J. Expt. & Clin. Anat. 5(2): 7-12 (2006).

JECA

Anatomical Defects At Hysterosalpingography In Patients With Infertility At The University Of Nigeria Teaching Hospital Enugu, Nigeria

*[1] AGWUNA K.K, [2]ANYANWU G.E.

[1]Department Of Radiology, University Of Nigeria Teaching Hospital, Enugu, Nigeria
[2]Department Of Anatomy, College Of Medical Sciences, Enugu State University, Enugu State, Nigeria
*Author for correspondence

ABSTRACT

Hysterosalpingography (HSG) is a fluoroscopically guided contrast examination of the female genital tract using about 10-20ml of contrast media usually urografin in our environment. It queries the integrity of the female genital tract in clinically suspected cases of infertility. This research study has been designed to find out the various structural changes at HSG in patients with infertility in our environment. It gives a retrospective review of 100 patients who underwent HSG in UNTH Enugu using water-soluble ionic contrast media (urografin 10 20ml). Clinical notes and radiographic findings were retrieved and thoroughly analyzed. The commonest age group seen was 31-36yrs. Most were of low parity. Secondary infertility was seen to be much commoner than primary infertility. Abdominal findings at HSG were found in 75% of patients. The commonest findings were tubal blockage. The commonest pathology found on HSG on women presenting with infertility in UNTH, Enugu is tubal blockage possibly secondary to chronic (PID). Studies to establish associated factors are recommended.

KEY WORDS: Anatomical defects, Hysterosalpingography, infertility.

Hysterosalpingography (HSG) is still a commonly used investigation in the evaluation of female genital tract and the main indication for HSG is infertility (Kiguli and Byanima, 2004). Infertility is the commonest complaint encountered in the gynecological outpatient clinics in Nigeria (Onifade and Adelusi 1976). Ojo (1970), reviewing the problem of infertility in Nigeria concluded that the main factor responsible for infertility is chronic pelvic inflammatory disease.

Infertility is generally defined as the inability of a couple to conceive within a certain period of time usually 1 year (Jonathan 2001). Sterility as distinct from infertility implies an intrinsic inability to achieve pregnancy, whereas infertility implies a decrease in ability to conceive; infertility is synonymous with sub-fertility (Wiloofar et al 1996). Primary infertility applies to those who have never conceived in their lifetime, whereas secondary infertility refers to those who have conceived at some time in the past regardless of whether the pregnancy ended in an abortion or not (Wiloofar et al 1996).

Approximately 90% of couples with unprotected intercourse will conceive within 1 year (Jonathan 2001). The term fecundity refers to the probability of achieving a live birth in 1 menstrual cycle. It is noteworthy to document that the prevalence of infertility ranges from 7-28% depending on the age of the woman whereas sterility affects 1-2% of couple (Wiloofar et al 1996).

Female infertility whether primary or secondary are due to myriad of causes ranging from tubal, ovarian, uterine, miscellaneous factors etc. Hysterosalpingogram provides an objective assessment of the anatomic conditions of the cervix, uterus and fallopian tubes. It is used when the patency of one or both fallopian tubes is in doubt or when some anatomical abnormality is suspected. It is an accurate diagnostic procedure and the risks are minimal and not serious and it is of common knowledge that investigation of a case of persisting infertility can never be said to be complete without hysterosalpingography.

At the University of Nigeria Teaching Hospital, Enugu, Hysterosalpingography is primarily used to evaluate structural abnormalities in the uterus and tubes in patients clinically diagnosed of infertility. This study was undertaken to ascertain the pathologies detected at Hysterosalpingography in patients with infertility in our setting in view of devastating psychological trauma/turmoil and financial burden of persisting infertility on the couples.

MATERIALS AND METHODS

A retrospective review of 100 patients who underwent hysterosalpingography using ionic water-soluble contrast media (urografin 10ml-20ml) was done University of Nigeria Teaching Hospital Enugu, Nigeria clinical notes and radiological findings were analyzed to ascertain etiologies.

RESULTS

During the 2 years period, a retrospective review of 100 consecutive patient's hysterosalpingogram showed that the commonest age group involved were between 31-36yrs which accounted for about 37 patients of the 100 patients examined (37%) 26-30yrs (32 patients) i.e. 32%, 20-25yrs (20 patients). Secondary infertility is the commonest type of infertility accounting for 80 patients out of the 100 patients examined (i.e. 80%) whereas primary infertility was responsible in 20 patients i.e. 20%. Most of our patients were of low parity i.e. between para 0 2 which accounted for 90% (90) whereas the infertile patients of high parity i.e. para 3 and above accounted for 10% (10 patients).

