

Hysterosalpingiographic Findings Among Infertile Women In Uyo, South-Eastern Nigeria.

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ABSTRACT

Infertility is the most common reason for gynaecological consultation in Nigeria and tubo-peritoneal factors are its leading cause. Hysterosalpingography has been advocated as the primary procedure for assessing tubal patency in infertile patients. This study evaluates hysterosalpingiographic findings among infertile women in Uyo, South Eastern Nigeria.

Five hundred and eighty infertile patients aged between 18 and 42 years had hysterosalpingography performed on them in the Radiology department of the University of Uyo Teaching Hospital, and a private radiological center both in Uyo, Akwa Ibom State Nigeria between 1st January 2003 and 31st December 2005.

Tubal occlusion was the most common pathology revealed in 45.5% of the patients followed by peritoneal adhesions (30.7%). One hundred and fifty patients (26.6%) had uterine fibroids, 22.8% had intrauterine synechiae, 14.1% had hydrosalpinges and 1.0% of the patients had cervical incompetence. Only two patients had congenital anomalies of the uterus.

Tubal occlusion and peritoneal adhesions were the most common pathological findings on hysterosalpingography. In our environment hysterosalpingography still remains an invaluable tool for assessing tubal patency in infertile patients.

ABSTRAIT

L'infertilité est la raison plus fréquente pour la consultation gynécologique au Nigéria et les facteurs tubo-péritonites sont les causes principales. Hystérosalpingographie a été recommandé comme la première procédure pour l'assestement d'une patente tubale chez les maladies avec des problèmes d'infertilité. Ce projet évalue les résultats hystérosalpingographiques parmi les femmes infertiles à Uyo, Nigéria.

Cinq cent quatre-vingts patients infertiles âgés de 18 à 42 ans ont eu l'hystérosalpingogramme exécuté sur eux dans le Département de Radiologie de l'hôpital des études médicales et Diagnose de l'université d'Uyo, un centre radiologique privé tous les deux à Uyo état d'Akwa Ibom, entre le premier janvier et le trente-et un décembre 2005 (1^{er} jan.-31 déc. 2005).

L'occlusion tubale était la pathologie la plus commune révélée en 45.5% des patients, elle est suivie d'adhésions péritonites révélée en (30.7%) des malades. Cent cinquante des patients (26.6%) avaient les fibromes utérins, 22.8% avaient la synœchia intrautérine, 14.1% avaient les hydrosalpinges et 1.0% des patients avait l'incapacité cervicale. Deux patients seulement avaient les anomalies congénitales de l'utérus.

L'occlusion tubale et les adhésions péritonites étaient les résultats les plus communes du recherché pathologique sur l'hystérosalpingographie. Chez nous l'hystérosalpingographie reste toujours une moyenne inestimable pour l'assestement de patente tubal chez les patients infertiles.

INTRODUCTION

Infertility is the failure of a couple to achieve a pregnancy after one year of regular unprotected intercourse.^{1,2} It remains one of the most pressing gynaecological problems that has attracted considerable attention because of its impact on reproductive health.³ Though a global problem, estimates of its prevalence are extremely variable in literature as its occurrence varies from continent to continent as well as from country to country.⁴ In Sub-Saharan Africa, available evidence indicates that its prevalence is on the increase, thus making it a major social and reproductive health problem in the Sub region.^{4,5}

In Nigeria, recent reports indicate that infertility is the most common reason for gynaecological consultation as two out of every five patients in the gynaecological clinic present with infertility.⁶⁻¹⁰

Due to the very high premium placed on childbearing in Nigeria and many other African societies, infertile women are viewed with severe social disapproval and infertility is often a major cause of marital disharmony, divorce, social rejection and psychological disorders.¹¹⁻¹⁴ Tubo-peritoneal factors have been consistently implicated as the leading cause of infertility in Nigeria, contributing as much as 60% in some series.¹⁵⁻¹⁸ This has been attributed to reproductive tract infections which are reported to be endemic in Nigeria.^{6,18} Thus, assessment of the patency of the fallopian tube is an essential component of any infertility evaluation. Currently, hysterosalpingography (HSG) and laparoscopic chromopertubation are the most commonly used techniques.¹⁹

