

Factors Leading to Cervical Erosion and Modern Clinical Diagnosis

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Abstract: "Ectopia" (less commonly known as "pseudoerosion") is a modern term that refers to the protrusion of the mucous membrane outside the cervical canal. Ectopia is often called erosion, which is not entirely correct. In this article, we will explain how ectopia differs from erosion and which of these conditions should be treated.

Keywords: erosion, causes, types, symptoms, diagnosis, treatment, prognosis.

Entrance: The cervix is the lower part of the uterus, measuring an average of 3-4 centimeters in length. The main function of the cervix is to connect the vagina and the uterine cavity through the cervical canal, which is filled with mucus. It has two exits: the outer one enters the vagina, and the inner one enters the uterine cavity.

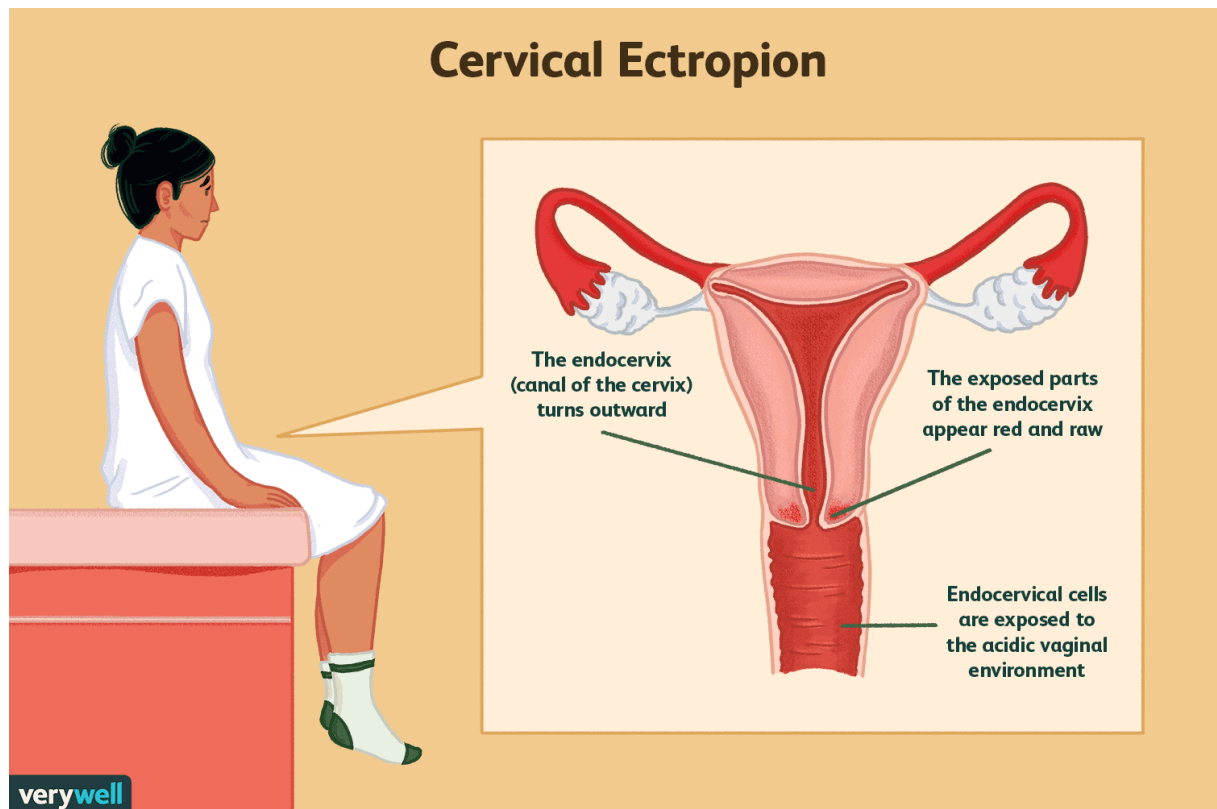
During menstruation, blood and mucus flow freely through the cervical canal. During ovulation, it opens slightly to allow sperm to enter the uterus. During pregnancy, the cervical mucus thickens, sealing the entrance to the uterus for added protection for the fetus. When labor begins, the mucus plug is expelled, the cervix opens, and the baby leaves the uterine cavity through the dilated cervical canal.

