Thai Journal of Obstetrics and Gynaecology
September 1999, Vol. 11, pp. 169-172

GYNAECOLOGY

Cervical Histopathology in Class II Pap Smear Obtained by Colposcopic Directed Biopsy at Bhumibol Adulyadej Hospital

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ABSTRACT

Objective To study the prevalence of underlying cervical pathology in Pap class II

Methods 371 patients who had class II Pap smears from 1 January 1998 to 31 March 1999 were evaluated by colposcopy. Clinical data, colposcopic findings, histopathology were collected and analyzed.

Results Among 336 cases who had abnormal colposcopy, there were 3 (0.9%) invasive carcinomas, 10 (3.0%) Cervical intraepithelial neoplasia (CIN) III, 7 (2.0%) CIN II, 31 (9.2%) CIN I. The relative frequency of CIN in this study was 14.3% and invasive carcinoma was 0.9%.

Conclusion When the abnormal Pap smear screening reports even class II we should pay attention to these women, especially if their ages are over 40 yrs, because underlined chance to have CIN of 14.3% and invasive carcinoma of 0.9%.

Key words: cervical class II Pap, colposcopic biopsy

Carcinoma of the cervix is the most common cancer in Thai women. The incidence of invasive cervical carcinoma in Thailand between the year 1988-1991 is 23.5 : 100,000 women from International Agency for Research on Cancer (IARC).[1] The utilization of screening programs based on the Pap smear and pelvic examination has lead to a step decline in incidence and deaths from cervical cancer.[2, 3]

Although the Pap smear is highly effective in screening for preinvasive lesions of the cervix, a single test has a false negative rate estimated to be 20%. One half of the false negative are due to inadequate specimen sampling, and the other half attributed to a failure to identify the abnormal cells or to wrong interpretation.[4-7]

Materials and Methods

From 1 January 1998 to 31 March 1999, 371 class II Pap smear screening patients were examined by well-trained colposcopists, Gynecologic Oncology unit in our hospital.

All women who had first-time screened class II Pap smear would be referred to a colposcopic

examination. Cases who had pap smear repeated or who did not have cervical biopsy during the colposcopic examination would be inelligible.

Complete medical history, a general physical examination, a pelvic examination and a pan-colposcopic examination (including vulva, vagina and cervix) were steps performed on each first colposcopic visit. Colposcopic examination techniques employed both normal saline and acetic acid before viewing, assured that endocervical canal, squamo-columnar junction, transformation zone and lesions were clearly visible. Biopsy specimens were taken from abnormal areas including routine endocervical currettage and submitted to the department of pathology. Following treatment was based on histopathological result. Conization and/or hysterectomy were standard practice if cervical biopsy taken during a satisfied colposcope revealed CIN II or worse. Cases who had unsatisfactory colposcope, conization was required unless ECC yielded CIN I or less.

Among 371 women who attended colposcopic examination, 35 were ineligible because lack of tissue biopsy confirmed. Pathological diagnosis was made from the 336 colposcopic biopsy specimens. Revision of cytology using the Bethesda system were performed if there was evidence of Cervical intraepithelial (CIN) or worse proven histologically.

Relative frequency of underlying cervical histopathology in Pap class II was reported in percent.

Results

Patient Characteristics

The patient age ranged from 17 to 72 years with a mean of 48.4 years and a median of 33.1 years as shown in Table 1.

The most common histopathology of colposcopic cervical biopsy in the study was cervicitis followed by squamous metaplasia. CIN lesion was found in 14.3%, while invasive cancer was found in 0.9%.

There were 3 invasive carcinomas, first was invasive squamous cell carcinoma of the cervix stage IB, second was adenocarcinoma of the cervix stage IB. The last one was invasive squamous cell carcinoma of the vagina stage II. The abnormal histopathology from colposcopic cervical biopsy is presented in Table 2.

