

## Hysterosalpingographic Findings in Patients with Infertility in South Eastern Nigeria

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### Abstract

**Background:** Hysterosalpingography (HSG) is still an integral part of gynecological evaluation of infertile couple and its value has not been underestimated in modern gynecological practice, especially in developing countries.

The study aims to evaluate the findings at HSG in patients presenting with infertility at the Ebonyi State University Teaching Hospital, Abakaliki, Southeastern Nigeria.

**Methodology:** A retrospective analysis of 100 consecutive HSG results of patients presenting with infertility was done between January 2005-April 2008. Their clinical records and radiological findings were analyzed for demographic data, and cervical, uterine and tubal, pathology.

**Results:** The commonest age group was between 25 -34 years. Sixty-five percent presented with secondary infertility while 35% presented with primary infertility. Hysterosalpingographic findings were abnormal in 80% of patients (primary infertility 20% and secondary infertility 60%). Bilateral tubal blockage and bilateral fimbrial adhesion were the commonest tubal factor abnormalities while intracavitary mass impression and cervical synechia were the commonest findings for uterine and cervical factor abnormalities respectively.

**Conclusion:** Tubal blockage and tubal factor infertility are still common among infertile couples. This may probably be due to chronic pelvic inflammatory disease or pelvic infection following sexually transmitted infections, mismanaged pregnancies and septic abortions, as most of the patients presented with secondary infertility. Measures to prevent the occurrence of these infections are highlighted.

**Key words:** Hysterosalpingography, Infertility, Abakaliki, Southeastern Nigeria.

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### Introduction

There is no doubt that the commonest cause of female infertility in Africa is tubal factor abnormality resulting from

sexually transmitted diseases and infection related pregnancy complications<sup>1-3</sup>. It can be said therefore that infertility management in Africa centres around the management of the tubo-uterine factors, which contribute up to 64% of infertility cases in Nigeria<sup>4,5</sup>. Thus, assessment of tubal patency and evaluation of the uterine cavity have become routine infertility investigations.

In developing countries, hysterosalpingography (HSG) is still an integral part of gynaecological evaluation of infertile couples and its value has not been underestimated in modern gynaecological practice. Its main indication is still infertility<sup>6,7</sup>. It is safe, inexpensive and provides rapid information concerning the uterine cavity and tubal lumen<sup>8</sup>. Though some authors have advocated its replacement with laparoscopy and hysteroscopy, it has remained superior to laparoscopy in demonstrating intrauterine and intraluminal tubal pathology<sup>10</sup>.

The purpose of this study therefore is to evaluate the findings at hysterosalpingography among infertile women presenting for infertility management.

### Materials and Methods

The study was a retrospective review of 100 consecutive hysterosalpingography (HSG) that were performed on women presenting with infertility at the Ebonyi State University Teaching Hospital (EBSUTH), Abakaliki, Southeastern Nigeria between January 2005- April 2008. In all patients, the procedure was performed between the 8<sup>th</sup> and 11<sup>th</sup> day of the menstrual cycle and they were advised to avoid coitus during this period to prevent exposure of fertilised ovum to irradiation. Fifteen to twenty millilitres (15 -20ml) of 76% aqueous meglumine sodium diatrizoate compound was used for each patient. Three radiograms were done. All cases that did not show peritoneal spill in the last film had delayed film taken twenty (20) minutes after.

The hysterosalpingographic findings were reviewed, paying special attention to the cervical, uterine and tubal pathologies.

## Results

The age bracket was between 15 and 44 years and the commonest age group was 25 -34 years Secondary infertility was commoner than primary infertility, accounting for 65%.

Out of 100 consecutive HSG, 80 (80%) were abnormal and this was more in patients with secondary infertility than primary infertility (60 against 20). The patterns of the abnormal HSG findings are shown in Table II. Of the 80 abnormal HSG, 56 (70%) had tubal factor abnormality, alone or in combination with other factor(s).

Table III shows the characteristics of abnormalities in the tube, uterus and cervix. Bilateral tubal blockage and bilateral fimbrial adhesions were the commonest tubal factor abnormalities, each contributing 21.4%, followed closely by unilateral hydrosalpinx, accounting for 19.1%. Intracavitary mass impression and cervical synerchia were the commonest uterine and cervical factor abnormalities, accounting for 52.3% and 66.7% respectively.

**Table I: Age Distribution**

Age (yrs)	No of patients	Percentage (%)
15-24	7	7.0
25-34	75	75.0
35-44	18	18.0
e 45	0	-
Total	100	100%

**Table II: Pattern of abnormal HSG findings.**

Abnormal HSG	No of patients	Percentage (%)
Tubal factor alone	24	30.0
Uterine factor alone	14	17.0
Cervical factor alone	10	12.0
Tubal factor + uterine factor	24	30.0
Tubal factor + cervical factor	4	5.0
All 3 factors (Tubal, uterine and cervical)	4	5.0
Total	80	100%

56 patients (70%) had tubal factor abnormality, alone or in combination with another factor(s).

