

Novel Use of Hysteroscopy in the Assessment of Tubal Patency in Difficult Cannulation

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Abstract

The objective was to assess the method of chromopertubation (CPT) in cases of difficult cannulation to minimize the false-negative cases of tubal block. We had performed laparoscopy and hysteroscopy in 66 females as infertility workup. In all these females, cannulation through the cervical canal was difficult and tubal patency test showed tubal block with Leech–Wilkinson cannula. Then, through the inlet of hysteroscope, methylene blue dye was injected and the patency of tubes was assessed again. In 59 out of the 66 females, we observed that when cannulation and dilation of cervix was difficult, then CPT with hysteroscope showed positive tubal patency test. Introduction of hysteroscope with visualization bypasses cervical factor and reduces false-negative results of tubal patency that is an added advantage of hysteroscope that has not been reported earlier.

Keywords: Chromopertubation, hysteroscope, tubal patency

INTRODUCTION

Hysteroscopy with laparoscopy has an important role as a diagnostic and therapeutic tool in infertile patients.^[1] Hysteroscopy is an important endoscopic procedure in which the uterine cavity is inspected with access through the cervix. In hysteroscopy, various intrauterine pathologies such as polyp, fibroids, uterine deformities, and adhesions can be detected and treated.

Laparoscopy is a modern surgical technique in which the abdominal cavity is inspected for any ovarian pathologies such as ovarian cyst especially endometrioma and polycystic ovaries, tubal pathologies particularly blockage and hydrosalpinx, and uterine pathologies such as fibroids and uterine deformities and treated also in a similar manner. In all cases of infertility, chromopertubation (CPT) is done to check the tubal patency.

In some cases of CPT while performing the procedure with Leech Wilkinson cannula, methylene blue dye test shows no

spill of dye on either sides. It may happen due to the blockage in the Fallopian tube at any level or sometimes in difficult cases of cervical dilatation because of cervical stenosis or different position of the uterus such as acutely anteverted, retroverted, or lateral deviation of the uterus.

In these cases, introducing a hysteroscope under direct vision is the safe and accurate method to bypass the cervical factor and reduce the false-negative results of tubal patency.

In the present study, we had assessed the use of hysteroscope as a method of CPT in the cases of difficult cannulation to minimize false-negative cases of tubal block. This is the added advantage of hysteroscope that has not been reported earlier.

MATERIALS AND METHODS

The present study was conducted at the Advanced Fertility and Gynaecology Center, New Delhi, from January 2018

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to December 2018 after taking the informed consent from patients. The approval from Independent Ethical Committee (F.1/IEC/IFS/2020/No.: 05) was obtained. Patients with primary infertility between the age group of 25 and 35 years were included in the study. Diagnostic hysteroscopy and laparoscopy along with CPT was performed in 66 females as infertility workup. It was done between day 6 and day 10 of the period. The instruments used for laparoscopy and hysteroscopy were obtained from KARL STORZ, (Entwicklung & Produktion, Tuttlingen, Germany). In all these females, cannulation through the cervical canal was difficult. Initially, CPT was tried with Leech Wilkinson cannula that showed a tubal block. Then, a hysteroscope was introduced under vision and through the inlet of the hysteroscope, methylene blue dye was injected and the outlet was closed. The patency of tubes was assessed again by visualization of blue dye through laparoscopy.

RESULTS

All the 66 females were of primary infertility between 25 and 35 years of age. Routine CPT showed bilateral tubal block in all the 66 females.

When methylene blue dye test was performed with hysteroscope, 59 out of the 66 females (89.4%) showed positive tube patency on both sides.

It was also noticed that this method should be avoided in patulous os as it can give false-negative result due to back flow of the dye.

DISCUSSION

Tubal patency test is the important investigation for infertility workup. There are different methods to check the patency of Fallopian tubes – hysterosalpingography (HSG), saline-infusion sonography (SIS), hysterosalpingo contrast sonography (HyCoSy), and laparoscopy.^[2] HSG, SIS, and HyCoSy require the need of X-rays or ultrasound and laparoscopy is an invasive procedure which requires CPT to check tubal patency.

However in some cases of difficult cervical dilatation, these methods can give false-negative result. Hence, a hysteroscope can be introduced under vision and tubal patency test can be performed.

Allam *et al.* evaluated the effectiveness of hysteroscopy combined with transvaginal scan using saline distention media in 64 infertile females and found that it can be used as an alternative to HSG, as an effective, easy, safe, and minimally invasive office procedure that can be offered as a first-line method for the evaluation of the uterine cavity along with the tubes in infertile women. Later on, the difference between the two methods in the diagnosis of tubal patency was compared

using laparoscopy/chromotubation as a gold standard.^[3] Torok performed office hysteroscopy-guided selective CPT Office hysteroscopy guided selective chromopertubation (OHSC-SPT) using a 1.7-mm plastic catheter (Cavafix, B-Braun (Melsungen, Germany)) as an outpatient setting without anesthesia to investigate tubal patency.^[4] Carta *et al.* also performed office hysteroscopic-guided CPTs in 49 infertile females.

Females with unilateral or bilateral tubal stenosis at hysteroscopy with CPT and women with bilateral tubal patency who did not conceive during the period of 6 months underwent laparoscopy with CPT. The pregnancy rate within 6 months after the performance of hysteroscopy with CPT was 27%.^[5] In all these studies, CPT was done with office hysteroscopy and later on confirmed with laparoscopy.

In the above studies, office hysteroscopy was performed to check the patency of tubes that was more painful as it was not under anesthesia. As our study included cases of difficult cannulation through cervical canal, it is difficult to insert office hysteroscope without anesthesia. In this method, it is also difficult to assess the side of blockage and the operative intervention cannot be done to open the tube in the same sitting.

In our study, we performed hysteroscopic-guided CPT along with laparoscopy in the cases of difficult cannulation through the cervical canal due to stenosis or different positions of the uterus that has not been reported earlier.

CONCLUSION

Hence, introduction of hysteroscope with visualization bypasses the cervical factor and reduces the false-negative results of tubal patency that is an added advantage of hysteroscope.

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Conflicts of interest

There are no conflicts of interest.

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