

# AGE AND PREVALENCE OF CERVICAL CARCINOMA IN SUBSEQUENT HYSTERECTOMY FOLLOWING A CONIZATION PROCEDURE

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## SUMMARY

**Objective:** To determine the prevalence and age of patients with cervical carcinoma missed by a loop electrosurgical excision procedure.

**Materials and Methods:** A total of 253 women with cervical dysplasia who underwent conization and 248 women who later underwent hysterectomy were retrospectively reviewed. The age and prevalence of those with cervical carcinoma diagnosed and missed by conization were determined.

**Results:** Of the 248 patients, 11 cases (4.4%) of cervical carcinoma were missed by cervical conization. The age of those with cervical carcinoma missed by conization was significantly greater than those whose diagnosis was not missed ( $p < 0.05$ ).

**Conclusion:** Women with severe cervical dysplasia who no longer wish to preserve fertility should be advised to undergo hysterectomy if the conization margins are not free of disease. Older women with incomplete resection margins tend to have undiagnosed hidden cervical carcinoma after cervical conization. [*Taiwan J Obstet Gynecol* 2009;48(3):254–257]

**Key Words:** cervical intraepithelial neoplasia, cervix cancer, conization, electrosurgery, hysterectomy

## Introduction

Cervical intraepithelial neoplasia (CIN) is the abnormal growth of precancerous cells of the uterine cervix. Most early CIN lesions (CIN 1 or CIN 2) are nonprogressive and will eventually resolve. Only in women with associated high-risk factors (i.e. those with persistent human papillomavirus infection) will the lesion progress to cervical carcinoma *in situ* or cervical carcinoma [1].

The American College of Obstetricians and Gynecologists recommends a yearly Papanicolaou test for

those with sexually transmitted diseases, human papillomavirus or human immunodeficiency virus infections, cervical dysplasia, or multiple sexual partners, either male or female. Cervical conization with endocervical curettage is usually performed should results of the Papanicolaou test or colposcopic cervical biopsy reveal CIN 3 or CIN 2, both for histologic confirmation and possible complete lesion resection.

The current trend in the management of CIN is conservative treatment. Optimal management of residual CIN after the loop electrosurgical excision procedure (LEEP) or cold knife conization remains controversial, especially if the surgical margins are not free of disease. Hysterectomy or repeated conization are often required should margins after conization or endocervical curettage remain positive for disease.

In spite of measures to histologically diagnose cervical carcinoma, as those diagnosed would require a



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**Table 1.** Age distribution of patients with cervical dysplasia and cervical carcinoma

	<i>n</i>	Mean	Median	SD
Total cases	253	53.6	52	13.49
Total CIN	233	52.8	51	13.21
Total CIN 3	229	53.2	51	13.48
Cx Ca post-conization	9	61.7	63	14.66

SD = standard deviation; CIN = cervical intraepithelial neoplasia; Cx Ca = cervical carcinoma in situ or cervical carcinoma.

**Table 2.** Age analysis of cervical pathology after loop electrosurgical excision procedure (LEEP; *n* = 253)

Age (yr)	CIN 1	CIN 2	CIN 3	Cervical carcinoma after conization
20–29	0	0	6	0
30–39	0	0	32	1
40–49	2	2	65	1
50–59	0	5	51	1
60–69	1	3	38	3
70–79	2	0	33	2
80–89	0	0	4	1
Total	5 (2.0%)	10 (4.0%)	229 (90.5%)	9 (3.6%)
Average age (yr)	54.1	55.6	52.6	61.7

CIN = cervical intraepithelial neoplasia.

more extensive treatment, there remains a risk of missing a diagnosis of cervical carcinoma before hysterectomy.

The purpose of this study was to determine the prevalence of missed cervical carcinoma following LEEP and whether there was a relationship with age.

## Materials and Methods

Patients' medical records were reviewed; 253 women underwent LEEP for CIN or carcinoma *in situ* (determined by histopathology), and 248 women subsequently received simple hysterectomy at the Department of Obstetrics and Gynecology, Chia-Yi Chang Gung Memorial Hospital from January 2002 to December of 2007. Indications for conization included unsatisfactory colposcopy, repeated CIN or severe CIN after cervical biopsy, and colposcopic suspicion of microinvasive disease. All histologic sections were reviewed by experienced pathologists at Chia-Yi Chang Gung Memorial Hospital.

