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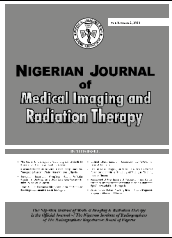

A SPECTRUM OF HYSTEROSALPINGOGRAPHY FINDINGS IN A SELECTED NIGERIAN POPULATION : ANY JUSTIFICATION FOR CONTINUED USE?

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ABSTRACT

Background: In Nigeria, tubal occlusion is a frequent cause of infertility and the evaluation of patency and integrity of the tube remains a major step in its evaluation. Despite the availability of other imaging modalities, Hysterosalpingography (HSG) continues to play an important role in the diagnostic work-up for the infertile woman.
Our study highlights the spectrum of findings from HSG studies conducted on 1246 patients.
[5]

Objective: The study seeks to identify common pathological findings as demonstrated on HSG studies and establish a justification for its continued utilization as a screening in our environment.

Methodology: A cross-sectional purposive and non-probability sampling method was used. A total of 1246 women referred for HSG study were evaluated. The referral forms of all the subjects were scrutinized for age and clinical history and the corresponding radiographic films and reports were assessed for normality or otherwise. All reports were documented by qualified radiologists. No age exclusion was applied. Data analysis was performed with SPSS statistical tool version 21.0.

Results: Secondary infertility was the most common indication, representing 62.0% (780) while primary infertility accounted for 32% (398).
The mean age of all the women is 35.2years. Normal HSG findings were noted in 264 (21%) subjects. Specific analysis of tubal pathologies showed left tubal blockage 135 (10.8%), right tubal blockage 51 (4.09%) and bilateral tubal blockage 156 (12.5%)
Hydrosalpanx was identified in 173 (13.9%), Asherman disease in 97 (7.8%) and uterine anomalies in 24 (1.9%) and uterine fibroids in 203 (16.3%) of all cases.
The multiplicity of abnormal findings among women who underwent HSG in our study and the relatively lower number of normal cases compared to previous studies justify the continued use of this simple, and relatively available technique.

Conclusion: The significant diagnostic yield of HSG in our environment is encouraging and justifies its continued use in the routine work-up of patients with infertility

INTRODUCTION

Hysterosalpingography (HSG) is considered a baseline study for the evaluation of tubal causes of infertility **[1]**. Although some other procedures such as ultrasound, Magnetic Resonance Imaging (MRI) and laparoscopy can provide information on uterine pathologies, HSG remains an important diagnostic work-up for the infertile woman. This may be due to its safety, low cost, simplicity and availability. [2][3]

Infertility is often considered, when a couple fails to achieve pregnancy after a year of unprotected sex. [4]. Although several causes of infertility are known in medical history, pelvic inflammatory disease (PID) is a major culprit in our environment and Sub-Saharan Africa. Accordingly, post-inflammatory complications such as pelvic/tubal adhesions are common, thus necessitating radiological assessment of the uterine tubes [4].

Anecdotal evidence suggests that the desire to have children is a major social decision and infertile couples would readily seek solutions. In Nigeria, tubal occlusion is a frequent cause of infertility and the evaluation of patency and integrity of the tube remains a major step in the evaluation of infertility [4][5][6][7]. Sono-HSG has also been reported as a method of evaluating tubal patency, but the subjectivity on visualization of peritoneal spill makes it unreliable [4]. Due to rising cases of PID, tubal evaluation will continue to be performed as part of diagnostic work up of infertility. This study will identify, if the spectrum of abnormal findings identified during HSG, will justify the continued use of HSG for tubal evaluation in our environment.

METHODOLOGY

This study is cross-sectional purposive and non-probability sampling method was used.

Both retrospective and prospective cases were used. All subjects are women who were referred for HSG for evaluation of infertility and other pathologies.

A total of 1246 women were evaluated. The referral forms of all the subjects were scrutinized for age and clinical history. The corresponding radiographic films and reports were assessed for normality or otherwise. All reports were documented by qualified radiologists. No age exclusion was applied. Data collection included age of subject, radiological finding(s). Data analysis was performed with SPSS statistical tool.

RESULTS

The radiographic findings were analysed and presented in tables 1 and 2.

A total of 1246 patients were evaluated. Secondary infertility was the most common indication for HSG representing 62.0% (780) while primary infertility accounted for 32% (398). The predominance of secondary infertility is in agreement with previous studies conducted by Danfulani *et al* (2014) [8] which has 54.9% and Aziz *et al* (2015)[9] with 51.3% for women with secondary infertility.

Our study is at variance with those of Udobi and Aronu (2019)[10], which showed that primary infertility was more common (56.1%). Analysis of the ages of the subjects showed a mean age of about 35.2years.

Normal HSG findings were noted in 264 (21%) subjects. This is much lower than those obtained by Omidiji *et al* (2019)[11]. Tubal pathologies accounted for over 41.3% of all abnormal findings. Specific analysis of tubal pathologies showed left tubal blockage 135 (10.8%), right tubal blockage 51 (4.09%) and bilateral tubal blockage 156 (12.5%)

Hydrosalpinx was identified in 173 subjects representing (13.9%), Asherman's syndrome in 97 subjects (7.8%) and uterine anomalies in 24 cases(1.9%) of all cases.