The outer part of the cervix, where it opens into the vagina, is lined with stratified squamous epithelium, a soft, skin-like mucous membrane. It is resistant to the acidic environment of the vagina and is usually denser in structure. However, at the outer entrance to the cervical canal, the epithelium changes - this border area is called the transformation zone.

From the inside, in the cervical canal, the cervix is lined with another membrane - a single-layer cylindrical epithelium, which produces active alkaline mucus. It is not intended for contact with the acidic environment of the vagina and is much easier to damage.

Cervical erosion is often called when the epithelium moves from the cervical canal into the vaginal part of the cervix. However, the term "erosion" is considered outdated and is not entirely correct. Instead, modern experts use another term - "pseudoerosion" or "ectopia".

Violation of the integrity of the squamous epithelium of the cervix is very rare. Most often, specialists encounter epithelial replacement. In this case, instead of "erosion", modern guidelines recommend using another term - "pseudo-erosion" or "ectopia". It comes from the ancient Greek word ektopos ("displaced") and better describes the essence of the situation.



Cervical ectopia or pseudoerosion is the displacement of columnar epithelium outside the cervical canal into the squamous epithelium of the cervix.

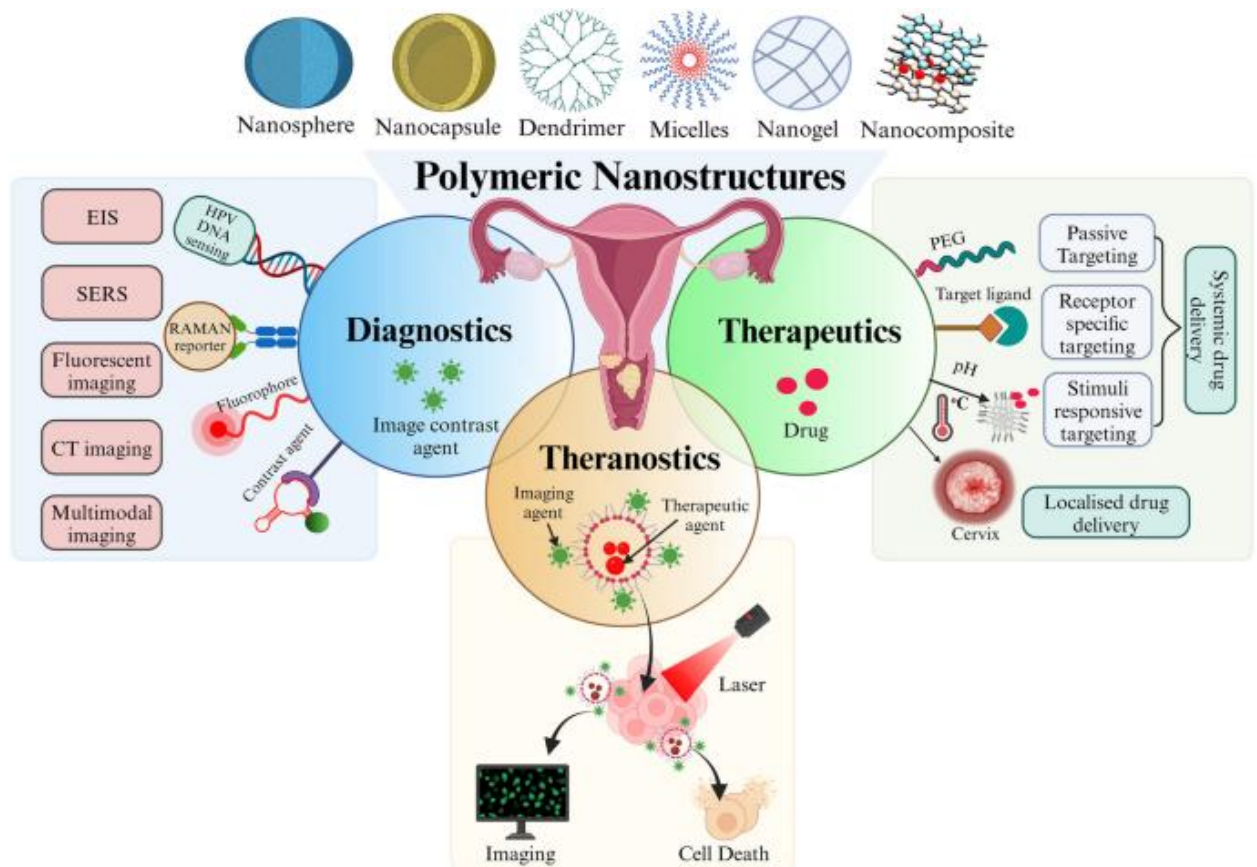
Ectropion is a complex form of cervical ectopia. It manifests itself as a significant displacement ("eversion") of the inner epithelium from the cervical canal. Foreign sources often use only the term "ectropion", without distinguishing ectopia as a separate condition.

