

Status quo and prevention of overtreatment in cervical diseases

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Summary

The objective of this paper was to review the diagnosis and treatment of cervical diseases. Often, due to improper judgment of interventional indications for cervical lesions, overtreatment to various degrees takes place, influencing patients' health and lives. This review analyzes the expression, causes and negative aspects of overtreatment of cervical lesions, and discusses the available therapeutic methods for cervical lesions, to remind gynecologists to master the interventional indications for proper treatment and avoid overtreatment, so as to achieve normalization and individualization in treating gynecologic diseases.

Key words: Cervical Diseases; Overtreatment; Prevention.

Introduction

Cervical lesions refer to various pathological changes happening in the cervix, including benign cervical lesions, cervical intraepithelial neoplasia (CIN), cervical cancer, etc. [1]. In recent years, medical knowledge has spread, diagnostic techniques have developed, and women's healthcare sense has increased, and accordingly the majority of cervical diseases can be diagnosed in early stages and treated in time. However, even though most patients are cured, because of insufficient control of the interventional indications for cervical lesions, overtreatment can occur, such as unnecessary therapy, complications of simple treatment, etc., affecting patients' health to various degrees. The paper discusses various issues, for example, whether it is necessary to treat or not, what therapy should be adopted, what the interventional indications are for various therapeutic methods, etc., with a view of making the treatment of cervical lesions more normalized and accurate.

Status quo of overtreatment of cervical diseases

Overtreatment of cervical lesions

a) Treat patients unnecessarily: carry out treatment of patients with benign lesions and physiological phenomena which do not require treatment, such as cervical hypertrophy, cervical Nabothian cyst, cervical columnar ectopy, etc., which do not belong to infectious cervical diseases, are free of clinical symptoms, and are not combined with other cervical lesions, as well as some patients with follow-up CIN 1 (without clinical symptoms, without apparent abnormalities under colposcope, human papilloma virus (HPV)-negative).

b) Improper treatment method selected for cervical lesions requiring treatment: for example, patients with a

cervical polyp, true erosion or CIN 1, who could be treated with therapy such as laser, electrosurgery, cryotherapy, microwave, focused ultrasound, etc., use of loop electrosurgical excision (LEEP) instead; young patients with CIN 3 who can undergo cervical conization, as well as patients who desire children who have early cervical cancer and can undergo radical trachelectomy, undergo hysterectomy instead; while carrying out hysterectomy on young patients with cervical cancer, both ovaries are removed simultaneously. Cervical conization performed with the purpose of diagnostic clarification belongs to the diagnosis, rather than over-treatment [2-4].

Causes for overtreatment

Patient factors: due to lack of medical knowledge, many patients think that once they see a doctor, the doctor has to find a disease, and if a disease exists, therapy must be undertaken; only the doctor is "responsible" and "has expertise". Additionally, due to fear of diseases, the patients often ask doctors to choose a therapeutic method stronger than necessary, even at the cost of losing the uterus, in order to obtain some so-called "peace".

Physician factors: lack of normalization of the diagnostic and therapeutic process: for example, the current screening of cervical cancer and precancerous lesions mainly follows a three-step procedure: ThinPrep cytology (TCT) and/or HPV, colposcopy, and histology. TCT with HPV detection is the main method for examination of cervical lesions. When TCT and/or HPV detect abnormalities, then a colposcopic examination is carried out and a biopsy is taken at the suspected locations. The issue is that without carrying out a basic TCT examination and necessary HPV detection, if the visual examination finds abnormalities, the doctor will determine the treatment; or otherwise, without TCT and HPV examinations, colposcopy is chosen directly, and the diagnosis is made according to colposcopic images; and even without taking living tissue, a CIN diagnosis is made. Moreover

Revised manuscript accepted for publication January 16, 2012

the phenomenon that treatment is carried out directly based on TCT and HPV results without pathological examination also exists. Confronted with patient preoccupation about whether the existing disease will progress or turn into malignancy, to reduce medical disputes possibly caused by inestimable disease progress, without considering the possible complicating diseases and negative results from treatment, carry out the interventional therapy too early on during the follow-up of lesions [5].

Overtreatment

While bearing the economic burden, the patients suffering from overtreatment also undertake the possible disadvantages from the treatment itself to various degrees. Under normal conditions, the cervical columnar epithelium can secrete mucilage, forming a mucous plug, which not only wets the vagina but also plays the role of barrier against infection. Additionally, a sufficient amount of mucilage facilitates the passing of sperm. Treatment can influence the function of columnar epithelium to various degrees, reducing the mucous and adversely affecting passing of sperm. Especially after carrying out LEEP surgery, possible cervical stenosis, even atresia, may affect conception. Moreover, cervical incompetence caused by too deep cervical conization to the internal cervical orifice may cause complications such as miscarriage, etc. After treatment, patients must also face problems such as short-term secretion increase, exuvial hemorrhage, secondary infection, short-term abstinence of sexual activity, etc.

