The Value of TCT Examination for Cervical Lesions in Primary Health Care Service System

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Keywords: TCT, Cervical lesions, Primary medical and health services.

Abstract: Objective: To evaluate the value of TCT in screening cervical lesions in primary health care system. Methods: 1250 cases of suspected patient suffering from cervical inflammation in the gynecological clinic of our hospital were screened by TCT. 125 cases of abnormal results of TCT screening were performed biopsy under colposcopy and sent to pathological examination. Results: TCT results of 125 patients were not normal; including 74 cases of ASC-US (59.2%), 27 cases of LSIL (21.6%), 20 cases of HSIL (16%) and SCC4 (3.2%). Conclusion: TCT examination has great value in the screening of cervical lesions in primary health care system.

1. Introduction

In medicine, the lesions in the vicinity of the female cervix are known as cervical lesions [1]. The cervix is a part of the uterus of the female reproductive organs, such as infection with bacteria, viruses, spirochetes or traumatic lesions, such as inflammation, injury, tumors (including precancerous lesions) and so on. Cervical lesions are one of the most common diseases in women. Cervical cancer is one of the most serious diseases in cervical lesions. It is one of the common malignant tumors. The incidence of cervical cancer is increasing and tends to be younger. Early screening of cervical cancer and precancerous lesions is of great significance in the diagnosis of cervical lesions. The earliest and most widely used screening technique is cervical mucus cytology. The development of cervical cancer is a long process. It takes several years or even more for the precancerous lesions of the cervix to evolve into cervical cancer due to the infection of high-risk Human Papillomavirus. Therefore, early detection, early diagnosis and early treatment of cervical cancer and precancerous lesions are preventive and preventive. The development of cervical cancer is of great significance. The role of TCT liquid-based cytology in screening cervical cancer and precancerous lesions in primary health care system was studied in this paper [3, 4].

1.1 Objects and methods

Participants: 1250 cases of suspected patient suffering from cervical inflammation in the gynecological outpatient department of our hospital were screened for TCT during the period from January 2016 to January 2018. The main symptoms were leucorrhea abnormality, lumbar acid, lower abdomen and Lumbar and Aching in the back and sacrum and coccyx. The age ranged from 26 to 60 years, with an average age of 40.3 (+3.6) years. There were no acute genital infection, The cervical loop electrosurgical excision and hysterectomy history. The subjects of TCT liquid-based cytology were married women (except menstrual women, women who had not regained menstruation after abortion, pregnant women and puerperal women). The difference was significant in the course of disease and age of the patients ($P < 0.05$).

  DOI: 10.25236/iccse.18.034

Detection methods: Liquid-based Cytology Sample Collection and Processing Instrument: Liquid-based Cytology Tester (New Bernard's Company) Collection: Patients are examined during non-menstrual period, sex is prohibited within the first three days, vaginal flushing is prohibited 3 hours before the examination, vaginal placement of drugs and cleaning the vulva, with cotton swab cervical excess secretions wiped away, Use a special TCT sampling brush to rotate clockwise around the cervical orifice and cervical canal for 3 to 5 cycles, then take out the sampling brush, put the collected cells into the liquid-based cell preservation liquid bottle and shake several times evenly, tighten the lid. Processing: Samples were sent to Jinyu Medical Laboratory Center for examination

Pathological and histological examination. Patients with positive TCT results or obvious clinical symptoms underwent hagioscope cervical biopsy or the cervical loop electrosurgical excision, and routine pathological examination. According to the pathological diagnosis, they were divided into normal, inflammation and cervical intraepithelial neoplasia (CIN): mild (CIN I), moderate (CIN II), severe (CIN III) and cervical carcinoma in situ. CIN grade I and above lesions were positive for pathological and histological diagnosis

1.2 Diagnostic criteria

TCT liquid-based cytological diagnostic criteria: TCT liquid-based cytological diagnostic criteria are classified into normal range (WNL without intraepithelial lesions or tumor cells), atypical scale epithelium cell lesions of unknown diagnostic significance (ASC-US), and non-diagnostic significance unknown according to the classification criteria recommended by Bethesda (TBS system) by the International Cancer Association (NCI) (2001). Typical intracellular lesions (SGC-US) and scale epithelium epithelial lesions include low-grade lesions (LSIL), high-grade lesions (HSIL) and cervical scale epithelium cell carcinoma (SCC). CIN I is equivalent to LSIL in cervical intraepithelial neoplasia, CIN II and CIN III are equivalent to HSIL in cervical intraepithelial neoplasia. Among them, ASC-US and SGC-US lesions were positive for liquid based cytology.

Observation indexes: TCT screening for patients with cervical lesions, and TCT Patients with positive results were examined by pathological examination after biopsy under hagioscope. The relationship between TCT screening and cervical lesions was judged by the positive rate of pathology and histology examination.

Statistical analysis: The data were tested by X2 test and t test, the test standard was set to 0.05, the difference was statistically significant ($P < 0.05$).

2. Results

Results of liquid-based cytological screening: The positive results of TCT screening and Pathology and histology examination in 125 patients were shown in Table 1.