The structural abnormalities of the uterus and tubes noticed from our analysis showed that 55 patients i.e. 55% had blocked tubes with 25 patients i.e. 25% having bilateral tubal occlusion without hydrosalpinx, 10 patients (10%) had right tube occluded without hydrosalpinx while 10 patients (10%) had left tube occluded without hydrosalpinx. Bilateral hydrosalpinx accounted 5% (5 patients) whereas left-sided hydrosalpinx was responsible in 4% i.e. 4 patients while right sided hydrosalpinx is involved in 1% 1 patient. Mullerian system congenital anomalies leading to bicournuate uterus were seen in 2 patients (2%).Uterine fibroids causing enlargement, distortion and filling defects were observed in 26 patients i.e. 26%.

Uterine synechae was noted in 22 patients and those synechae were of varying degrees. Pew-tubal and peri-fimbral adhesions were observed in 5 patients each (5%).Cervical stenosis and endometroses were identified in 3 patients respectively (3%).Hysterosalpingography showed absolutely normal radiographic findings in 25 patients (25%). Both fallopian tubes were patent in 45 patients (45%).

Unilateral patency either left or right tube stood at 5 patients respectively (5%).Analysis of the sites of tubal blockage showed that cornual part of the tube was commonest while the isthmus was blocked in 5% (5 patients), the fimbral end (infundibulum) accounted for 10% (10 patients) whereas the ampula was never seen blocked (0%).

DISCUSSION

Routine hysterosalpingography is a gold standard for evaluating the structural changes in the uterus and fallopian tubes until laparascopic examination was introduced as a second line method (Snowden and Rosencratz 1972, Moghissi & Simp 1975). The value of hysterosalpingography lies in its ability to determine factors responsible for female infertility in the uterus and in the tubes. Hysterosalpingography is invaluable in determining factors for female infertility in that, it is minimally invasive, cost-effective, very sensitive and specific in ruling out uterine and tubal factors responsible for female infertility. It is in fact the front line investigative modality for assessing female infertility complemented by

