

난관 불임환자에서 난관 개통술시 진단복강경의 효용성

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Efficacy of Diagnostic Laparoscopy for TFTC (Transcervical Fallopian Tube Catheterization) in Tubal Infertility Patients

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Objective: To evaluate whether diagnostic laparoscopy before transcervical fallopian tube catheterization (TFTC) would improve tubal recanalization rate and pregnancy rate in patients with bilateral proximal tubal blockage in hysterosalpingogram (HSG).

Methods: The retrospective study was performed in those underwent TFTC from January 1998 to December 2001. A total of 50 patients with bilateral proximal tubal blockage in HSG were subjected to TFTC sequentially using repeated HSG (rHSG), selective salpingography (SS) followed by tubal catheterization (TFTC). Each procedure was terminated once patency had been achieved without proceeding to the next technique.

In Group A patients (n=35, 64 tubes), diagnostic laparoscopy was performed before TFTC was taken to exclude the tube combined with peritubal adhesion or distal tubal pathology. In Group B, patients (n=15, 26 tubes) were performed TFTC without diagnostic laparoscopy.

Results: There were significant difference in clinical pregnancy rate (45.7% vs 15.4%, p=0.034) but no differences were found in recanalization rate (75.0% vs 73.1%) and complication rate (8.6% vs 13.3%). Although there is no significant difference, more tubes were canalized by SS, which means tubal obstruction rather than occlusion, in Group A (25.0% vs 5.3%, p=0.069).

Conclusion: Diagnostic laparoscopy would be effective in the selection of tube for the relatively inexpensive and less invasive TFTC or patients in need of assisted reproductive technologies. With the tubes without combined peritubal adhesion or distal tubal pathology, pregnancy rate was significantly increased.

Key Words: Diagnostic laparoscopy, Selective saipingography, Tubal catheterization

1 : ,) 100-380 1-19,
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20~30% 가
 ,^{1,2}
 (hystero-
 salpingography, HSG), (sal-
 pingo-sonography) , (chla-
 mydia antibody test) (bilateral proximal tu-
 bla blockage)

가 (proximal tubal blockage)
 10~25%^{3,4}

(saipingitis isthmica nodosa, SIN) 가

Ruibn⁵ (obstruction) 1.
 (occlusion)
 (spasm) plugging by amorphous material 1988 1 2001 12
 가

가
 (selective salpingogram, SS) (bilateral tubal
 blockage) 가

(mucus plug) (TFTC)
 가 (proximal tubal blockage)
 .⁶ 50 (Figure 1).
 가 stippled or honeycom-
 bed appearance

(transcervical fallopian tube catheterization, TFTC)
 ,⁷⁻¹⁰ 가¹²

.¹¹ (Group A, 35)

가
 가 (Group B, 15)
 , fimbriolysis, ,
 fimbrioplasty 2.
 가
 . (peritubal adhesion)



Figure 1. Bilateral tubal blockage on HSG: Lt. tube, proximal blockage and Rt. tube, distal blockage.



Figure 2. 3-coaxial catheter. The diameters of the inner, middle, outer catheters are 3.0 F, 5.5 F, 9.0 F.

(repeated hysterosalpingogram, rHSG)
 (SS)
 (SS)
 (obstruction)
 (occlusion)
 (TFTC)
 3 doxycycline 100 mg 1 2
 atropin
 3
 tenaculum forceps
 9-F
 5.5-F coaxial
 (ute-
 rine conus)

5.5-F conus 3-F
 0.018 inch Terumo wire
 guide wire가
 3-F
 (Figure 2, 3).
 3-F 5.5-F
 가
 3-F 가
 가
 (ampulla)
 (Figure 4).
 3.
 10
 mm telescope
 veress needle , veress needle
 가
 (methylene blue)
 chromotubation ,
 chromotubation



Figure 3. Lt. tube with proximal blockage is catheterized with 3-coaxial catheter. 9.0 F in uterine cavity, 5.5 F at conus (SS), 3.0 F catheter in fallopian tube (TFTC).

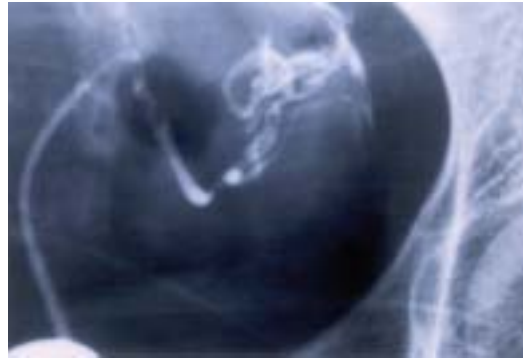


Figure 4. Successful canalization: contrast media is spilled into peritoneal cavity on SS.

3
4.
SAS
Wilcoxon singled-rank test
, $p < 0.05$

1.
(Group A, 35)
(Group B, 15)
가 (Table 1).

2.
(bilateral proximal tubal blockage) 가
(Group A, 35) 70
(n=6) 64
48
(75.0%).
(rHSG), (SS),
(TFTC)
5 (10.4%), 12 (25.0%), 31 (64.6%)

(Table 2).
(Group B, 15)
30
(n=4) 26
19
73.1%), (rHSG),
(SS), (TFTC) 4
(21.1%), 1 (5.3%), 14 (73.7%)
(Table 2).
(rHSG)
72.9% (43/59), 68.2% (15/
22)
가 (SS)
Group A 12 , Group B 1
20.3% (12/59), 4.5% (1/22)
(Table 2).
(TFTC) 31 , 14
66.0% (31/47), 66.7% (14/21)
(Table 2).
Group A
(uterine conus) (fimbriae)
(occlusion)
가 (obstruction)
가 .

