



Hysterosalpingography: Still relevant in the evaluation of infertility in the Niger Delta

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ABSTRACT

Background: Hysterosalpingogram is an important tool in the management of female infertility. It outlines the fallopian tubes and uterine cavity. **Aim:** To review the hysterosalpingographic (HSG) findings in women investigated for infertility in a tertiary care center in the Niger Delta. **Methods:** The study reviewed 137 consecutive HSG films of women investigated for infertility between 1st January to 30th May, 2014. **Result:** The commonest age group was 26-30yrs (46.7%). Majority of the women were investigated for secondary infertility 98 (71.5%). Abnormal findings were found in 99(72.3%) and the commonest abnormality was tubal 67(48.9%) with bilateral tubal blockage in 20 (14.6%). Other findings include submucous fibroids in 28 (20.4%), uterine synechia 26(19.0%) and bi-cornuate uterus in 1(0.7%). **Conclusion:** HSG is relevant in the investigation of infertile women. Bilateral tubal occlusion from pelvic inflammatory disease, puerperal sepsis and unsafe abortions remains a major challenge in the Niger delta.

Key words: Hysterosalpingography, infertility, fallopian tube, patency, laparoscopy, endometrium

INTRODUCTION

Infertility is a global and a public health concern in many parts of sub-Saharan Africa.^[1] This is not only because of its high prevalence but also due to the important socio-cultural effect of the condition on affected couples and families.^[1] It accounts for up to 50%-65% of all gynaecological consultations.^[1] Mechanical factors are responsible for approximately 30% of

female infertility and various methods such as transvaginal ultrasonography, hysterosalpingography (HSG), hysteroscopy and laparoscopy have been used to investigate these factors.^[2]

The hysterosalpingogram is a useful tool in the management of women who present with infertility and has the advantage of outlining the uterine cavity in addition to the fallopian tubes unlike laparoscopy which is unable to show the uterine cavity and is not readily available in our



environment. The hysterosalpingogram has been described as being superior to laparoscopy in demonstrating tubal patency; it is less invasive and enhance fertility in select situations.^[3,4]

HSG is a safe, simple procedure that enables the lumina of the uterine cavity and fallopian tubes to be outlined.^[3,4] Despite its low sensitivity, the high specificity of hysterosalpingography makes it very helpful for ruling out tubal disease, even where endoscopic evaluation is available.^[5,6] Even though laparoscopy is considered as the reference standard in infertility workup, HSG can be performed first and the use of laparoscopy should be limited to cases suspected for etiologies other than intratubal, such as endometriosis and peritubal adhesions.^[4,5,6]

HSG is however not without its limitations, because it exposes the patient to the risk of ionizing radiation, in addition to the risk of pelvic infection and does not show the external contour of the uterus, which is essential for differentiating uterine anomalies.^[6] Three dimensional transvaginal ultrasound is a non - invasive and quick, imaging method that may be used in diagnosing uterine anomalies. This method allows evaluate the external contours of the uterus, making it comparable to MRI.^[7,8,9]

In view of the facts that diagnostic algorithms for evaluation of infertility are diverse; including the use of three dimensional transvaginal ultrasound (3D TV USG), laparoscopy and even magnetic resonance imaging (MRI) which are expensive and not readily available in a poor resource setting like ours, it is imperative to undergo this study to generate local data, contribute to the global discourse on the role of HSG in the evaluation of infertility and invariably, improve reproductive health care in this centre and society, at large.

METHODOLOGY

The study was a retrospective multi-centre study conducted at the Niger Delta University Teaching Hospital, Okolobiri, Yenagoa, Bayelsa State, Nigeria and Silhouette Radiological Centre, Yenagoa, between the 1st January and 30th May 2014. Demographic and clinical data were obtained from patients' records and case notes.

The HSGs were performed in the proliferative phase of the menstrual cycle. Patient placed in supine position and control radiograph of the pelvis was done to assess patient positioning and radiographic factors. Water-soluble contrast media was introduced using a cannula placed in the cervical canal under aseptic conditions.^[6,7] Films were taken with the patient in the supine position, antero-posterior projection and oblique views were done when necessary. 15mls of contrast medium were administered for each patient and in some cases of uterine fibroids, up to ml 50ml of contrast was used.^[6,7]

All patients with poorly filled request form and those with contrast intravasation were excluded from the study. The radiographic findings were reported by two radiologists independently and all conflicting reports were removed from the study.

Approval for this work was given by the Ethical Committees of the centres.