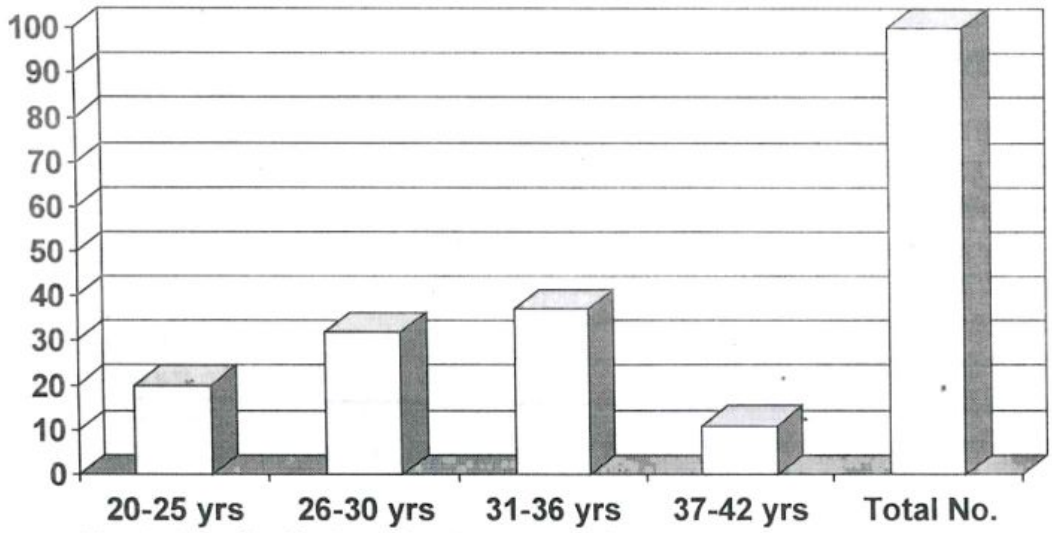

Fig. 1. Age distribution of patients studied

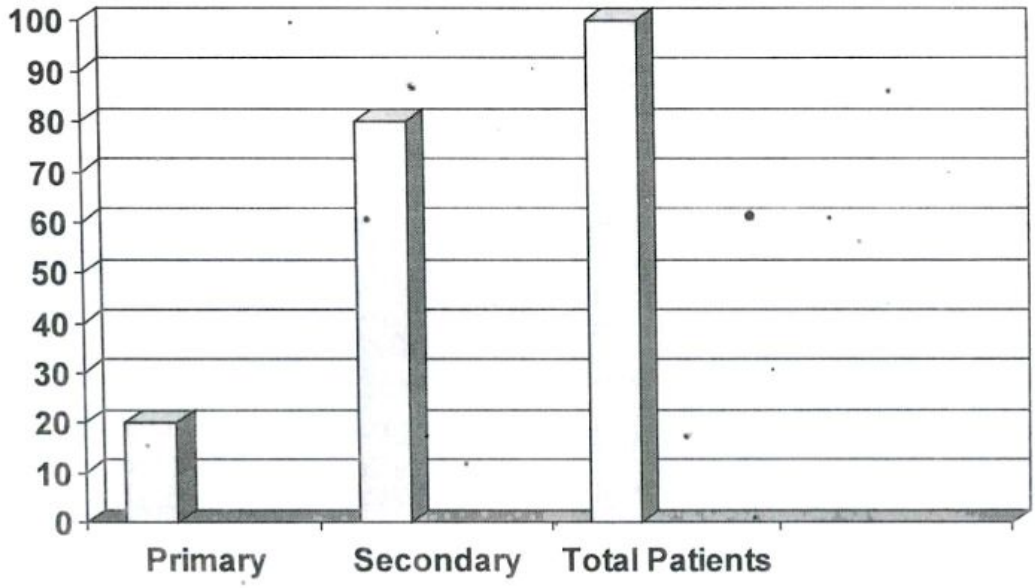

Fig. 2. Distribution of the various types of infertility

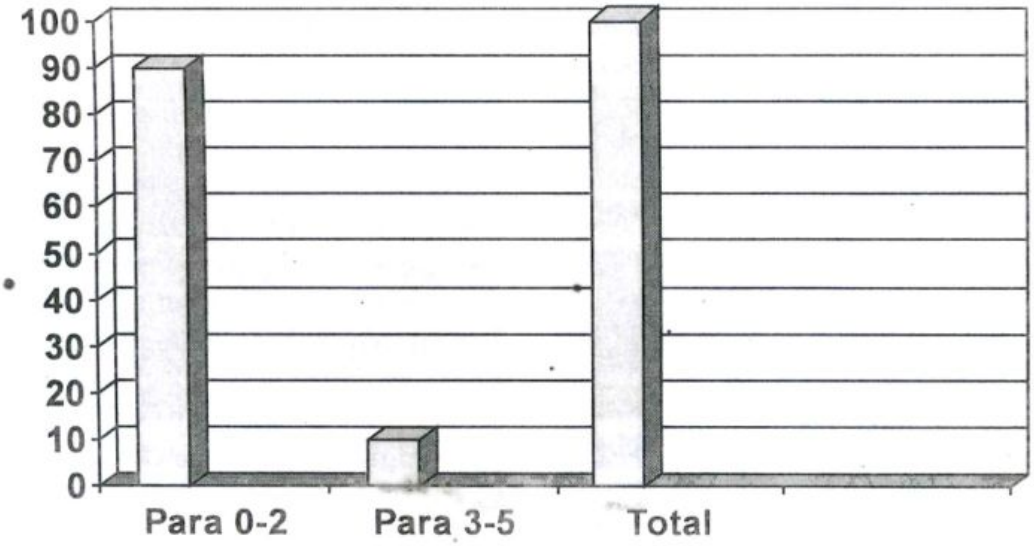

Fig. 3. Distribution of the parity of patients studied

Table 1 showing the structural abnormalities seen in patients studied

Fibroids	Uterine Synechae	Total tubal occlusion	Bilateral tubal occlusion without Hydrosalpinx	RT tubal occlusion without Hydrosalpinx	Lt tubal occlusion without hydrosalpinx	Bilateral Hydrosalpinx
26	22	55	25	10	10	5

Left sided Hydrosalpinx alive	Right sided Hydroslpinx alive	Mullevrian system anomalies bicournuate uterus	Peritubal adhesion	Peri-fimbral adhesion	Cervical stensis	Endometrosis
4	1	2	5	5	3	3

Table 2 showing the patency of fallopian tubes

Both tubes patent	Right tube patent	Left tube patent
45 patients	5 patients	5 patients

Pattern of Anatomical Defects seen in Hysterosalpingography in University of Nigeria Teaching Hospital, Enugu.