**Table III: Characteristics of abnormalities in the tube, uterus and cervix.**

Tubal factor abnormalities	No of patients	Percentage (%)
Unilateral hydrosalpinx	16	19.1
Bilateral hydrosalpinges	12	14.3
Unilateral peritubal adhesions	6	7.1
Bilateral peritubal adhesions	18	21.4
Unilateral tubal blockage	14	16.7
Bilateral tubal blockage	18	21.4
Total	*84	100.0

### Uterine factor abnormalities

Intracavitary mass impression (? Submucousfibroids)	22	52.3
Uterine synechia	16	38.1
Tuberculous endometritis	2	4.8
Congenital uterine anomaly (Arcuate uterus)	2	4.8
Total	*42	100

### Cervical factor abnormalities

Cervical synerchia	12	66.7
Cervical stenosis	4	22.2
Cervical synerchia and stenosis	2	11.1
Total	*18	100.0

\* = Some had combined pathologies.

## Discussion

The fact that secondary infertility contributed 65% of all cases of infertility points to the high prevalence of pelvic infection complicating mismanaged pregnancies, septic unsafe abortions and other sexually transmitted infections (STIs) in the study area. It was noted from the study that 78% of patients admitted to previous history of STIs while almost all (95%) had received antibiotics at one point for ? pelvic infection. In a similar study in Enugu, Southeastern Nigeria, 80% of infertile couples had secondary infertility and most of them had previous history of induced abortion(s) and sexually transmitted infections.

Hysterosalpingography was abnormal in 80% of women, showing a large contribution of tubo-uterine abnormalities to infertility in Southeastern Nigeria. The same finding was observed in Kampala, Uganda where 83% of HSG done for infertility showed structural abnormalities<sup>6</sup>.

Tubal factor abnormality, alone or in combination with other factors accounted for 70% of all abnormal HSG findings. Bilateral tubal blockage and bilateral fimbrial adhesions were the commonest tubal abnormalities, a finding also noted by Kiguli Malwadde et al<sup>6</sup> and Mgbor<sup>10</sup>. The complementary role of laparoscopy to HSG has been emphasized as it helps to highlight extratubal pathologies within the pelvis<sup>11</sup>. However, this facility was not available in the study centre during the period. Sonohysterography (SHSG), also referred to as saline-enhanced ultrasonography, is being used with increasing frequency for investigation of infertility and other gynaecological indications<sup>12</sup>. Advantages over HSG include the ability to assess extrauterine structures, lack of ionizing radiation and often better tolerability by the women being examined<sup>12</sup>.

Intracavitary mass impression (submucous fibroids) was the commonest uterine pathology, followed by uterine synechiae. Intrauterine adhesions have been found to be a common cause of secondary amenorrhoea in Enugu, southeastern Nigeria<sup>13</sup>. This normally results from excessive curettage from induced unsafe abortions. Hysteroscopy remains the gold standard in the diagnosis of intrauterine pathology. However, in resource poor countries that lack the facilities for endoscopic procedures, HSG remains a useful diagnostic tool and should be complementary to hysteroscopy where the facility exists.

Since the highest prevalence of tubo-uterine infertility occur in sub-Saharan Africa where facilities for its treatment are grossly inadequate, and since there is abundant evidence to show that the aetiology of tubal disease in the region is infection related, it becomes imperative that priority should be given to preventive measures. One of these measures is the prevention of pelvic infection by staying with only one sexual partner and use of barrier methods of contraception such as condoms. Another measure is the prevention of unwanted pregnancy through the use of effective contraception and ensuring access to adequate abortion management if the women have unwanted pregnancies. This is especially important in Nigeria where there are

very high rates of unwanted pregnancies and high maternal mortality and morbidity associated with unsafe abortion<sup>14-16</sup>. Also, access to safe delivery services will minimize the risk of puerperal infections.

Additionally, attempts should be made to reduce the chances of adhesion formation during pelvic surgery. Endoscopic or minimal access surgery is an important addition to gynaecology with expanding application because of the major advantages of reduced adhesion formation compared to the traditional surgery.

Considering the fact that tubal microsurgery is not well developed and is rarely done in the study area, emphasis is shifting to in-vitro fertilization and this has remained a very important treatment modality for tubal infertility in Nigeria<sup>17</sup>. Efforts need to be concentrated on patient education programme to increase understanding and acceptance of this technology, which has evolved to form the cornerstone of infertility management. However, cost is a major constraint in Nigeria where such services are highly needed.

In conclusion, tubal blockage and tubal factor infertility occur commonly in Southeastern Nigeria. HSG is still of immense benefit in elucidating tubal and uterine pathologies, especially in resource poor countries that lack facilities for endoscopic procedures.

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