

=Abstract=

Can Cervicography Play a Supportive Role in the Screening of Uterine Cervical Cancer ?

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Despite widespread clinical acceptance and use of Papanicolaou (Pap) test, cervical cancer remains a disease of prime importance in Korea. The purpose of this study was to investigate the supportive role of cervicography in screening test for uterine cervical cancer. Pap test and cervigram data were obtained from 220 patients who visited the cancer detection center of the department of obstetrics and gynecology, Yonsei University College of Medicine from Jul.1997 to Feb.1998. Histologic specimens were obtained from patients in whom abnormalities were detected by either Pap test or cervigram. Histologic confirmation were taken either by colposcopically directed biopsy (CDB) or large loop excision of the transformation zone (LLETZ).

The results were as follows:

1. Pap test (209 cases) outcomes were WNL in 119 cases (57.0%), ASCUS in 12 cases (5.7%), LSIL in 11 cases (5.3%), HSIL in 48 cases (22.9%), and SCC in 19 cases (9.1%).
2. Cervicography (209 cases) outcomes were negative cervigram (N1, N2) in 53 cases (25.7%), benign atypia (B1, B2) in 61 cases (29.6%), suspicious atypia (S1, S2) in 59 cases (28.6%), and positive (PL, PH, PC) in 33 cases (16.1%). Technically defect (TD) in 3 cases were exclusive in analysis.
3. When cervicography and Pap test were used together, the sensitivity ($P < 0.01$) and negative predictive value ($P < 0.01$) were increased than for cervicography alone.
4. When cervicography and Pap test were used together, the sensitivity ($P < 0.01$) and negative predictive value ($P < 0.05$) were increased than for Pap test alone.

Our study revealed that cervicography combined with Pap test improved the sensitivity and negative predictive value (NPV) in the screening of uterine cervical cancer. In conclusion, cervicography may play a supportive role in the screening of uterine cervical cancer.

Keywords: Cervicography, Uterine cervical cancer

flash, 가 ASA 200 가

NTL, Korea
New Cervicography 가

가 가

가

가 (reproducibility)

(cervicography) 가 .7)

.12) 50
Papanicolaou

70% .3) ,
15 45%

.45)

1925
Hans Hinselman

가 1.
1997 7 1998 2

가가

가

220

가

.1) 가

1981 Wisconsin
Adolf Stafl

colposcopist

125
84 (209)
(CDB) (LLETZ)
11

가 (technical defect; TD)

3
43.8 (; 21 79)

가

National Testing Laboratory(NTL, USA) 가 2.
가

cy-

tobrush spatula , Bethesda (S1, S2) , positive(PL, PH, PC)

WNL(within normal limit), ASCUS(atypical 33 (16.1%) . (TD) 3

squamous cells of undetermined significance), LSIL (low-grade squamous intraepithelial lesions), HSIL(high-grade squamous intraepithelial lesions), SCC(squamous cell carcinoma) (Table 3, Fig. 1 5).

3.

209

3

NTL, Korea 206 , 111 (53.8%),

Ektachrome 200 17 (8.3%),

ASA . 21 (10.2%),

5% (5) 29 (14.1%)

15 20 5% (4)

28 (13.6%) .

4.

30 2 cervigram +0.173 (; - 1.0 + 1.0)

가

2가 가 (Table 4).

NTL, USA 6 11

가 9 ,

New Cervicography 가 6 9

가 11 , 9 ,

가 14 4

(Table 1).

WNL ASCUS, N1, N2 (Table 4 5).

B1, B2 .

5.

3. 125 45 (36.0%)

SAS version 6.03 , 81 15

P 0.05 . (18.5%)

1 가

(Table 5).

1. 가 209 WNL 6.

119 (57.0%), ASCUS 12 (5.7%), LSIL 11 가

(5.3%), HSIL 48 (22.9%) SCC 19 (9.1%) , (Table 6, Fig. 6).

(Table 2).

2. 209 53 (25.7 7.