Fig. 4. Shows a grossly distorted and displaced uterine cavity and multiple calcified fibroids in pelvic cavity.

Fig 5. Shows normal Hysterosalpingogram (Good peritoneal spillage of contrast media).

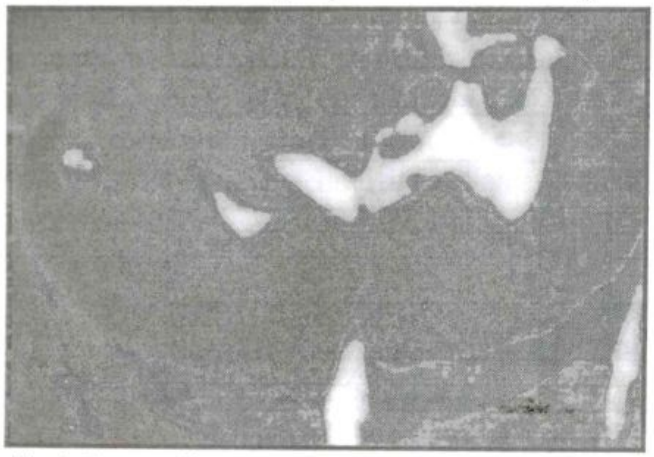

Fig.6 shows a bicornuate uterus

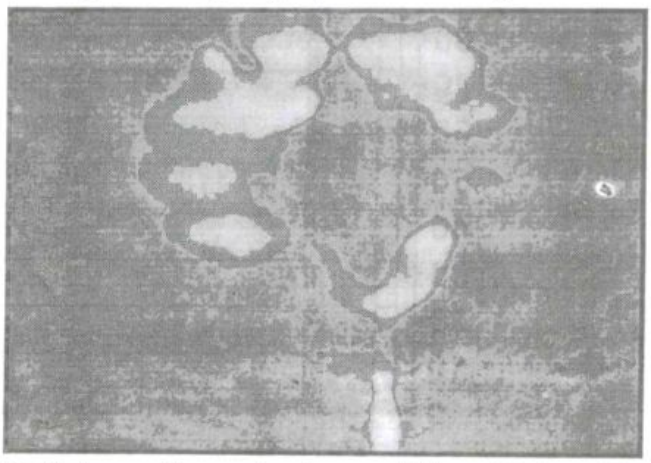

Fig.7 shows a bicornuate uterus and bilateral hydrosalpinx

sonography and endoscopic study (Sheth SS, Sankawde R 2000). The information regarding the pelvic factor in female infertility obtained with a hysterosalpingogram is complemented by a Laparoscopy with dye instillation.

In this study tubal blockage was the commonest structural change with bilateral tubal blockage taking the front burner. The bilateral tuabal blockage was seen 25% of Hysterosalpingraphic cases reviewed thereby making tubal occlusion the commonest single structural changes seen in infertility in Enugu, south-Eastern Nigeria. This study is in total agreement with the opinion expressed by Onifade and Adelusi (1978) and Kiguli and Byanima (2004) that occlusion of the tubes is the commonest structural changes seen in patients being investigated for infertility in Ibadan, Nigeria and Kampala, Uganda respectively.

This study differs slightly from the study by Nwankwo et al (2005) in Port-Harcourt wherein they notice that bilateral hydrosalpinx as the commonest structural anomaly found in fertile study group. In my study, most of the patients have the tubal blockage located at cornual end of the fallopian tubes in consonance with the studies of Onifade and Adelusi (1978), and Kiguli and Byanyima (2004).

Despite the pre-selection of patients for hysterosalpingography, the finding of tubal occlusion among 50% of those so investigated is significant, even though the blockage was unilateral 20% of cases i.e. left tubal blockage, left and right tubal occlusion 11%.

It is noteworthy that more than 80% of patients with tubal blockage have had previous abortion while 20% of patients have had previous caesarean section and fibroids myomectomy, appendectomy, laparotomy etc.

These findings suggest that most abortions and surgeries carried out on their women were done in a aseptic conditions leading to infection and tubal blockage.