Causes of cervical erosion

True erosion of the cervix develops due to chemical or mechanical damage. Various gynecological operations, such as curettage and abortion, can lead to damage to the mucous membrane. Also, the improper use of certain contraceptives and personal hygiene products, as well as various infectious diseases, can lead to true erosion.

Causes of true cervical erosion:

- a. inflammation of the cervix and cervical canal - can develop as a result of infection or gynecological surgery;
- b. an infectious lesion of the vagina, such as gonorrhea;
- c. chemical injuries - after medical procedures or when treating the vagina independently with any means;
- d. mechanical injuries - after operations on the cervix and cervical canal, rough sex. Rare female contraceptives, such as the cervical cap or vaginal diaphragm, can also cause injuries.
- e. Pseudoerosion or ectopia is a normal condition in women of reproductive age. The fact is that the cylindrical epithelium of the cervical canal is sensitive to the female sex hormones estrogens. Under their influence, it can protrude slightly beyond the canal.



Factors that contribute to the development of ectopia:

puberty in girls - during puberty, the level of sex hormones increases;
 use of hormonal medications, such as birth control pills with estrogen;
 pregnancy - the concentration of estrogens increases during pregnancy.

Ectopia can also be congenital. Normally, during the development of a female fetus, the cervical epithelium is located outside the cervix. With the development of the reproductive system, it moves into the cervical canal, and the cervix is covered with stratified squamous epithelium. However, in some girls, under the influence of maternal estrogens, "remnants" of the cervical membrane remain on the surface of the cervix.

Ectropion (congenital) often develops for the same reasons as ectopia. However, in adulthood, ectropion can only occur due to serious trauma to the cervix or cervical canal. For example, during gynecological surgery, premature or rapid birth, when the cervix is not sufficiently dilated.

Types of cervical erosion

Cervical erosion, as mentioned above, is divided into true and false - pseudo-erosion (ectopia). In addition, there is a third, more complex form of ectopia - ectropion.

Cervical erosion by shape:

true erosion - damage to the squamous epithelium of the cervix;

pseudoerosion, ectopia - displacement of the columnar epithelium outside the cervical canal with displacement of the normal epithelium of the cervix;

Ectropion - protrusion of the columnar epithelium out of the cervical canal.

According to the form of occurrence, true erosion is only acquired. Ectopia and ectropion of the cervix can be congenital or acquired.