%) negative(N1, N2) , 61 (29.6%) be-

nign atypia(B1, B2), 59 (28.6%) suspicious atypia

Table 1. Evaluation Report-Cervicogram-Slide New Cervicography System

A. Adequacy of the Cervicogram for evaluation

- Satisfactory for evaluation: visible SCJ and Transformation Zone(T-Zone) ()
- Satisfactory for evaluation: visible SCJ but no T-Zone visible ()
- Unsatisfactory for evaluation: Both SCJ and T-Zone are not visible acetowhite ()

B. Findings/cervicogram-Descriptive diagnosis

- **Negative-no definite lesion, routine basis-screeneing**
 - N-1. ___ Components of T-zone are visible
 - N-2. ___ Components of T-zone are visible-endocervical cytology/HPV test
- **Benign Atypical -A Cevicogram picture, cytology, and HPV Test are recommended in 3 ___, 6 ___, 12 ___, months**
 - B-1. ___ A lesion of doubtful significance is visible inside the T-zone
 - B-2. ___ A lesion of doubtful significance is visible outside the T-zone
- **Suspicious Atypical-Probable normal variant, but repeat cervicography and HPV Test in 1 ___, or 3 ___ month, and colposcopy is recommended to exclude significant disease(hall markers or positive lesions)**
 - S1 ___ 1 month ___ 3 month ___ repeat cervicography
 - S2 ___ colposcopy and biopsy
- **Positive-Colposcopy and biopsy is recommended**
 - PL ___ Compatible with low grade lesion A ___ B ___
 - PH ___ Compatible with high grade lesion
 - PC ___ Compatible with invasive cancer
- **Unsatisfactory-Cervicography again()**
 - UT ___ Technical defect, UO ___ Others(Inf ___, anatomic ___)
- Other ___ non epitheliological disease or malignancy eg sarcoma
- Vulva(), Vagina(), Urethra()

Acetowhite Epith

Punctuation

Erosion or ulcer

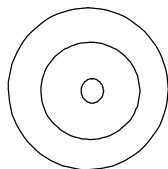
Discoloration

Mosaic

Atypical vessels

Irregular surface

Location



Definition of Evaluation Report- Terminologies and Classifications

- Adequacy of the Cervicogram for evaluation
 - visibility of SCJ(Congenital and secondary) and T-zone is very important for satisfactory evaluation
- Findings of Cervicogram
 - Negative - no definite lesion are visible
 - Benign atypical - character of the lesion in terms of site and morphology is considered Presently to be of nonspecific significance
 - Suspicious atypical - although some of hall markers are visible, the lesion is considered probable normal variants. Colposcopy, however, is recommendable immediately or certain period of observation to exclude significant disease.
 - Positive - character of the lesion in term of site and morphology is considered, the appearance warrants colposcopy to exclude significant disease
 - A. A lesion extending into the canal, the visible portion of which is presently considered to be of doubtful significance.
 - B. A lesion compatible with low grade intraepithelial disease.
- Unsatisfactory for Evaluation of the Cervicogram
 - TD - not adequate for evaluation by technical defect
 - UO - not adequate by other reason eq. Inflammation, anatomic defect etc

Table 2. Outcomes of Pap test

	Results	No. of cases	Percent
Negative	WNL	119	57.0
	ASCUS	12	5.7
Positive	LSIL	11	5.3
	HSIL	48	22.9
	SCC	19	9.1
Total		209	100.0

Table 3. Outcomes of cervicography

	Results	No. of cases	Percent
Negative	N1	38	18.4
	N2	15	7.3
	B1	54	26.2
	B2	7	3.4
Positive	S1	37	17.9
	S2	22	10.7
	PL	10	4.9
	PH	16	7.8
	PC	7	3.4
Total		206	100.0

Fig. 1. Negative cervigram. Left side (N1) in which the squamocolumnar junction and transformation zone are fully visible, while right side (N2) in which the squamocolumnar junction and transformation zone are not visible.

Fig. 2. Benign atypical cervigram. Left side (B1) in which a lesion of doubtful significance is visible inside the transformation zone, while right side (B2) in which a lesion of doubtful significance is visible outside the transformation zone.