Another major finding was uterine fibroids which was identified in 203 subjects (16.3%).

TABLES

Table 1: Age distribution of subjects

AGE RANGE(YR)	No. OF CASES			PERCENTAGE (%)
	PRIMARY INFERTILITY	SECONDARY INFERTILITY	OTHER INDICATIONS	
20-24	31	33	2	66
25-29	102	116	14	232
30-34	114	146	29	289
35-39	72	201	15	288
40-44	51	187	6	244
45-49	28	97	2	127
Total	398	780	68	1246

Table 2: Findings with age cross tabulation

FINDINGS	AGE						
	20-24	25-29	30-34	35-39	40-44	45-49	Total (%)
NORMAL	34	56	82	46	32	14	264
RIGHT TUBAL BLOCKAGE(RTB)	2	9	17	11	9	3	51
LEFT TUBAL BLOCKAGE(LTB)	4	31	22	31	29	18	135
BILATERAL TUBAL BLOCKAGE(BTB)	2	32	29	45	31	17	156
RIGHT HYDROSALPINX	2	22	34	15	12	2	87
LEFT HYDROSALPINX	1	12	24	12	23	14	86
UTERINE FIBROID(F)	1	2	4	12	16	11	46
SIN	0	0	2	0	1	0	3
ASHERMAN'S(A)	6	11	17	28	22	13	97
LOCULATED SPILL(L)	0	2	2	3	6	1	14
UTERINE ANOMALY	3	2	3	5	4	7	24
RTB+F	3	17	14	18	15	8	75
LTB+F	2	12	12	16	6	5	53
BTB+F	0	4	3	12	6	4	29
RTB+L	0	2	1	7	5	1	16
LTB+L	1	0	2	7	2	3	15
A+RTB	2	6	11	9	16	2	46
A+LTB	3	12	10	11	9	4	49
Total	66	232	289	288	244	127	1246

RTB= Right Tubal Blockage , LTB= Left Tubal Blockage BTB Billateral Tubal Blockage A= Asherman's Syndrome, SIN= Salpingitis Isthmica nodosa

DISCUSSION

The desire to have children by a couple has social, and emotional dimensions and infertility remains a burden particularly in sub-Saharan Africa.[11] Anecdotally, the utilization of a simple readily available and cheap method of evaluation such as HSG provides succour to such couples.

The main use of HSG is in the evaluation of tubal factors assessment of integrity of the uterine cavity and cervix [11] as well as depicting endometrial adhesions [13]. Some studies canvass a therapeutic role of HSG by concomitant flushing of the fallopian tubes during contrast injection [14].

Other modalities such as ultrasound, MRI, laparoscopy and Sono-HSG are considered complementary in the evaluation of infertility [4]

In Nigeria, several studies have indicated that tubal occlusion is a major cause of infertility and that HSG will continue to play a key role in evaluating the patency of the fallopian tubes [5][6][7]

There are however demographic differences in the spectrum of HSG findings as well as mean age of infertility, hence justifying the present study.

The mean age of subjects in our study is 35.2years and compares well with those of Omidiji eta al (2019) (33.9±5.4years) conducted in the South-Western Nigeria and at disparity with those of Danfulani et al (2014) with 32.5 ± 5.5years.

The last study by Danfulani et al, also showed that majority of subjects were within the age range of 21-30years, compared to our study with predominance of 30-39years.

The higher age at presentation in our study can be explained by socio-cultural differences in the timing of marriage between the Northern and Southern parts of Nigeria.

The prevalence of tubal occlusion as a common cause of infertility has received attention of Nigerian authors (Omidiji et al) [11] and our study reinforced this assertion, as it agrees with all the previous studies reviewed in our environment. [5] [6] [7] [11]

Hydrosalpinx was seen in 13.9% (173) and Asherman's disease in 7.8% (97) cases.

Fewer percentage of women 264 (21%) evaluated in our study had normal HSG findings, when compared to those of Omidiji [11] in Lagos (South-West) and Danfulani in Sokoto (North-west) Nigeria.[8] The small percentage of normal findings indicate a high sensitivity of the HSG as a

screening tool for infertitlity.
About 283 (22.7%) of cases presented with multiple pathologies. The studies by Omidiji et al showed 16% multiplicity of lesions.
Your discussion should be coherent and in details. It should compare, agree or dis-agree with other related articles. It must have implications and applications for every discussion from point to point.

CONCLUSION

The multiplicity of abnormal findings among women who underwent HSG in our study further emphasizes the importance of this procedure in evaluation of infertility. The relatively lower number of normal cases compared to previous studies justify the continued use of the simple technique.
The significant diagnostic yield of HSG in our environment is encouraging in the routine work-up of patients with infertility.

Conflict of interest: Nil

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