HSG is a relatively cheap and simple means of assessing tubal patency.^{19,20} It clearly identifies the position of any tubal occlusion, differentiates unilateral from bilateral patency, assesses the degree of damage to the fallopian tube endothelium, detects intrauterine abnormalities and also detects peritubal adhesions.^{1,15,19} In addition, it is associated with a higher pregnancy rate.^{19,21} Currently, HSG has been advocated as the primary investigative procedure for patients with infertility as a normal HSG has been associated with the best subsequent cumulative conception rate leading to a live birth.¹⁹ Besides, it is the only diagnostic tool available to us in Akwa Ibom State.

There has been no recorded study evaluating HSG findings among infertile women in this state. Thus, this study was carried out to evaluate HSG findings in 580 consecutive infertile patients in Uyo, Akwa Ibom State, South Eastern Nigeria.

MATERIALS AND METHOD

This study was carried out in the University of Uyo Teaching Hospital (UUTH) and "Diagnosis", a private radiological center, both in Uyo. UUTH is a newly established teaching hospital and is also the only health facility that offers tertiary health care services to the people of Akwa Ibom State.

Uyo is the capital of Akwa Ibom State in South Eastern Nigeria. It has a population of 244,762 (1991 population census figures). The people are mainly traders, farmers and civil servants. Most of the inhabitants are Christians and only few Moslems and adherents of traditional African religion are found.

Five hundred and eighty patients aged between 18 and 42 years with primary and secondary infertility had HSG performed on them in UUTH and privately between 1st January 2003 and 31st December 2005. All the patients had complained of inability to conceive for a period of 12 months or more. In all the patients, the procedure was performed 2-5 days after menstruation. A preliminary plain film of the pelvis was taken before injection of contrast to check patient positioning and radiographic factors. In the dorsal position, under sterile precautions, a bimanual examination was performed to assess uterine size and position. A Leech Wilkinson canula was then inserted into the cervical canal in all the cases. About 10 -20 milliliters (mls) of urografin was injected slowly into the uterine cavity through the canula and 2 films were taken. A delayed film was then taken about 15 minutes after the canula had been removed and the patients had ambulated and micturated. In all those cases where tubal spasm was suspected, 20 milligrams of hyoscine-N-butylbromide was administered intravenously. Five to ten mls of the contrast was then injected through the canula and an additional film taken. After the procedure, the patients were usually advised to use sanitary pads as they may experience slight vaginal bleeding. Fluoroscopy was not used as it was unavailable in our environment at the time of the study.

RESULTS

Tubal occlusion was the most common pathology revealed in 264 (45.5%) patients. One hundred and sixty-four patients (28.3%) had bilateral tubal occlusion while 100 patients (17.2%) had unilateral tubal occlusion. Peritoneal adhesions were the next most common pathology in 178 (30.7%) patients. One hundred and fifty (26.6%) patients had uterine fibroids out of which 84 patients (14.5%) had submucous fibroids, 48 (8.3%) had intramural fibroids, 12 (2.1%) had cervical fibroids and 10 (1.7%) had cornual fibroids.

One hundred and thirty two patients (22.8%) had intrauterine synechiae, 82 (14.1%) had hydrosalpinges, and 6 (1.0%) had cervical incompetence. Of those patients with hydrosalpinges, 60 (10.3%) had unilateral hydrosalpinges while 22 (3.2%) had bilateral hydrosalpinges. Only 2 patients (0.3%) had congenital uterine malformations (see Table I).

Table I: Hysterosalpingographic findings.

