

## EVALUATION OF "STRICT CRITERIA" OF TUBAL STATUS BY LAPAROSCOPY

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### SUMMARY

Among the several tests available for evaluation of tubal factors in infertility, diagnostic laparoscopy coupled with chromopertubation can be considered as the near complete test, barring fallopscopy.

In the present study, 200 infertile women who underwent diagnostic laparoscopy at Manipal Assisted Reproduction Centre, Manipal, were analyzed for tubal factors. Using "Strict Criteria", only 33.5% women were found to have absolutely normal tubes. The "Strict Criteria" were absolutely normal bilateral patent tubes, healthy fimbriae, absence of hydrosalpinx, absence of peritubal adhesions and absence of endometriosis. However, when patency alone was the criteria, 79% women had patent tubes. These women had following associated pathology which would affect tubal function, such as hydrosalpinx (2.5%), abnormal fimbriae (5.7%), adhesions (12%) and endometriosis (9.5%). Hence demonstration of patency alone is insufficient. A careful look into other parameters is mandatory.

### INTRODUCTION

Tubal factor is the most mysterious of all infertility factors. Fallopian tubes

perform varied functions in the process of conception. Tubal factors are responsible for infertility in 40% of all infertile women (Speroff et al 1994). Tubal factors may be congenital or acquired. Congenital anomalies comprise

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of tubal agenesis, reduplication & short or long tubes. Tubal block usually is acquired due to chronic pelvic inflammatory disease (PID), salpingitis isthmica nodosa (SIN), endometriosis or adhesions.

Among the various tests available for evaluation of tubal factors in infertility, diagnostic laparoscopy coupled with chromopertubation can be considered as the near complete test, barring falloposcopy. Laparoscopy gives an opportunity to assess the tubal status and patency along with condition of the uterus & ovaries, besides allowing an overall view of the pelvic cavity.

#### MATERIALS & METHODS

In this prospective study at Manipal Assisted Reproduction Centre, 200 infertile women were selected for diagnostic laparoscopy with chromopertubation, to analyse the tubal factors in infertility. Diagnostic laparoscopy with chromopertubation was done in postmenstrual period under general anaesthesia. Endoscopic camera was used to enhance surgeon's skills in proper evaluation of pelvic

cavity. Fallopian tubes were assessed apparently to see adhesions, hydrosalpinx or diseased fimbriae. Chromopertubation was done to establish tubal patency and to diagnose tubal block. The "Strict Criteria" used for tubal assessment were absolutely normal bilateral patent tubes, healthy fimbriae, absence of hydrosalpinx, absence of peritubal adhesions and absence of endometriosis.

#### OBSERVATIONS

Various parameters were analyzed for tubal status assessment. 158/200 (79%) women had patent tubes while 42/200 (21%) women had blocked tubes (Table I).

Patent tubes were analyzed using "Strict Criteria", which means absolutely normal bilateral patent tubes without any associated pelvic or peritoneal pathology. Normal patent tubes based on strict criteria, were present in 67/158 (42.4%) women. Abnormal patent tubes associated with pelvic pathology, were found in 91/158 (57.6%) women (Table II). These observations signify that though tubes were patent their functional capabilities were compromised due to associated

TABLE I  
TUBAL STATUS (n=200)

Tubal Status	Patients
Patent	158 (79%)
Blocked	42 (21%)

**TABLE II**  
**PATENT TUBES (n=158)**

Patent Tube	Criteria	Patients
Normal	"Strict"	67(42.4%)
Abnormal	Associated Pathology	91(57.6%)

**TABLE III**  
**PATENT TUBES WITH ASSOCIATED PATHOLOGY**  
**(n=91)**

Associated Pathology	Patients
Multiple Pathology	44(48.4%)
Peritubal Adhesions	19(20.8%)
Endometriosis	15(16.5%)
Diseased Fimbriae	9(9.9%)
Hydrosalpinx	4(4.4%)

pathology in more than half of the patients.

Analysis of associated pathology such as hydrosalpinx, diseased fimbriae, adhesions or endometriosis which was present in patients with patent tubes, showed that most of the women (44/91-48.4%) had multiple or combined pathologies. 19/91 (20.8%) women had peritubal adhesions, 15/91 (16.5%) had endometriosis, 9/91 (9.9%) had diseased fimbriae

while 4/91 (4.4%) had hydrosalpinx (Table III).

#### **DISCUSSION**

Diagnostic laparoscopy with chromopertubation being near complete test helps to evaluate tubal status along with patency and associated pathology. It also gives an opportunity to evaluate the uterus and ovaries and to have a panoramic view of the pelvic cavity.

Patent tubes are reported in 88.7% by El Minawi, et al (1978), 63.7% by Okonofua et al (1989) and 56% by Sheth (1979) as against 79% in current study. El Minawi MF (1978) have shown blocked tubes in 11.3% women in comparison to 36.3% (Okonofua FE, 1989), 44% (Sheth et al ) and 21% women (Current study, 1997).

There was not a single case of hydrosalpinx in the studies by Sheth Krishna (1979), Okonofua et al (1989) and El Minawi et al (1978) while the current study showed hydrosalpinx in 5.5% women. Diseased fimbriae were not seen in the study by Seth et al(1979), while these were seen in 4.5% by Okonofua et al (1989), 8.9% by El Minawi et al (1978) and 16.5% women in our study. Endometriosis and adhesions were present in 4.76% and 30.35% women respectively in the study of El Minawi et al (1978) as compared to 11% and 35% in our study.

#### CONCLUSION

These observations signify that in

many cases though tubes were patent, their functional capabilities were compromised by associated pathology.

Fallopian tubes which are blocked prevents ovum transport from ovary to sperm. Patent tubes with associated pelvic or peritoneal pathology, such as hydrosalpinx, diseased fimbriae, adhesions or endometriosis, are functionally compromised preventing the meeting of ovum with sperm and ultimately the conception, rendering a woman infertile. So establishing the tubal patency alone is not sufficient by a complete endoscopic visual assessment of pelvic cavity is essential in the evaluation of tubal factor in case of infertility.

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