We reviewed all 51 Pap smear slides of the CIN and invasive carcinoma in this study under the Bethesda system in terms of adequacy and epithelial abnormalities. There were 29 satisfactory and 22 unsatisfactory (lack of an endocervical component) specimens. In epithelial abnormalities, there were 11 Atypical squamous cells of undetermined significance (ASCUS), 19 Low grade squamous intraepithelial lesions (LSIL), 5 High grade squamous intraepithelial lesions (HSIL). 2 of the 51 slides were reclassified to Pap class III by Papanicolaou system.(Table 3)

Discussion

Colposcopy currently represents an initial investigation for women with abnormal Pap smears. Although Pap smear is highly effective in screening for preinvasive lesions of the cervix, false negative readings occasionally occur. Half of false negative smears are due to inadequate specimen sampling, and the other half attributes to a failure to identify the abnormal cells or to interpret them accurately.[4, 7, 8] Class II Pap smears are not routinely referred for colposcopy in general practice. However, occasional cases proven to harbour CIN, and alarmingly, one case had an invasive cervical cancer diagnosed in our hospital were reviewed to have initial Pap class II on their latest smearless than a year. The question arised whether some or all of these screenings were truly class II or not. That was the reason of this study.

The median age was 33.1 year that favor Pap class II was common in young age group while it was uncommon in older age group. The satisfactory of the colposcopic examination were more important to be identifide when the age progress. 23.3% in patients aged 41-50 yr, 33.3% in patient aged 51-60 yr, and 66.6% in patients aged > 60 yr had unsatisfactory colposcopic examination. We must concern the satisfactory of the colposcope because of 2 in 10 CIN III and 2 in 3 invasive carcinoma had unsatisfactory

colposcopic examination.

Data obtained from the present study stresses that the most likely histopathology of colposcopic cervical biopsy in Pap class II was cervicitis. CIN could be found in 14.28% of cases, invasive carcinoma could be found in 3 cases (0.89%). When we reviewed the previous class II Pap smear slides in the Bethesda system, we found that 22 of 51 slides were inadequate specimens or lack of the endocervical components. In terms of epithelial abnormalities, there were 11 ASCUS, 19 LSIL, 5 HSIL. 2 of the 51 slides were reclassified to Pap class III. As shown in Table 4.

We discuss this problem that the same result as the previous reports by Sherman and Kelly's review of 123 negative smear from 20 women in whom biopsy proven 18-CIN III, 2-invasive carcinoma. Upon review, 30% of smears were reclassified as atypical squamous cells of undetermined significance and 22% were reclassified as SILS.[9] Bosch etal analyzed screening results in the normal screening environment as compared with a test screening environment. Archival material consisted of five false negative smears and five true positive smears were tested with five screeners. When the screeners were aware they were being tested, the detection rate was significantly better.[10]

We explained these problems by high grade lesions which may be located in the endocervical canal, where they are difficult to sample. Frequently they shed extremely small cells that are difficult to detect, and the cells may have subtle cytologic abnormalities that make their detection even more difficult.[10-12] One case of vaginal cancer was found by pancolposcopic examination and suspected that the previous pelvic examination was inappropriate.

Since time interval from initial pap smear result to colposcope examination was within an average of 2-3 weeks, rapid progressive disease should not be the reason for these 3 cases who were found to have invasive cancer.[11]

In conclusion, clinical suspicion of underlying CIN or invasive cancer should be raised even in cases with only pap smear class II especially in older age women. Bethesda system used for pap smear reading may be helpful in reduction of false negativity compared to original classification.

Table 1. Ages distribution of 336 patients

Age (yrs)	Numbers (%)
< 20	6 (1.7)
21 – 30	76 (22.6)
31 – 40	112 (33.3)
41 – 50	103 (30.7)
51 – 60	24 (7.1)
> 60	15 (4.5)
	Total 336 (100%)

Mean = 48.4 yrs, Median = 33.1 yrs

Table 2. Histopathology of colposcopic cervical biopsy

Ages (yrs)	Histopathology						
	Cervicitis	Squamous metaplasia	Flat condyloma	CIN I	CIN II	CIN III	Invasive carcinoma
< 20	4	1	1	-	-	-	-
21 – 30	52	11	2	8	1	2	-
31 – 40	82	13	1	10	1	4	1
41 – 50	72	11	1	12	4	2	1
51 – 60	17	5	-	1	1	-	-
> 60	12	-	-	-	-	2	1
				31 (9.2%)	7 (2.08%)	10 (2.97%)	3 (0.89%)
				48 (14.28%)			

Table 3. Revision 51 slides of CIN and invasive carcinomas under Bethesda System

Adequacy of the specimen		Epithelial abnormalities			Benign conditions
Satisfactory	Unsatisfactory	ASCUS	LSIL	HSIL	
29	22	11	19	5	16

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