were with secondary infertility, only 2 patients (0.29%) had cervical incompetence. Fallopian tube abnormality was the commonest problem (n=193)27.8% followed by Uterine abnormality (n=117)16.1%, peritoneal adhesion (n=43)6.21% and cervical synechiae/fibroid (n=17) 2.6% respectively

CONCLUSION: Majority of women who present for Hysterosalpingography had secondary infertility and fallopian tube abnormalities were the major findings. HSG is still an invaluable tool in evaluation of infertility.

KEY WORDS: Hysterosalpingography, Infertility, Women, Contrast agent, Nigeria

INTRODUCTION

Hysterosalpingography is considered as gold standard for radiographic assessment of fallopian tubes giving relevant information and vital clues about patency and morphology[3,6,7]. Other imaging modalities for assessing tubal patency includes Hysterosalpingo contrast sonography (HyCoSy) and Magnetic Resonance Imaging.[12]

Infertility is a major clinico-social issue in Nigeria and its definition varies considerably[4]. It is however, often defined as the inability of couples to achieve pregnancy within a period of usually not less than a year of adequate unprotected coitus[5]. Infertility is common worldwide, it has been estimated that about one in every ten couples has difficulty in conceiving[10,12].

Infertility could either be primary or secondary. The World Health Organization (WHO) defines primary infertility as the inability of a couple to conceive within two years of exposure to the risk of pregnancy (that is sexually active, non-lactating and non-contracepting). Secondary infertility on the other hand is simply defined by the National Institute for Clinical Excellence (NICE) as the inability to conceive after a previous pregnancy[10]. Irrespective of the infertility type, the effect which plagues about 48.5 million couples around the world is very great especially in some African and Asian countries[11].Imaging plays a vital role in the work up for infertility[6]

Previous studies have shown that tubal factor infertility is the commonest cause of infertility in Nigeria and HSG is the main imaging examination for evaluation of the fallopian tubes[13,20] There is however, no study evaluating the nature and findings of the study in Bauchi. Hence, the need for justification of this study in Bauchi. This study is aimed at determining the pattern of HSG findings among women with clinical diagnosis of infertility in Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, North East Nigeria.

MATERIALS AND METHODS

The study was a retrospective study carried out at the Radiology Department of Abubakar Tafawa Balewa University Teaching Hospital Bauchi as from January 2014 to October 2015. A total of six hundred and forty (640) studies of women between ages 16 to 45 years were referred to the department. Ethical approval was obtained before the review from the hospital ethical committee, information such as parity, type of infertility, duration of infertility, clinical indications, age of patients and findings were extracted from the records of patients. Descriptive analysis like frequencies and graphs were the basis for drawing conclusions. The data were analyzed using SPSS version 21.0.

RESULTS

Table I: Shows the Age Distribution of Patients (n=640)

Age Group	No of Patients	Percentage %
<20	20	3.13
20-24	111	17.34
25-29	184	28.75
30-34	171	26.72
35-39	118	18.44
40-45	36	5.63
Total	640	100

The commonest age group affected were between the ages of 25 -29 years (n= 184) 28.75% and 30-34 years 26.72% (n=171) with mean age between 30-34 years 28.75 % (n=184). 20 patients (3.13%) were below 20

Table II: This Table shows Clinical Indications requiring HSG Investigations

Clinical Indication	Frequency	Percentage %
Primary Infertility	215	33.59
Secondary Infertility	329	51.41
Abortion	13	2.03
Primary Amenorrhea	8	1.25
Secondary Amenorrhea	16	2.50
Asher man's Syndrome	23	3,60
Uterine Fibroid	32	5.00
Cervical Incompetence	4	0.63
Total	640	100

Table II above presents higher percentage of secondary and primary infertility, which shows 33.59% (n=215) of women with primary infertility, while 51.41% (n=329) were with secondary infertility. 4 indications of patients (0.63%) with cervical incompetence.