Tubal blockage is closely followed by uterine myoma which account for 26% of patients changes on radiographs depend on the size and site of myoma. Small intra-mural myoma may not show changes in uterine cavity size and shape. Submucous and large intra-uterine fibroids distorted and enlarged the uterine cavity and showed filling defects cavity. Double dose of contrast was used in these cases with large uterine cavity. Cornual distortion or obstruction of fallopian tubes may be caused by fibroids. HSG is conclusive in diagnosis of uterine fibroid. (Nwankwo and Akani, 2005)

These structural changes seen in the uterine and tubes sequel to fibroids are also in to those detected by, Kiguli and Byanyima (2004) in Kampala, Uganda.

Synechae of different sizes, shapes, grades and positions were seen in 26 patients (22%) as irregular filling defects and this to our view is very alarming compared to studies by Nwankwo and Akani (2005) and Ogedengbe and Ogunmokun (1999), which revealed 12.8% and 4.3% respectively. Synechae was more common in the lower uterine cavity and cervical canal area. 80% of these patients have positive history of criminal abortion while 20% of these cases had history of previous surgeries.

Synechae is a complication of over zealous curettage during dilatation and curettage procedure, surgery and other pelvic inflammatory disease. In our study bilateral hydrosalpinx accounted for about 5 patients 5%, whereas left sided and right sided hydrosalpinx accounted for 4% and 3% respectively. These results are low when compared with 2.6. The results of Nwankwo and Akani, (2005) and Onifade and Adelusi (1978) showed 52% of their patients had hydrosalpinges.

However, the percentage incidence of hydrosalpinx in our study agrees with those of Sinawats et al 2005, and Kiguli and Byanyima (2004) that had 5% and 6% uterine congenital anomaly. The pattern seen was bicornuate uterus. This is obviously not common in our environment. Peri-tubal and peri-fimbral adhesions were observed in 5 patients each respectively whilst cervical stenosis and endometrosis were recognised in 3 patients (3%) respectively.

CONCLUSION

The commonest pathology found on hysterosalpingography in women presenting

with infertility in University of Nigeria Teaching Hospital Enugu is tubal blockage secondary to chronic pelvic inflammatory. The fact that secondary infertility is common points to pelvic infection complicating, mismanaged pregnancies, septic abortions, sexually transmitted diseases. A study to establish associated factors is recommended.

REFERENCES

Jonathan Rubenstein; 2001 Infertility, male eMedicine Journal; (2):11,1-45.

Kiguli-Malwadd E: Byanyima R.K;2004,Structural Findings at hysterosalpingography in patients with infertility at two private clinics in Kampala,Uganda. Afr. Health sci.4(3) 178-181.

Mogahissi KS, Sims GS, 1976: Correlation between Hysterosalpingography and pelvic endoscopy for evaluation of tubal factors. Fertile steril 1; 1178-1181.

Nwankwo N.C, Akani, C.I; 2005 :Pattern of Hysterosalpingography findings in infertility in Port Harcourt. West African Journal of Radiology 12 (1): 15-19.

Ogedengbe O. K, Ogunmokun A.A. 1999; The trend of intra-uterine adhesions in Lagos Nigeria. Tropical Journal of Obstetrics and Gynaecology 16 (1): 57-60.

Ojo O.A;1970, The pattern of infertility in Nigerians; proceedings of the 6th world congress of fertility and sterility, Tel Aviv 1968. The Isreal academy of sciences and Humanities. Jerusalem;128-132.

Ojo O.A;1970, The pattern of infertility in Nigerians; proceedings of the 6th world congress of fertility and sterility, Tel Aviv 1968. The Isreal academy of sciences and Humanities. Jerusalem;128-132.

Onifade A, Adelusu B. 1976;Tubal patency in infertility in Ibadan, Nigeria. Tropical Journal of Obstetrics and Gyneacology 7 (10) 19-21.

Shett S.S and Sankwe R;2000:Uterine septum misdiagonised on hysterosalpingogram. Int. J.Gyn.and Obst. 69;261-263.

Sinawats; 2005: Tubal abnormalities in Thai infertile females. J med. Assoc. Thai. 88(6):723-727.

Snowden K, Rosencratz M; 1972; Laparoscopy vs Hysterosalpingography in evaluation of female infertility. Fertile sterile 41: 709-713.

Wiloofar Eskandary, MD and Mary Cadieux MD; 1996;Reproductive Endocrinology and infertility in a Alan H, Decherney LN Textbook of current Obstetrics and Gynaecologic Diagnosis and Treatment (1979-1990).