Table 1 125 comparison of TCT findings and cervical pathological examination results

Number of cases		Chronic inflammation	CINI	CINII	CINIII	SCC
≤ASCUS	74	52(70.4）	20(27.3)	2(2.7)	0(0.0）	0(0.0)
LSIL	27	10(37.04）	13(48.15)	3(11.11)	1(3.7)	0(0.0)
HSIL	20	0(0.0)	2(10)	6(30)	10(50)	2(10)
SCC	4	0(0.0)	0(0.0)	0(0.0)	0(0.0)	4(100)
Total	125	62(49.6)	35(28)	11(8.8)	11(8.8)	6(4.8)

Table 1 The positive rates of TCT and histopathology in all patients were ASC-US 74 cases (59.2%), LSIL 27 cases (21.6%) HSIL 20 cases (16%) SCC 4 cases (3.2%). The positive rate of TCT test increased with the increase of cervical lesion grade. [5]

3. Discussion

Cervical diseases mainly include cervical cysts, cervical hypertrophy, cervical polyps, cervical erosion, cervical leukoplakia, cervical precancerous lesions and cervical cancer, of which cervical cancer is the most serious. The incidence and mortality of cervical cancer is second only to breast cancer and colorectal cancer in women's health in the world. It is the third most common malignant tumor, and there are also cervical leukoplakia The younger trend, the second most common female genital tract malignancy in developing countries, is second only to breast cancer. It seriously threatens the quality of life and safety of women, especially rural women. However, the existence of cervical cancer has a long, reversible incubation period, so early screening, early diagnosis, early intervention can achieve the purpose of prevention and treatment, to improve the quality of life of women, improve survival rate and reduce mortality. Cervical cancer is the only etiological factor in gynecologic genital malignancies. [6] is associated with HPV infection. The HPV virus is a spherical DNA virus, which mainly infects human epidermis and mucous scale epithelium, leading to different lesions. Up to now, more than 130 HPV viruses have been isolated, and there are at least 30 species associated with genital tract mucosal infection. Women can be infected with HPV in 80% of their lives, often in 8 to 10 months by the body's natural clearance; only 5% of women can be persistent infection. According to different types of HPV infection can cause different clinical manifestations, the relationship between HPV infection and cervical invasion can be divided into high-risk type and low-risk type, the high-risk type is associated with cervical cancer. HPV (human papillomavirus) infection is the main factor of cervical cancer [7]. Low-risk HPV infection mainly causes the skin around the anus, anal canal, urethral orifice and male genitalia, female vulva, lower vagina, cervical orifice, cervical canal, cervical exogenous warts and low-grade cervical intraepithelial neoplasia; high-risk HPV infection in addition to causing genital warts, can even lead to external genital cancer, cervical cancers Cervical cancer and high cervical intraepithelial neoplasia. This report confirms that the higher the grade of lesions, the higher the positive rate of TCT screening, suggesting that the presence of HPV in cervical diseases plays an important role in the development. TCT screening plays a significant role in the detection of cervical lesions. Patients with abnormal TCT results underwent hagioscope cervical biopsy or Circumcision of cervix for pathological examination according to CIN grading. The incidence of high-grade lesions was significantly higher [8]. Therefore, TCT screening has become a screening method for cervical diseases. The results of this study showed that 125 patients had abnormal TCT results, including 74 cases of ASC-US (59.2%), 27 cases of LSIL (21.6%), 20 cases of HSIL (16%) and SCC4 (3.2%). Clinically, patients with positive TCT results, i.e. ASC-US and above lesions, can choose to undergo cervical biopsy under colposcopy or cervical loop electrosurgical excision cone excision and send pathological examination in time [5,9]. For cervical cancer and precancerous lesions, timely diagnosis, this method can effectively reduce the incidence of cervical cancer; reduce the mortality of cervical cancer [10].

According to the epidemiological situation of Human papillomavirus (HPV) infection in female genital tract, [11] although no large sample of HPV infection has been reported, the incidence of cauliflower excrescence (CA) caused by HPV infection is increasing year by year, and the incidence is expected to be the highest among STDs, due to cervical diseases in primary medical institutions. [12] Because of the limitation of screening level and women's knowledge of cervical diseases and economic conditions, rural patients may go to lower-grade hospitals, resulting in the fact that TCT screening for rural patients in large sample reports is lower than theoretical data. Because there are many cases of cervical cancer that have been missing and unreported. About 130,000 new cases of cervical cancer are added each year in China, and the mortality and morbidity of cervical cancer are increasing. The incidence of cervical cancer is younger. It can be predicted that the loss caused by HPV infection in China is huge.

4. Conclusion

From the above study, we can find that TCT is the first barrier, If the TCT results show abnormalities, then women should be further digital colposcopy or biopsy histopathology under colposcopy. according to pathological diagnosis can be timely and accurate judgment of the disease; such as TCT results show benign, other examinations can be No need to do it again. The application of TCT in cervical lesion detection in primary health care system is of great value, which is worthy of clinical promotion in primary health care system

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