HSG Findings n=580*	No (%)
Tubal occlusion	264 (45.5)
Bilateral patent tubes	196 (33.8)
Peritoneal adhesions	178 (30.7)
Uterine fibroids	154 (26.6)
Uterine synechiae	132 (22.8)
Hydrosalpinges	82 (14.1)
Cervical incompetence	6 (1.0)
Bicornuate uterus	2 (0.3)
Venous intravasation of contrast	2 (0.3)

* There was more than one identifiable factor in most patients.

DISCUSSION

In our study, tubal occlusion was the most common HSG finding. This is similar to what obtains in other parts of this country.^{7,15,22} A World Health Organization multicenter study on the aetiology of infertility showed that the rate of bilateral tubal occlusion in Africa was three times that of other regions of the world⁷. Tubal occlusion is a direct consequence of pelvic infections which are reported to be endemic in Nigeria and other parts of Sub-Saharan Africa.¹⁵ These infections usually follow unprotected sexual intercourse, unsafe abortions and unsanitary delivery practices.⁴ The causative organisms produce intense inflammatory reaction in the fallopian tubes resulting in narrowing or occlusion of the tubal lumen. This leads to interference with normal sperm and ovum transport²³ and hence infertility. Westrom's classic studies showed that the incidence of subsequent tubal infertility is approximately 12% after one episode of pelvic infection, 23% after 2 episodes and 54% after 3 episodes.²⁴

The next most common pathology found were peritoneal adhesions (peritubular and periovarian). These are long term sequelae of pelvic sepsis which may distort the oviducts causing impairment of tubal motility and also hinder ovum pickup

leading to infertility.²⁵ In this instance, the HSG demonstrates the whole length of the tube but contrast medium instead of spreading freely over the peritoneum is retained in small spots at and around its lateral ends.

Uterine fibroids which are the most common tumors of the female genital tract²⁷ constituted 26.6% of the cases. Fibroids which appear on HSG as lengthening of the uterine cavity and also filling defects, are particularly common in Negros in whom they occur earlier and tend to grow much larger.²⁷ Though their exact relationship with infertility is controversial, submucous and intramural fibroids are known to distort and lengthen the uterine cavity and also cause inflammatory and vascular changes in the endometrium and underlying stroma.²⁸ Cervical fibroids may cause distortion of the endocervix thereby interfering with sperm transport while cornual fibroids may occlude the fallopian tubes.^{5,28} All these are known to contribute to infertility.²⁸ In addition, uterine fibroids are associated with anovulation as fibroids are known to secrete prolactin and successful term pregnancy rates of 40-60% have been reported following myomectomy.^{29,30}

Synaechiae which appear on HSG as irregular filling defects were higher than the rate reported in other Nigeria studies.^{6,8,20,26} Uterine synaechiae usually follows destruction of the superficial and basal layers of the uterine endometrium typically from overzealous postpartum curettage resulting in intrauterine scarification.³¹ They may also follow uterine surgery, postpartum hypogonadism, manual removal of a pathologically adherent placenta, pelvic irradiation, and severe pelvic sepsis.^{26,31} Though its association with infertility is incompletely understood, following treatment, approximately 70-80% of patients achieve a successful pregnancy.³²

Hydrosalpinges were found in 14.1% of the patients. These are retort shaped, elongated, tortuous dilatations of the ampullary portions of the fallopian tubes. Though they can be diagnosed on the early films, they are best seen on the films taken 30 minutes after the completion of the procedure as delay allows for more accumulation of the contrast media within the blocked tubes.²⁰ They indicate severe tubal disease and are the end stage development of a pyosalpinx which results from acute and chronic salpingitis.²⁵ Cervical incompetence was found in 1.0% of the patients. This usually presents with two or more mid trimester spontaneous abortions and shows as funneling of the cervix on HSG.³³ Two patients had congenital uterine anomalies which may indicate that these are uncommon in our environment.

In conclusion, tubal occlusion and peritoneal adhesions were the most common HSG findings in our study. This underscores the fact that in our environment HSG is still an invaluable tool in the evaluation of tubo-peritoneal factors in infertile patients.

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