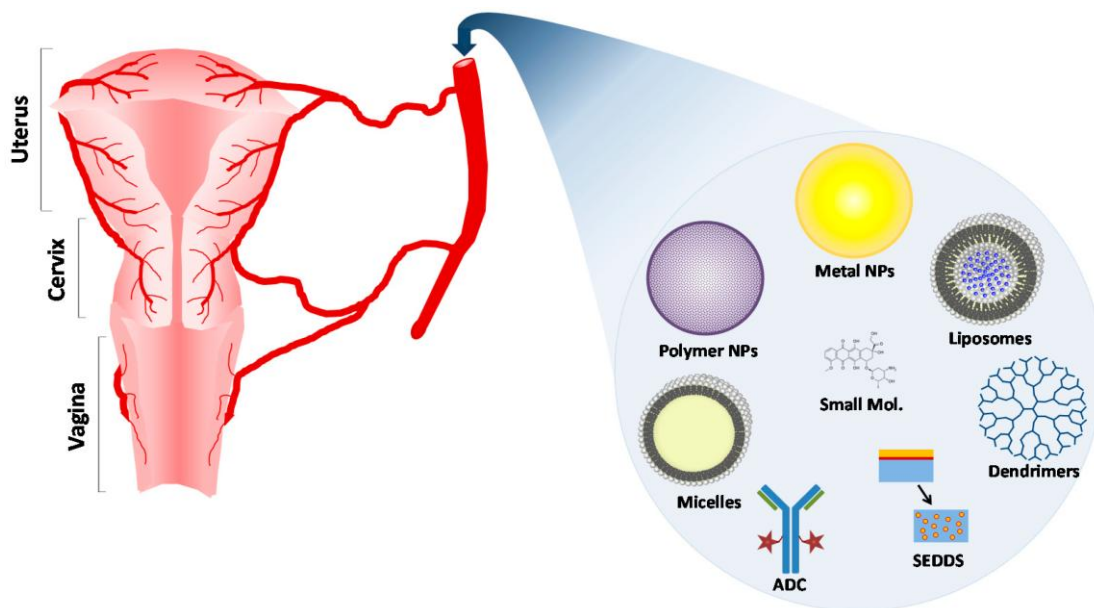
Ectropion and congenital ectropion are not considered pathologies.

In addition, all types of cervical erosion (true, ectopia, and ectropion) can be complicated or uncomplicated.

Symptoms of cervical erosion

True erosion can manifest as deep pain in the vagina, as well as atypical discharge mixed with blood and discomfort during sex. If an infection occurs, its characteristic symptoms appear, such as itching, burning and an unpleasant odor.

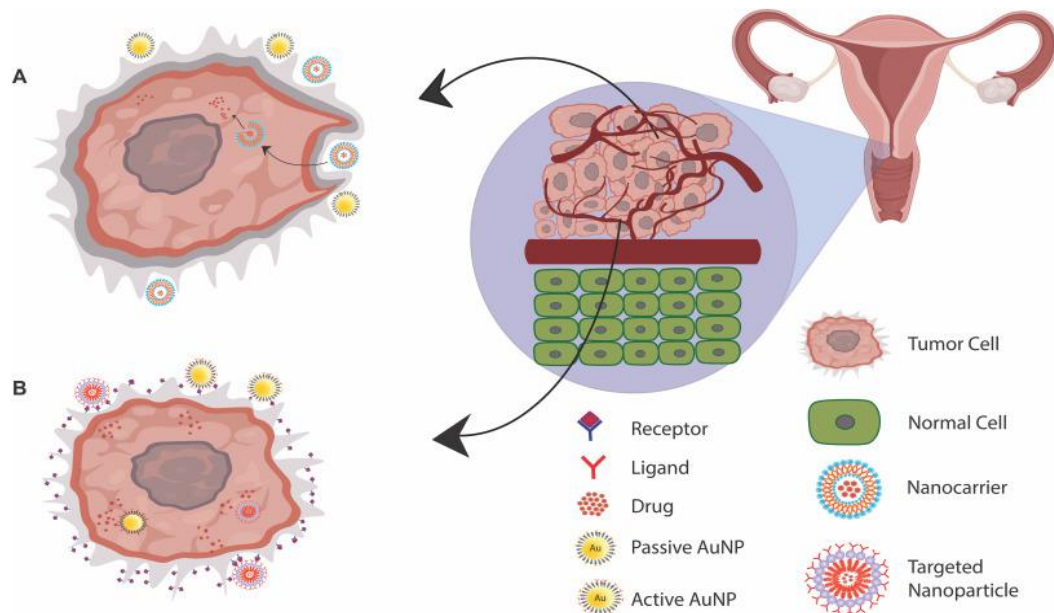
As a rule, when examining a patient with true erosion, the doctor notices changes in the cervix: the mucous membrane around the cervical canal becomes red and may bleed. If the lesion is large enough, true erosion can be combined with inflammation of the cervix and cervical canal.