Fig. 3. Suspicious atypical cervigram. Left side (S1) in which probable normal variant, but repeat cervigraphy and HPV test in 1 or 3 month is recommended to exclude significant disease, while right side (S2) was recommended colposcopy and biopsy.

Fig. 4. Positive cervigram. Left side (PL) compatible with low grade lesion, central portion (PH) compatible with high grade lesion, and right side (PC) compatible with invasive cancer.

Fig. 5. Technical defect (TD) cervigram is not adequate for evaluation.

Table 4. Correlation between Pap test and cervicography

Pap test	Cervicography		Total
	Positive	Negative	
Positive	42	33	75
Negative	50	81	131
Total	92	114	206

(Correlation Coefficient: +0.173)

Histologic finding	Combined procedure		Total(%)
	Positive(%)	Negative(%)	
Cervicitis	45(21.8)	66(32.0)	111(53.8)
CIN	10(4.9)	7(3.4)	17(8.3)
CIN	19(9.2)	2(1.0)	21(10.2)
CIN	24(11.7)	5(2.4)	29(14.1)
SCC	27(13.1)	1(0.5)	28(13.6)
Total(%)	125(60.7)	81(39.3)	206(100.0)

CIN=cervical intraepithelial neoplasia

Variables	Screening methods*		
	Pap	Cervicography	Combined
Sensitivity	65.3	60.0	84.2
Specificity	87.4	68.4	59.5
PPV	82.1	61.9	64.0
NPV	74.0	66.7	81.5
FPR	17.9	38.1	36.0
FNR	26.0	33.3	18.5

(P < 0.01) (P < 0.05)
 가 , (P < 0.05)
 . , (P < 0.01) (P
 < 0.01) , (P < 0.01)
 가 (Table 7).

Variables	Combined procedure vs. Cervicography	Combined procedure vs. Pap test
Sensitivity	P < 0.01	P < 0.01
Specificity	NS	P < 0.01
PPV	NS	P < 0.01
NPV	P < 0.05	P < 0.05
FPR	NS	P < 0.01
FNR	P < 0.01	P < 0.05

가 가 , , . , .12 50 1942 Pa- panicolaou Traut 70% 1950 .379 , 30% (6 55%) Giles (1988) .451012 58% 50 55% .6 ,

(P < 0.01) (P > 0.05)
가, (P < 0.01)
, (NS), (NS)
(NS) 가.

.12-16) 26.0% , 가 가 , 가 가 , (quality control) , .17) 20 (endocervical canal) 가 .3) , 가 .18) 1925 Hanselman 1 가 , 67 (endocervical canal) 가 .9) , 가가 . 가 . .7,17,21) .6) , 가 1981 Adolf Stafl .6) , Stafl 16 (New Cervicography) 1997 7 1998 2 1 10% 가 220 209 .12) 3 (1.4%) 1. 209 119 (57.0%), ASCUS 12 (5.7%), LSIL 11 (5.3 %), HSIL 48 (22.9%) , 19 (9.1%) .12-15) Tawa (1988) 81% 2. 209 53 38.1% (25.7%) negative , 61 (29.6%) benign (metaplasia) condylo- atypia, 59 (28.6%) suspicious atypia , positive matous changes .19) 가 33 (16.1%) (TD) 3 3. (84.2% vs. 60.0%, $P < 0.01$) (81.5% vs.

66.7%, $P < 0.05$)
 (18.5% vs. 33.3%, $P < 0.01$)
 (59.5% vs. 68.4%, NS),
 (64.0% vs. 61.9%, NS) (36.0% vs. 38.1%,
 NS)
 4. (84.2% vs.
 65.3%, $P < 0.01$) (81.5% vs. 74.0%, $P <$
 0.05) (18.5% vs.
 26.0%, $P < 0.05$)
 (59.5% vs. 87.4%, $P < 0.01$) (64.0%
 vs. 82.1%, $P < 0.01$)
 (36.0% vs. 17.9%, $P < 0.01$)

가

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