Table III: Distribution of Findings from HSG Reports

Findings	Number of Cases	Percentage %
1) Normal	**322**	**46.53**
2) Cervical		
a) Fibroid	2	0.29
b) Synechiae	15	2.17
Total	**17**	**2.46**
3) Uterus		
a) Synechiae	54	7.80
b) Fibroid	62	8.96
c) Congenital anomaly	1	0.14
Total	**117**	**16.1**
4) Fallopian Tubes		
a) Tubal Occlusion		
i) Right	40	5.78
ii) Left	47	6.79
iii)Bilateral	65	9.39
b) Hydrosalpinx		
i) Right	10	1.44
ii) Left	15	2.16
iii)Bilateral	16	2.31
Total	**193**	**27.88**
5) Peritoneal Adhesions	**43**	**6.21**
TOTAL	**692**	**100**

Table III illustrates the HSG reports of 640 patients with a total of 692 findings. The findings were categorised into normal, cervical, uterine, tubal and peritoneal adhesions as presented. 46.53%(n=322) showed normal findings. The major findings were those of tubal factor (fallopian tubes); tubal occlusion categorised into unilateral and bilateral. Right tubal occlusion presented 5.78% (n=40), left tubal occlusion 6.79% (n=47) and bilateral showed 9.39(n=65). Hydrosalpinges were categorised into unilateral and bilateral. Right hydrosalpinx showed 1.44% (n=10), left showed 2.16 (n=15) and bilateral 2.13% (n=16). Total fallopian tubes findings were 27.88% (n=193). Other major problems diagnosed were uterine Synechiae 7.80% (n=54), uterine fibroid had 8.96%(n=62). There was one (n=1) 0.14% case of congenital anomaly. Total uterine findings accounted for 16.1% (n=117). Peritoneal adhesion presented 6.21% (n=43). Cervix: cervical incompetence and cervical fibroids had 0.29% (n=2) while cervical synaechia had 1.88%(n=13). The total cervical findings were 2.46% (n=17).

DISCUSSION

The age distribution of patients were between 16 and 45 years. 25 - 29 years group had the highest number of patients and closely followed by those between 30-34 years of age. In the African setting most especially Nigeria, women marry early. Previous studies had earlier collaborated this finding in the South West and North Eastern part of Nigeria [14,20]. The minimum ages of women referred for HSG were 15 years and 25 years which may not be unconnected with the socio-cultural, religious, tribal and ethnic beliefs which tends to affect the age of marriage of women in different parts of the country[14,23]. 46.5 %(n=322) of women in this study had normal findings. This is in keeping with the findings of Botwel et al., indicating that the cause of their inability to conceive could be attributed in part to their male counterparts [16]. These findings are higher when compared to those recorded in Uganda 16.6% (17) Nigeria 24.4% (14) and Ethiopia 36% (18) respectively. It is however, lesser than 55% reported in Switzerland [19].

Secondary infertility was the main clinical indication for HSG in this review. Similar studies had earlier reported a preponderance of cases of secondary infertility among women in sub-Saharan Africa [24, 25]. Tubal pathology (n=193) 27.8% was the major HSG finding among infertile women in this study. Right tubal occlusion accounted for (n=40) 5.78% whereas left tubal occlusion was (n=47) 6.79%, (n =65) 9.39% for bilateral respectively. Bilateral tubal occlusion was the commonest finding in this study which is similar to the study done in Nigerian sub-region and beyond[14,15,21]. This is however lower than most studies reported[20,21]. There was (n=10) 1.44% right hydrosalpinx, (n=15) 2.16% left hydrosalpinx and (n=16) 2.3% bilateral respectively.

Cervical synaechia (n=13) 1.8% was the highest findings in the cervix. The high incidence of cervical synaechia may be due to postpartum endometritis or overzealous curettage of a recently pregnant uterus. The wide spread of manual vacuum aspiration and dilatation and curettage for evacuation of retained products of conception may account for that in our environment in our environment. It is vital to note that some of the clinical indications and request in this study have multiple findings. In summary fallopian tube factors is the commonest clinical problem followed by the uterine then peritoneal adhesions and then cervical fibriod/synechiae.

Uterine fibroids (n=62) 8.96% was the commonest uterine findings closely followed by uterine synechiae (n=54) 7.80%. This concurs with the study in Enugu[20].

Peritubal adhesions accounted for 6.21% (n= 43) which agrees with a work conducted in Nigeria with pelvic adhesion 8.19% (n= 23) and perifimbrial adhesion 11.3% (n=32)[1].

Conclusion: Majority of women who present for Hysterosalpingography had secondary infertility and fallopian tube abnormalities were the major findings. Hysterosalpingography is still an invaluable tool in evaluation of infertility.

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