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Original Research Article

Hysteroscopy in Sub-fertile Women: A Prospective Study

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Abstract

Objectives: 1) To study clinical profile of women who have undergone hysteroscopy. 2) To assess factors of infertility through hysteroscopy, complemented by laparoscopy.

Methods: This was a prospective study conducted at the Department of Obstetrics and Gynaecology, Sir Sayajirao General Hospital, Vadodara over a period of 1 year. A total of 69 women were enrolled. Study was conducted over a period of one year from 16th April, 2009 to 15th April, 2010. Complete biodata and clinical history were elicited. Women were thoroughly examined and investigations were carried out. Hysteroscopy with 5mm, 30° hysteroscope was used and laparoscopy was performed in conjunction with it. Women were followed up after six weeks and at six months.

Results: Maximum no. of women were between 26-30 years of age group (33 women) with mean age of 27.9 years and a range of 15-35 years. 49 had primary infertility (71%) and 20 had secondary infertility(29%). Diagnostic hysteroscopy was performed in 66 women; whereas, operative hysteroscopy was done in 3 women (4.34%). Hysteroscopy was normal in 60 women. 13 women conceived with ovulation induction drugs. Out of 22 women who revealed abnormal HSG, hystero-laparoscopy in same women revealed abnormality in only 13 women.

Conclusion: Hysteroscopy and laparoscopy are diagnosing and treating both uterine and tubal infertility as well as some ovarian abnormalities. They permit to correct data from the HSG and to improve the pregnancy rate.

Keywords: Hysteroscopy, laparoscopy, infertility.

Introduction

Endoscopic visualization of internal genital organs has opened a new field in Diagnostic Gynaecology. The hysteroscope and laparoscope has allowed the gynaecologist to replace his minds eye on an eye capable of far greater accuracy. Hysteroscopy is considered the gold standard tool for the endoscopic visualization of the uterine cavity. Office-based operative hysteroscopy is usually well tolerated by patients [1], avoiding most of the uterine traumatic maneuvers and allows a direct approach for the evaluation and treatment of many intrauterine pathologies during the same diagnostic session in a "see and treat" modality [2, 3]. The risks of complications are minimal and total time taken in competent hands should not exceed five or ten minutes.

There are 2 types of hysteroscopy – diagnostic hysteroscopy is performed to examine the uterus for signs of normalcy or abnormality. Operative hysteroscopy is performed to treat a disorder after it has been diagnosed.

Hysteroscopy is better than TVS in detecting submucous fibroid. Both hysteroscopy polypectomy and hysteroscopy myomectomy enhance fertility compared with infertile women with normal cavity. Despite concern that hysteroscopic resection of large myoma might ablate a large surface area of the endometrial cavity the reproductive benefit appears greater than risk. Women with uterine septum and otherwise unexplained infertility might benefit from hysteroscopic metroplasty.

Hysteroscopy is no longer a "procedure looking for an indication".

Aims

- To study clinical profile of women who have undergone hysteroscopy and to correlate with ultrasonographic findings.
- To assess factors of infertility through hysteroscopy, complemented by laparoscopy.

Methods and material

This was a prospective study conducted at the Department of Obstetrics and Gynaecology, Sir Sayajirao General Hospital, Baroda Medical College over a period of 1 year. A total of 69 women were enrolled. Study was conducted over a period of one year from 16th April, 2009 to 15th April, 2010.

Complete biodata and clinical history specifically were elicited. Women were examined for general condition and vitals. Thorough systemic examination, per speculum and per vaginum examination were carried out.

Investigations like hemogram, blood group, urine analysis, blood urea, serum creatinine, S. LFT were carried out. Other investigations like S. prolactin, S. TSH, HSG, HSA, etc were carried out as per indication.

Women underwent laparoscopy along with hysteroscopy. 5mm,30° hysteroscope of Karl Storz no 26163 was used for the purpose.

Women were followed up after six weeks and at six months.

Results

Table 1 shows that maximum no. of women were between 26-30 years of age group(33 women), thus, mean age is 27.9 years, with a range of 15-35 years.

Table 1: Age distribution of study population

Age	Infertility
< 20	01
21-25	20
26-30	33
31-35	15

Table 2 shows that out of 69 women posted for hystero-laparoscopy, 49 women had primary infertility(71%) and 20 had secondary infertility(29%).

Table 2: Infertility in study population

Infertility	No. of Women	%
Primary	49	71
Secondary	20	29
Total	69	100

Table 3 shows that hysteroscopy was normal in 60 women (86.9%). 6 women (8.7%) showed sup septate uterus, whereas myoma was seen in 1 patient (1.4%). 2 women (2.4%) showed presence of intra-uterine adhesions. The procedure was performed under General Anesthesia in all the patients.

Table 3: Hysteroscopy findings in infertility :

Hysteroscopy	No. of Women (%)
Normal	60 (86.9)
Polyp	00 (0)
Myoma	01 (1.4)
Intrauterine adhesions	02 (2.9)
Supseptate uterus	06 (8.7)

Table 4 shows that out of 66 women who underwent diagnostic hysteroscopy, 13 women conceived with ovulation induction drugs, whereas no patient conceived during 6 months follow-up in whom therapeutic procedure in form of metroplasty and cornual cannulation were done.

