

Hysterosalpingography as an assessment for infertility

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ABSTRACT

Five hundred and fourteen patients with primary and secondary infertility were subjected to investigate the infertility cause using Hysterosalpingography. Positive findings were noticed in (17.5%) of them, the tubal obstruction was found to top the list of pathogenesis with (68%). Out of these (68%) a bilateral and a unilateral tubal obstruction were found in (45.3%), (54.7%), respectively. Furthermore, a uterine myoma was seen in (19.1%), while congenital anomalies of the uterus made a (23.4%) of the positive findings. The results of this study confirmed that Hysterosalpingography is still considered as a backbone for both primary and secondary infertility diagnosis. Also, it's advisable that Hysterosalpingography should be performed and supervised by a legal radiologist since examinations may be at times can be dicey.

Keywords: Hysterosalpingography, Infertility, unicornuate, bicornuate, Pelvic inflammatory disease.

1. INTRODUCTION

Hysterosalpingography (HSG) is a fluoroscopic examination of the uterus and the Fallopian tubes, most commonly used in the investigation of infertility or recurrent spontaneous abortions. Tubal anatomy and patency are currently assessed on hysterosalpingogram. Uterine malformations may be initially assessed with transvaginal sonography (TVS) followed by HSG to demonstrate the lumen^[1]. The HSG is performed by cannulating the cervix and injecting a contrast agent into the cavity of the uterus and Fallopian tubes. The free communication of these lumen with the peritoneal cavity is evidenced by the free spill of the contrast agent into the peritoneal cavity outlining loops of bowel^[2].

In our practice, however, the number of HSG examinations has increased dramatically over the past few years. This increase is likely due to

A: Advances in reproductive medicine, resulting in more successful in vitro fertilization procedure^[3].

B: The trend towards women delaying pregnancy until later in life^[4]. The aim of this study was to determine the pattern of radiological findings in patients who presented with primary and secondary infertility within a one-year duration.

2. MATERIAL AND METHODS

Five hundred and fourteen infertile females of 14-45 years old were undergone HSG examination in Ninevah Clinic in Mosul during a one year period. All patients were booked within 10 days of the menstrual cycle by applying 10-days rule to avoid disruption of any early pregnancy in the secretory phase of the cycle^[5]. They were advised to avoid sexual intercourse during this period^[1]. Patients received a non-steroidal anti-inflammatory drug one hour prior to the procedure^[6]. The patient is placed supine on the fluoroscopy table in the lithotomy or modified lithotomy position. The X-ray equipment was placed above the abdomen and the central beam centered at the midpoint of the line drawn from the anterior- superior iliac spine and the pubic symphysis in the midpoint between the pubic symphysis and the umbilicus. A speculum is inserted into the vagina and the cervix is localized and cleansed with an aseptic solution. HSG catheter is positioned in the cervical canal and catheterization of the cervix was performed by injection of 15-20 cc water-soluble contrast material is then slowly inserted, with fluoroscopic images obtained intermittently to evaluate the

uterus and fallopian tubes. Patients were advised to take pain relief pills in case of severe pain. Also, patients were aware that they might experience light spotting after the procedure, usually lasting less than 24 hours ^[6].

3. RESULTS

From the five hundred and fourteen female patients undergone HSG, ninety-four (94) of them showed a positive finding (17.5%). Also, from those 94 patients, 45 patients (47.8%) had secondary infertility and the remaining suffered primary infertility (52.2%) (Table 1). Sixty-four (68%) suffered from tubal obstruction. Twenty-nine patients (45.3%) out of those 64 patients had a bilateral tubal obstruction (Figure 3) while 35 patients (54.7%) had a unilateral tubal obstruction (Figure 2). Eighteen patients (19.1%) had uterine myoma. A congenital anomalies were found in 22 patients (23.4%) which include; 7 patients (7.4%) with a bicornuate uterus (Figure 4), one patient (1.1%) had a unicornuate uterus, 8 patients (8.5%) had arcuate type of uterus and 6 patients (6.4%) had a small size uterus (Table 2).

Table 1: Classification of infertility

	Primary Infertility	Secondary Infertility
Number	49	45
Percentage	52.2%	47.8%

Table 2: Classification of congenital uterine anomalies

Congenital uterine anomalies	Number of patients	Percentage
Bicornuate uterus	7	7.4%
Unicornuate uterus	1	1.1%
Arcuate uterus	8	8.5%
Small size uterus	6	6.4%



Figure 1: Normal HSG



Figure 2: Right-sided tubal obstruction.