Prevention of overtreatment of cervical diseases

Effective preventive measures for treating cervical cancer are: master the intervention indications for treatment of cervical lesions, select proper therapeutic methods, and comply with the principles of normalization, individualization and humanization. Depend on the type of lesion, choose local administration, therapy (including laser, cryotherapy, infrared, microwave, electrosurgery, focused ultrasound), cervical conization, radical trachelectomy, hysterectomy, etc. [6].

Benign cervical lesions

Overtreatment of benign lesions, mainly cervicitis and cervical dysplasia (cervical polyp), mainly originate from misunderstandings generated about infective cervical diseases. Previously, the description of cervicitis was taken from the concepts of chronic cervicitis and acute cervicitis, thinking that chronic cervicitis comes from the incomplete treatment of acute cervicitis, including cervical erosion, cervical Nabothian cyst, cervical hypertrophy, cervical polyp, endocervicitis, etc. However, the concept of chronic cervicitis has been discarded at present, and only the term cervicitis has been adopted, i.e., limited to inflammation of the uterine cervix and vagina, as well as mucous membranes of the canal of uterine cervix [7]; moreover, the diagnosis can only be made when one of two characteristic signs is available

(when rubbing the canal of the uterine cervix with a cotton swab and purulent secretion is visible or bleeding is induced) and leukocyte examination of secretion and the determined pathogenic examination results [8].

How should the various expressions of chronic cervicitis in the old days be regarded? In the past, so-called cervical erosion consisted of two cases, one was under physiological conditions, i.e., exfoliation of cervical squamous metaplasia caused by change of the vaginal acid environment following fluctuation of estrogenic levels, is covered by the columnar epithelium and immature squamous metaplasia, thus it seems like erosion (also called fake erosion); in fact, it is the columnar epithelium in the wide transformation zone and results from ectopy of the squamous columnar junction, normal physiological phenomena, known as "cervical columnar epithelium ectopy". Cervical erosion belonging to pathologic phenomena refers to epithelial exfoliation caused by pathogenic infection (herpes simplex virus, syphilis, Chlamydia trachomatis, Neisseria gonorrhoeae, etc.), i.e., the commonly called true erosion [9]. Therefore, cervical erosion seen colposcopically is differentiated as physiological or pathologic according to whether there are clinical symptoms or not, as well as the examination results of secretions and pathogens. Pathologic erosion should be treated actively, and the treatment should be mainly focused on the causes of erosion; for columnar epithelium ectopy, if the cervical cytological (or HPV) examination is normal, and there are no symptoms such as increased secretions, contact bleeding, etc., there is no need to treat; if the cervical columnar epithelium ectopy shows symptoms or co-infection, carry out the corresponding local treatment (medication or physical therapy), but LEEP is not advisable. However, the current treatment of cervical columnar epithelium ectopy should attend to two phenomena – one is overtreatment, neglecting the physiological and pathologic examination, and the other is negligence of its similarity to cervical precancerous lesions due to the wrong opinion that cervical erosion belongs to chronic inflammation, so that the diagnosis and treatment are delayed because of no cytological screening [10, 11].

Today, there is still no determinant standard for the diagnosis of cervical hypertrophy; if patients do not show clinical symptoms or any other pathologic changes, there is no need to perform therapy generally.

Cervical Nabothian cysts are formed from gland secretions retained inside the gland duct, which is narrowed or blocked because the hyperplasia of connective tissue around the gland duct or the scar presses the gland duct. Afterwards new squamous metaplasia covers the cervical gland duct or enters into the duct and blocks its mouth during formation of the transformation zone, without special clinical meaning. It can be followed up regularly, and no treatment is needed. If the cyst is too large, showing clinical symptoms or co-infection, then it should be treated with laser [12].

Since it may cause symptoms such as contact bleeding or increased secretion, cervical polyps should be extirpated preferably with surgery. If the polyp is located inside the cervical tube, hysteroscopic polyp electroci-

sion should be carried out to reduce the chance of relapse. Endocervicitis should be treated according to the procedure for cervicitis [13, 14].

Cervical intraepithelial neoplasia (CIN)

CIN was reported by Richart for the first time in 1967. The risks of CIN developing into carcinoma in situ and invasive cancer are 20 times and 7 times greater in normal people, respectively [15]. The risks of CIN I, CIN II and CIN III developing into cancers are 15%, 30% and 45%, respectively. CIN develops slowly, showing certain progress, but it may regress or reverse. The development from CIN I, CIN II and CIN III into cervical cancer takes several years, even more than ten years [16]. The selection of a therapeutic method for patients should comply with the individualization principle, i.e., considering the treatment is integrately according to the patient's age, procreation, lesion range and level, and follow-up condition. Among CIN I patients, 15% may further develop, 20% will remain constantly, and 65% will regress naturally. If these patients do not also have highly dangerous HPV infection, carry out the regular inspection and monitor them closely. For patients with cytological ASC-US, who are HPV positive, or showing positive after converting negative, local physical treatment should be carried out [17]. If patients also suffer from middle- or high-grade cervical columnar ectopy and are HPV positive requiring prompt treatment; local physical treatment and/or medication should be carried out. CIN II patients can select the therapy according to specific conditions: if CIN III patients have severe pathologic atypical hyperplasia, LEEP or cold knife conization (CKC); at the same time, excised samples need to be labeled. If it is carcinoma in situ CKC or hysterectomy should be performed. If the edge of the conization sample still has a CIN II focus, it should be reexamined after three months, and it is inadvisable to carry out local surgical treatment again immediately. If the edge of the conization sample still has a CIN III focus, colposcopy should be done after one month, and then handled properly. If CIN III patients are older without child-bearing desire and requiring hysterectomy, surgery should be carried out [18-20].