Statistical analysis

The obtained data were coded and transferred onto an already designed proforma. Statistical analysis was performed with Statistical Package for Social Sciences (SPSS version 10) where nominal data were compared using the chi square test (χ^2) and the difference between means determined by the students t-test with the level of significance set $\alpha = 0.05$.

RESULTS

One hundred and thirty seven (137) HSGs were reviewed. The commonest age group seen was 26-30 yrs 64(46.7%). Majority were nulliparous 104 (75.9%) with secondary infertility 98(71.5%). 38 (27.75%) were classified as normal studies. 38(27.75%) had tubal problems only, 29 (21.17%) had a problem involving only the uterine cavity, 31 (22.63%) had problems in both the uterine and the fallopian tubes and 1(0.01%) was a congenital anomaly, a bi-cornuate uterus.

DISCUSSION

The age distribution of our cases ranged from 18 to 47 years, with 26-30 yrs being the commonest age group, this finding reaffirms the age distribution pattern in other institutions from Nigeria and elsewhere.^[2,10]

Table1: Socio-demographic characteristics of the patients

Parameters	Number(N=137)	Percentage
Age (years)		
≤19	07	5.1
20-25	32	23.4
26-30	64	46.7
31-35	23	16.8
≥40	11	8.0
Parity		
0	104	75.9
1	24	17.5
2	09	6.6
Educational status		
Nil	6	4.4
Primary education	11	8.0
Secondary education	81	59.1
Graduates	39	28.5
Occupation		
Petty trader	23	16.8
House wife	33	24.1
Civil servant	62	45.2
Farmer	19	13.9
Marital status		
Married	94	68.6
Cohabiting	43	31.4

Table2: Uterine and tubal abnormalities detected by HSG

Description	Number(N=137)	Frequency (%)
Normal Study	38	27.7
Tubal Anomalies only	38	27.7
Uterine Cavity Anomalies only	29	21.2
Uterine cavity and Tubal Anomalies	31	22.6
Congenital Anomaly	1	0.7
Total	137	

Table 3: Specific Tubal abnormalities detected by HSG

Description	Number (N=69)	Frequency (%)
Unilateral Tubal Blockage	19	27.5
Bilateral Tubal Blockage	20	29.0
Unilateral Hydrosalpinx	4	5.8
Bilateral Hydrosalpinges	6	8.7
Unilateral Loculated Spill	3	4.3
Bilateral Loculated Spill	1	1.4
Unhealthy Tubes	1	1.4
Hydrosalpinx + Loculated Spill	3	4.3
Tubal blockage + Loculated Spill	1	1.4
Tubal Blockage +Hydrosalpinx	9	13.0
Tubal Blockage +Unhealthy Tubes	2	2.9

Table 4: Specific cavity abnormalities detected by HSG

Description	Number(N=60)	Frequency
Fibroids	29	48.3
Uterine Synechiae	27	45.0
Undefined Anomaly	2	3.3
hypoplastic uterus	2	3.3
Total	60	

Infertility is associated with social ostracization in some societies of the Niger Delta and marital disharmony in general.^[1] Nigeria falls within the infertility belt with a majority of the factors responsible for infertility being acquired rather than congenital as only one congenital anomaly was radiologically identified in our series as against acquired anomalies that constituted about 70% of cases, this is similar to findings from previous studies in our environment.^[11,12] Bilateral tubal blockage was the commonest tubal anomaly, which was the same from previous studies in our environment.^[11-13]

The effects of unsafe abortions are further highlighted by the presence of uterine synechiae in 19.7% of cases and with 9.4% of cases having both uterine synechiae and tubal problems. These findings are not different from previous works from other third world countries.^[14,15]

Uterine fibroids were the most common cavity problem detected in 21.2%. This was in keeping with previous reports,^[15,16] highlighting the need for a hysterosalpingogram to be done prior to a myomectomy so that patients can be properly counseled and litigation avoided.

In two cases, the uterine anomaly could not be defined and in two other cases, the uterus appeared smaller than the usual dimensions. These four cases re-affirm the need for other ancillary investigations to be conducted alongside the HSG in order to show the external contour of the uterus, which is essential for differentiating uterine anomalies.^[10-13]

CONCLUSION

Hysterosalpingography plays an important role in the initial diagnostic work up of couples with infertility in our setting. The most common pathology based on HSG in infertility women in the study area was tubal blockage possibly secondary to previous unsafe abortion, pelvic inflammatory disease and puerperal sepsis. Hence, most of the women presented with secondary infertility.

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