Cervical intraepithelial neoplasia in the young female. Diagnosis and management

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Summary

The prevalence of HPV and CIN in young women has increased in recent years. During a 5-year period (1996-2000), 78 sexually active young females, aged 15-20 years, were referred to the Colposcopic Unit of the 1st Department of Obstetrics and Gynecology of the University of Athens in the major University-appointed hospital in Greece, because of an abnormal cytology or a suspicious cervical abnormality in the presence of negative cytology. Colposcopic examinations were found to be within normal limits in 12/78 (15.4%) of cases. Cervical pathology was related in 22 cases (28.2%) to HPV infection, 23 (29.5%) cases to CIN I, 18 (23.1%) cases to CIN II and 3 (3.8%) to CIN III. No relation between oral contraceptive use and cigarette smoking with HPV infection was found. Our findings strongly confirm the necessity of obtaining cervicovaginal smears on all sexually active gynecologic and obstetric teenage patients.

Key words: Cervix; Intraepithelial neoplasia; Adolescence.

Introduction

Epidemiologic surveys of teenagers indicate that the initiation of sexual activity is occurring at an earlier age and often is not accompanied by methods for pregnancy or sexually transmitted disease (STD) prevention [1, 2]. Adolescents who initiate sexual intercourse at younger ages are more likely to have multiple partners [3]. Indeed, the age at first intercourse and the number of sexual partners are independent risk factors for cervical neoplasia [4]. It has been suggested that the risk of neoplasia is related to the age at first intercourse as well as multiple sexual partners indicating that intercourse at an early age may increase sensitivity to the effects of a sexually transmitted agent [5, 6]. The relationship between human papillomavirus (HPV) infection and the development of genital neoplasia raises particular concerns for adolescents. Current theories identify HPV as an essential prerequisite for neoplasia [7]. Moreover, prospective studies of the risk of cervical cancer after cytologic detection of HPV demonstrate an increased risk of progression to cervical cancer in women younger than the age of 25 years [8, 9]. The purpose of this paper is to present our experience with cervical alterations in the young female.

Materials and Methods

During the period January 1996 - December 2000, 78 sexually active young females, aged 15-20 years, were referred to the Colposcopic Unit of the 1st Department of Obstetrics & Gynecology of the University of Athens, because of an abnormal cytology or a suspicious cervix abnormality in the presence of negative cytology. Colposcopic examination was conducted with the patient placed in a modified lithotomy position on a suitable table. A colposcope (Zeiss OPhI-1) was used to evaluate the cervical status. The cervix was exposed using a bivalve speculum and 5% acetic acid solution was applied. The acetic acid is usually allowed to act for 1-2 minutes. The cervix was examined according to Reid's criteria and standards and a colposcopically-directed biopsy was performed. All colposcopic examinations were performed by the same examiners. The relationship of oral contraceptive use, smoking and history of STDs with cervical pathology was also assessed.

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Results

During this period 2,012 colposcopic examinations were carried out, of which 78 (3.88%) were on teenagers (Table 1). Colposcopic examinations were found to be within normal limits in 12/78 (15.4%) of cases. The cervical pathology was related in 22 cases (28.2%) to HPV infection, 23 (29.5%) cases to CIN I, 18 (23.1%) cases to CIN II and 3 (3.8%) to CIN III (Table 2). HPV was found in 24/44 (54.4%) of all CIN cases.

The information obtained from the history of the patients showed no relation between oral contraceptive use and cigarette smoking with CIN or HPV infection.

Table 1. — *Indications of colposcopic examinations*

Age (years)	Indication				
	Suspicious of cervix abormality	Abnormal cytology			
		HPV	CIN I	CIN II	CIN III
15		1			
16	1	1			
17	1	3	2	1	
18	6	4	2	3	
19	5	7	7	3	1
20	6	8	9	5	2
Total	19	24	20	12	3
	(24.4%)	(30.8%)	(25.6%)	(15.4%)	(3.8%)

Table 2. — *Results of colposcopic evaluation*

Age (years)	Findings				
	Within normal limits	HPV	CIN I	CIN II	CIN III
15				1	
16		1			
17	1	1	1	2	
18	2	5	3	4	
19	3	7	8	4	1
20	6	8	11	7	2
Total	12	22	23	18	3
	(15.4%)	(28.2%)	(29.5%)	(23.1%)	(3.8%)

All patients with HPV infection and CIN I were scheduled for a follow-up program. Patients with high grade lesions (CIN II-III) were managed by an excisional treatment modality in forms of either a LOOP or Laser CO_2 excision.

Discussion

HPV infections and CIN appear to be increasing in sexually active adolescents. The importance of HPV infection lies in its association with CIN and cervical cancer [10]. The STD acquisition by the adolescent has increased for a variety of behavioral, biological and psychological reasons, where sexual activity is considered the most crucial risk factor. Studies examining safe sex practices among adolescents have found that the use of barrier contraceptives is low and the knowledge about acquisition and prevention of STDs is poor [11].

During adolescence the cervix is subjected to hormonal changes that induce epithelial modifications. It seems that the hormonal changes presented at this period of life result in columnar epithelium which is exposed on the vaginal surface to an acidic environment. This appears to be the stimulus for metaplastic transformation [12]. The increase in estrogen secretion influences the cervix and produces expansion of the cervical body. An eversion process takes place in which the columnar epithelium of the endocervix is exposed to the ectocervical acidic milieu. The combination of variable degrees of epithelial maturity, alterations in surface contour and in blood-vessel patterns, result in variance with the appearance of both normal and abnormal epithelia [12, 13].

It is well accepted that the management of premalignant lesions of the cervix should be done as part of a complete protocol which involves optimal screening based on cytology which is today the only form of effective and proven diagnostic efficacy. Variations from the normal pattern, revealed during exfoliative cytology, should alert the physician to the possibility of an abnormality of the cervix. Referral from such screening programs to a colposcopy center with trained physicians, adequate treatment, efficient and long-term follow-up is essential.

Management of the patient with an abnormal smear has undergone a series of significant changes in the last three decades. The standard therapy in the late 1960s for any patient with a positive cervical smear was excision, either by cone biopsy or the cervix, or for the older patient not likely to bear children, by some form of hysterectomy. These procedures often resulted in considerable morbidity, such as the increased risk of miscarriage following cone biopsy, or even mortality following the more extensive hysterectomy techniques. With the introduction of the colposcope in the early 1970s, more appropriate, less aggressive, and more accurate techniques of therapy appeared. The use of the colposcope as a biopsy director and treatment guide versus its use as a primary diagnostic and screening tool, continues to be an issue of a fundamental difference [14].

STDs are a major public health problem. Sexually active teenagers are at higher risk of acquiring these infections than any other age group [15]. The potential sequelae including infertility, ectopic pregnancy and genital cancer have implications for the reproductive health and are particularly devastating for young girls. It is imperative that screening treatment and prevention of STDs in the adolescent are regarded as a priority.

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