The general principles for CIN treatment during pregnancy are as follows: watch conservatively and delay the therapy. During pregnancy, under the influence of estrogen, cervical squamous metaplasia thickens, basal cell hyperplasia is active, and the gland hypertrophies, which may make the exfoliated cells show phenomena such as nucleus augmentation, stronger staining, etc., so that the cytological examination is likely to misdiagnose it as cervical CIN. Cytological changes of the uterine cervix during pregnancy can recover six weeks after child-birth generally [21]. Therefore, it is advisable to carry out the examination again after giving birth, diagnose again, and treat the patient at that time. For pregnant women with CIN I or II, the treatment can be suspended, with regular cytological examination and colposcopy follow-up. The patient should be reexamined six weeks after giving birth; if the result is still CIN I or II she should be treated

based on the non-pregnancy period. CIN III treatment should be determined according to gestational weeks. In principle follow-up should be carried out closely, and it is unnecessary to terminate the pregnancy. At the 6th-8th week after giving birth, if the cytological examination and biopsy are still CIN III, the patient should be treated according to CIN III during non-pregnancy or according to the patient's wishes, the pregnancy should be terminated first and then cervical conization should be carried out. Cervical conization during pregnancy will increase the risk of bleeding, miscarriage and premature delivery [22-24].

For patients with early cervical cancer who want children, it is advisable to carry out radical trachelectomy plus pelvic lymphadenectomy or biopsy. However, the following conditions must be satisfied: the patients possess no sterile factors, FIGO staging is 1A2-1B1, colposcopy shows that there is no invasion above the internal cervical orifice, no regional lymph node metastasis, no parametrial or uterine implication, and no blood vessel or lymphatic vessel invasion [25].

Know the function of cervical conization during the diagnosis and treatment of cervical lesions: cervical conization includes LEEP and CKC [26]. These are used for the diagnosis and treatment of cervical diseases; not only do they cut off the focus, but they also provide the sample for pathologic examination. However, the abuse of LEEP or CKC currently exists. Some doctors regard LEEP as the gold standard treatment of cervical diseases whether the disease is a pathologic phenomenon or not, and whatever the type of cervical disease is, LEEP is resorted to. For some patients with cervical columnar ectopy of a larger cervical area or CIN I, LEEP is also adopted. Diagnostic conization is mainly suitable for cases where the colposcope cannot see the border of cervical lesions, or the main focus is located inside the canal of the uterine cervix [27], exceeding the colposcopic range; cytological or histological evidence proves that cervical gland epithelium has a precancerous lesion or carcinomatous change. Pathologic results of samples from endocervical curettage report, abnormal or unsure; cytological results, colposcopic results and living biopsy results are inconsistent; the cytological, colposcopic and living biopsy results are suspicious cervical invasive cancer; the cervical biopsy pathologic diagnosis is CIN; however, cervical micro-invasive cancer or invasive cancer can not be excluded definitely. In comparison with diagnostic conization, therapeutic conization is widely used in the treatment of cervical diseases, with advantages such as short surgical duration, rapid recovery, little pain, low expense, and readily accepted by patients. Today, the comparative research on cervical conization and hysterectomy for CIN III finds that there is no statistical difference in prognosis between these two surgical methods [28, 29]. Cervical conization is a reasonable selection for young patients with cervical CIN III, cervical squamous cell carcinoma in situ and Stage IA cervical invasive cancer especially if they want children.

For older patients, those who have finished child

bearing and patients with incomplete incisional margins in cervical conization samples with CIN III together with benign diseases such as uterine myoma or uterine prolapse, cervical adenocarcinoma in situ, early micro-invasive carcinoma, conization can be performed with the hysterectomy [30].

In summary, overtreatment of cervical lesions can be eliminated or at least reduced by mastering the interventional indications for cervical lesions, and by selecting the therapeutic measures for cervical lesions, which are more compliant with the principles of normalization, individualization, humanization and minimal invasion advocated in the current treatment of gynecological diseases.

Acknowledgments

The authors are thankful for financial support from the National Natural Science Foundation of China (30973187), Ministry of Education for the young teacher foundation of China (20110061120084) and Jilin Science and Technology Funds (20080134 and 200905146).

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