Table 4: Hysteroscopic procedures and infertility outcome

Procedure	No. of women	No. of women conceived
Only diagnostic	66	13
Hysteroscopic metroplasty	02	00
Lysis of intrauterine adhesions	00	00
Electroresection of fibroid	00	00
Electroresection of polyp	00	00
Hysteroscopic cornual cannulation	01	00
Removal of foreign bodies	00	00

Table 5 is the result of the comparison of the uterine findings of HSG compared to hysteroscopy as the gold standard. Out of 22 women who revealed abnormal HSG, hystero-laparoscopy in same women revealed abnormality in only 13 women, whereas 9 women showed no abnormality in hystero-laparoscopy. The agreement between HSG and hystero-laparoscopy was 59 %.

Table 5: Discrepancies of HSG and Hystero-laparoscopy findings

HSG (no. of women)	Hystero-laparoscopy
Hydrosalpinx (2)	Normal (2)
Cornual block (1)	Normal (1)
Tubal block (1)	Sub-septate uterus (1)
Irregular uterine cavity with b/l patent tubes (1)	Normal uterus with rt fallopian tube patent (1)

Partial filled fallopian tube with no spillage(1)	Normal (1)
Endometritis adhesion with fimbrial block(1)	Incomplete septum with mid tubal block (1)
B/L tubal block (2)	Delayed spillage (2)
Peri-tubal adhesions (2)	b/l tubes block (2)
Lt tubal block and rt hydrosalpinx(1)	Normal (1)
Lt cornual block and b/l hydrosalpinx(1)	Rt hydrosalpinx,no spillage on rt side (1)

Discussion

The WHO estimates the prevalence of infertility in India to be between 3.9% and 16.8%. This was a prospective study conducted at the Department of Obstetric and Gynaecology, Sir Sayajirao General Hospital, Baroda Medical College over a period of 1 year. The maximum no. of women in our study were between 26-30 years of age group(33 women), thus, mean age is 27.9 years, with a range of 15-35 years. In our study 71% women had primary infertility and 29% women had secondary infertility. The study conducted by Sanjit Sarkar et al showed that approximately 8 percent of married women in India suffered from infertility both primary and secondary. Primary infertility rate was found higher among young women i.e. women of age less than 25 years and decreases as age of women increases. On the other hand, secondary infertility was found lower among young women and higher among older women *i.e.* women of age more than 35 years [4].51 (8.9%) had primary infertility. Hence, the prevalence of primary infertility is 8.9% in women of reproductive age group (15–49 years) in urban population of sCentral India[4]. In large population survey by Boivin *et al*., the prevalence rate of primary infertility ranged from 3.5% to 16.7% in more developed nations and 6.9% to 9.3% in less-developed nations, with an estimated overall median prevalence of 9%[5]. Another study by Adamson *et al*., from South India found the prevalence of primary infertility of 12.6%[6]. In a study conducted by Ashwini Katole et al, the prevalence of primary infertility was 8.9% in women of reproductive age group (15–49 years) in urban population of Central India[7]. This calculated prevalence rate is lower than the reported trends of infertility from developing countries.

In present study, hysteroscopy was normal in 60 women (86.9%). 6 women (8.7%) showed supseptate uterus, whereas myoma was seen in 1 patient (1.4%). 2 women (2.4%) showed presence of intra-uterine adhesions. Hysteroscopic adhesiolysis associated with improved fertility as well as reproductive outcomes as reported by Goldenberg et al[8]. In ART, the role of hysteroscopy is even more important. In the clinical practice, hysteroscopy is commonly performed before IVF in all patients, including women with normal TVS and/or HSG findings. Hysteroscopy reveals the presence of intrauterine lesions in almost 28% of infertile patients with negative TVS results undergoing ART. This demonstrates that TVS has a low sensitivity in diagnosis of several intrauterine alterations[9].

Normal HSG findings were seen in 68.11% (n = 47) and abnormal findings in 31.88% (n = 22). In the present study, HSG showed abnormal findings in 31.88% (22/69), and 18.84% (13/69) women had abnormal hysteroscopy. The agreement between two procedures was 59%. Study by Vahdat *et al*.[10] has reported the diagnostic accuracy of HSG as 84.8% in diagnosis of uterine malformations. In their study, HSG with hysteroscopy as the gold standard had a sensitivity of 95.6%, specificity of 60%, PPV of 84.62%, and NPV of 85.71% for evaluating Müllerian anomalies.

Conclusion

Hysteroscopy and laparoscopy are diagnosing and treating both uterine and tubal infertility as well as some ovarian abnormalities. Hysteroscopy should be performed in all infertile women with abnormal HSG. They permit to correct data from the HSG and to improve the pregnancy rate. In view of the low positive predictive value and the low specificity of the HSG, we believe it should be replaced by the diagnostic hysteroscopy as a first line infertility investigation.

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