Data on patients' ages and pathologic findings were compiled from the medical records. The age and prevalence of patients with cervical carcinoma diagnosed by LEEP, cervical carcinoma diagnosed by subsequent hysterectomy (missed cervical carcinoma), and severe CIN were analyzed. The age difference between these groups of patients was compared using the Student's

*t* test. A *p* value of <0.05 was considered statistically significant.

## Results

A total of 253 patients with CIN diagnosed by cervical Papanicolaou test or cervical biopsy and confirmed by cervical conization were retrospectively analyzed. The mean and median ages of this group of patients were 53.6 years and 52 years, respectively (Table 1). A total of 248 patients later underwent hysterectomy and five patients received conization as definitive treatment. Severe CIN was diagnosed among 90.5% (229/253) of the patients who had undergone conization (Table 2).

Of the 248 patients who underwent hysterectomy, 4.4% (11/248; Table 3) were confirmed to have cervical carcinoma in the final pathology. This group had not been diagnosed with cervical carcinoma and had been missed by conization. The mean and median age of those with cervical carcinoma missed by conization were 65.1 years and 67 years, respectively (Table 4). On the other hand, 3.6% (9/253) of patients who underwent conization were subsequently found to have cervical carcinoma (Table 2). The mean and median age of those diagnosed with cervical carcinoma after conization were 61.7 and 63 years, respectively. The age difference between missed and confirmed cervical carcinoma

**Table 3.** Age distribution of patients with cervical carcinoma missed by conization ( $n = 11$ )

Age	Number of patients
20–29	0
30–39	1
40–49	1
50–59	2
60–69	2
70–79	5
80–89	0
Total number	11
Average age	65.1

**Table 4.** Age comparison of patients with cervical carcinoma missed by conization and those with cervical intraepithelial neoplasm not missed by conization

	$n$	Age		$p$
		Mean	Median	
Missed	11	65.1	67	<0.05
Non-missed	233	52.8	51	

groups was significant ( $p < 0.05$ ), i.e. those missed tended to be older (Table 4). Altogether, cervical carcinoma was found in 7.9% (20/253) in our group of patients.

## Discussion

Cervical carcinoma is the fifth most lethal cancer among women, affecting 1 in 123 women per year with an annual worldwide mortality rate of 9 per 100,000 [1]. In the United States alone, cervical carcinoma is the eighth most common cancer among women [2].

In 1998, approximately 12,800 women were diagnosed with cervical carcinoma in the United States and about 4,800 women died [3]. The mean age for cervical carcinoma in the United States is 47 years and peaks at 35–39 years and 60–64 years of age [4].

Our study found a prevalence of 4.4% of cervical cancer that had been missed by conization but later pathologically confirmed by hysterectomy. This figure is comparable with a previous report (3.3%) [5]. On the other hand, Husseinadeh et al reported a much lower figure of residual cervical cancer i.e. 1 in 106 women [6]. There are several explanations for missed cervical carcinoma after conization. One explanation is the inexperience of surgeons in recognizing invasive cervical lesions and in determining the true completeness of a conization biopsy. It is also possible that the

cervical dysplasia lesions are multifocal within the transformation zone [7,8] and that skipped invasive foci are missed.

Moreover, the role of conization in perimenopausal and menopausal women carries some uncertainty as the cervix is atrophic with the transformation zone often receding into the endocervical canal [9], making visualization and complete resection of the transformation zone difficult. Hence, residual disease has been reported in up to 34–38.7% of hysterectomy specimens after conization [5,10,11]. This figure is higher than that of our study. However, our results concur that older and menopausal women have a greater chance of having cervical carcinoma that had not been diagnosed by cervical conization.

In conclusion, incomplete resection of cervical dysplasia carries a risk of hidden cervical carcinoma. Therefore, hysterectomy is often advocated in this group of women with incomplete surgical margins in whom fertility is no longer a consideration. Should cervical carcinoma be later found after hysterectomy, further treatment by other modalities is required.

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