Table 1. Comparison of clinical characteristics

| | Group A | Group B | p-value |
|----------------------------|-----------|-----------|---------|
| Patients (n) | 35 | 15 | |
| Tubes (n) | 65 | 26 | |
| Mean age (yr) | 32.9±4.6 | 32.9±6.3 | NS |
| Infertility duration (mon) | 26.0±21.7 | 39.1±39.2 | NS |
| 1° infertility (n) | 15 | 3 | |
| 2° infertility (n) | 20 | 12 | |

NS: not significant

Table 2. Distribution of tubal canalization and tubal canalization rate (*) at each procedure of TFTC

| | Patients (n) | Tubes (n) | Canalized tube (n) Canalization rate (%)* | Tubal canalization (n) | | |
|---------|--------------|-----------|--|------------------------|---------------|---------------|
| | | | | rHSG | SS | TFTC |
| Group A | 35 | 64 | 48 | 5 | 12 | 31 |
| | | | 75.0%* | 10.4% (5/48) | 25.0% (12/48) | 64.6% (31/48) |
| Group B | 15 | 26 | 19 | 4 | 1 | 14 |
| | | | 73.1%* | 21.1% (4/19) | 5.3% (1/19) | 73.7% (14/19) |
| p-value | | | NS | NS | NS | NS |

Group A 16 , 2
 Group B 7
 27.1% (16/59), 31.8% (7/22)
 4.
 3. (Group A)
 3 (Group A)
 B) 2 (Group B)
 16 , 2 45.7% (16/32), 15.4% vs 13.3%
 (2/13) clinical pregnancy rate
 가 . Group A 16 3 5. chromotubation
 13 , Group B 2
 40.6% (13/32), 15.4% (2/13) (Group A, 35) 가
 delivery rate methylene blue
 (Table 3). (chromotubation) 31
 Group A 13 , 7 62
 , 2 , 6 58
 , Group B

Table 3. Clinical pregnancy rate and Delivery rate after TFTC

| | Patients (n) | F/u loss (n) | After TFTC | | |
|---------|--------------|--------------|-------------------------|----------|---------------------|
| | | | Clinical pregnancy rate | Abortion | Delivery rate |
| Group A | 35 | 3 | 16 50.0% (16/32) | 3 | 13 40.6% (13/32) |
| Group B | 15 | 2 | 2 15.4% (2/13) | 0 | 2 15.4% (2/13) |
| p-value | | | 0.035 | | 0.111 |

Table 4. Tubal canalization, Clinical pregnancy according to chromotubation in Group A

| Group A | Patients (n) | Tube (n) | Tubal canalization (n) | Clinical pregnancy (n) |
|---------------------|--------------|----------|------------------------|------------------------|
| Chromotubation, (+) | 7 | 10 | 6 60.0% (6/10) | 5 71.4% (5/7) |
| Chromotubation, (-) | 24 | 48 | 37 77.1% (37/48) | 10 41.7% (10/24) |
| p-value | | | NS | NS |

antibody test, CAT),
 가 24 (tube n=48) chromotubation tubal blockage
 7 (tube n=10) chromotubation
 1990
 (TFTC)
 chromotubation 37
 10 77.1% C.trachomatis IgG cut-off level
 41.7% clinical pregnancy rate 8 74% 92%
 chromo- positive likelihood ratio (LR+)가 2.6
 motubation 6 9.1 가 .¹³
 , 5 60.0%
 71.4% clinical pregnancy rate chromotu-
 bation
 (Table 4).

가
 25~ 가 58% 77%
 35% , 25%, 40%
 - (sal-
 pingo-sonography), (chlamydia ,¹³

18

1966, ¹⁹ Lang ²⁰

(rHSG) 7.8% (5/64) 15.4% (4/26)

(SIN) 가

stippled or honeycombed appearance 가

(diverticulum) nodular hyperplasia 가

가 stippled or honeycombed appearance, 33~45%

ance 21,22

(odstruction) 7~25% (resection and anastomosis) 20.3% 4.5%

14,15

7~25%

(proximal tubal blockage) 가 (isthmic portion) 가

(uterotubal junction) 2~3 cm (proximal portion), (interstitial), (isthmic) 가, 33% (distal) ²³

10~20% ^{16,17} fibrosis, fold

(mucus plugs) agglutination

amorphous material ²⁴ ciliated epithelium (pyosalpinx)

stippled or honeycombed appearance 11% tubal blockage가

가 가 가 23%, 54% 가 ²⁵

1954 Ruibn (obstruction) (occlusion) ⁵ 7~14%

plugging by amorphous material 가

가 (uterine conus) ^{26,27}

(fimbriae) (occlusion)

glucagon, diazepam, isoxuprine, terbutaline (spasmolytic agent) (12/48, 25.0%)

(obstruction) 가 2
8.6%, 13.3%

가
가 , 15~34%
fimbriolysis, fimbrio- 가 21,22 debris

plasty ,
가 가 13
40.6% 2

2 , 6 15.4%
. Golden-
berg Magendantz 가
64 가
55% 47% (obstruction)
28 35~45%

metrosalpingo-anastomosis
(macro-surgical uterotubal im-
plantation) Watkins
1970 34% 가
1970
(micro-surgical tubocornual anas-
tomosis) 37~56%
29
1977
(trans-
cervical ballon tuboplassty) fluoroscopy, hyster-
copy, falloscopy sonography
85%
30% 30,31
3~11%
72.9% (43/59), 68.2% (15/22)
3 ,

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