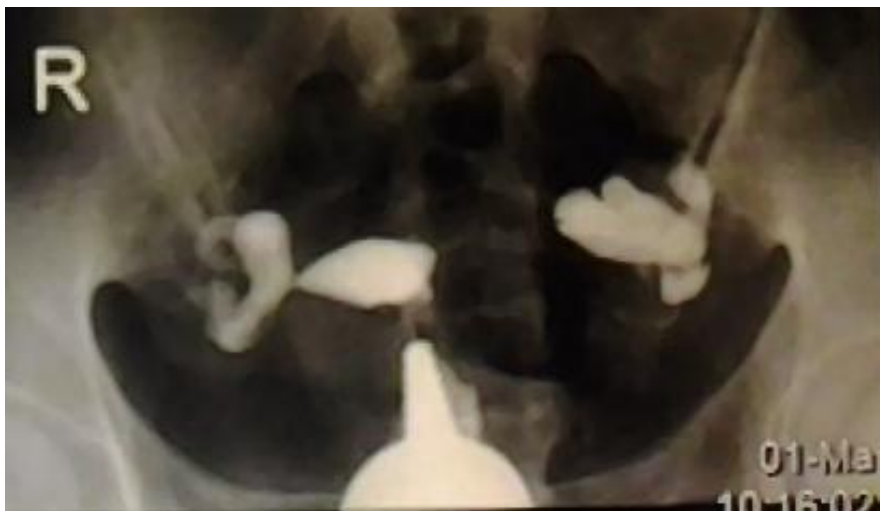


Figure 3: Bilateral hydrosalpinx with distal tubal obstruction.



Figure 4: Bicornuate uterus.

4. DISCUSSION

Infertility is considered to be the widest spread health challenges in the developing countries^[7]. HSG plays an important role in the evaluation of abnormalities related to the uterus and fallopian tubes^[6]. The entire test usually takes about 45 minutes. In this study, Primary incidence of infertility was found to be (52.2%), which was higher than secondary infertility (47.8%). However, Al Subhi, et al. 2013 found a similar percentage of primary and secondary infertility^[8]. On the other hand, Aziz, et al. 2015 obtained reverse results and were (48.6%) and (51.3 %), for primary and secondary infertility, respectively. The most common causes of secondary infertility could be due to inadequate care during previous abortions and pregnancies which could lead to pelvic infections^[9]. The fallopian tubes are the passageway of the ovum to travel from the ovary to the uterus. They are 10-12 cm in length and course along the superior aspect of the broad ligament. Pelvic inflammatory disease (PID) is the most common cause of tubal occlusion leading to infertility^[6]. In this study, the tubal blockage was found to be the most common cause of infertility and made a 68% of positive patients, whether a unilateral or bilateral tubal obstruction. This agreed with the results reported by Aziz, et al. 2015. Congenital abnormalities of uterine shape are due to the abnormal fusion of the Mullerian ducts during early 6-12 weeks of gestation^[10]. The present finding showed 23.4% of the positive patients to have congenital abnormalities. The incidence was arcuate uterus (8.5%), bicornuate uterus (7.4%), small size uterus (6.4%) and to a lesser extent unicornuate uterus (1.1%). These results appeared to be higher than other results reported by Aziz, et al. 2015 with a congenital anomaly of the uterus (6.2%) from the positive cases obtained. On the other hand, similar results were found by Steinkeler, et al. 2009. These variations among different studies seem to be due to different social factors and races. Reviewing results, It has approved that HSG is an important procedure to be ordered in infertility work up as a routine examination. Also, It is recommended as a screening tool in case of infertility which is followed by other modality like Laparoscopy, since it's less expensive and invasive^[11].

5. CONCLUSION

HSG still remains a diagnostic procedure of choice because of its better results, cost-effective and less invasive in spite of the presence of new modalities for diagnosis of tubal obstruction and congenital anomalies of the female genital tract. This study confirms that primary infertility was more common than secondary. Tubal obstruction was the most common cause of infertility while Arcuate uterus seems to be the most common congenital anomalies of the uterus.

6. REFERENCES

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