Possible signs of true erosion:

- an unusually large amount of mucous discharge that is white, milky, or green;
- an admixture of blood in vaginal discharge - it will have a pinkish tint;
- deep pain or discomfort in the vagina;
- dyspareunia - pain during vaginal intercourse;
- discomfort or pain when inserting a tampon;
- sometimes - pain in the lower abdomen or lower back;
- itching, burning, unpleasant odor and atypical discharge - when infection occurs.

In most cases, cervical ectopia does not manifest itself in any way. It is often detected by a gynecologist after examining the cervix, and the diagnosis comes as a surprise to the woman. The ectopic area of the mucous membrane becomes especially noticeable when stained with Lugol's iodine solution - it becomes lighter and stands out against the background of normal cervical tissue.



Possible symptoms of cervical ectopia:

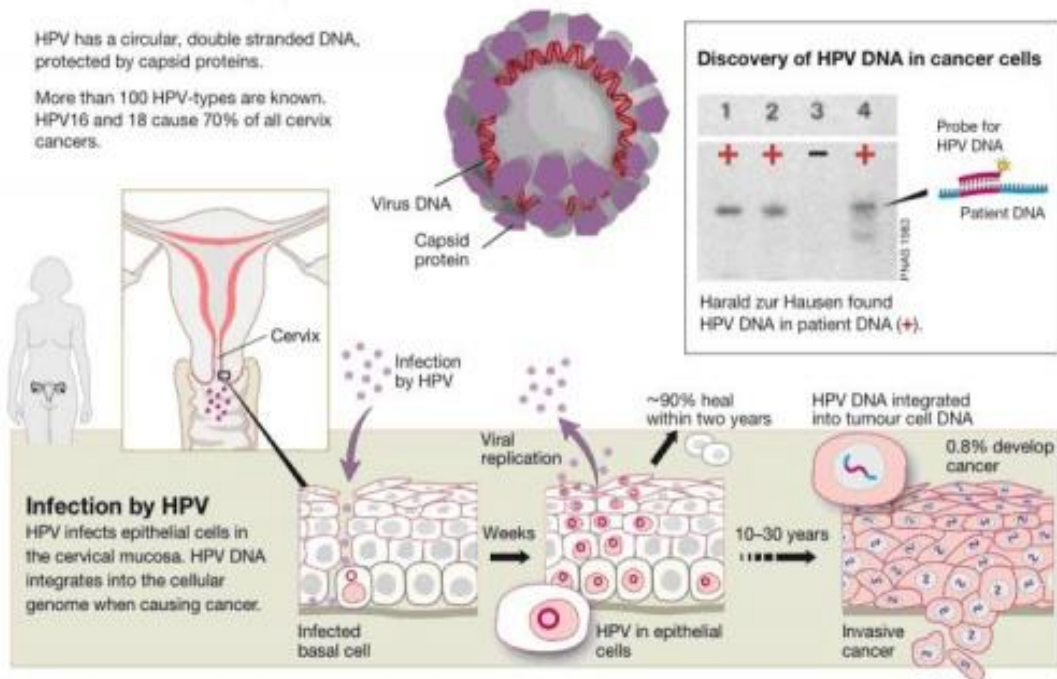
- abundant intermenstrual mucous discharge - associated with an increase in the area of the cylindrical endometrium, which produces cervical mucus;
- discomfort during sex when the penis is inserted deeply into the vagina;
- small bloody discharge after sexual intercourse - may occur because the columnar epithelium has more blood vessels, is thinner and can be easily damaged;
- minor vaginal bleeding during pregnancy;
- pain in the lower abdomen, lower back (sometimes).

Symptoms of ectropion may vary depending on the type of disease. In most cases, congenital ectropion does not manifest itself in any way or its symptoms are similar to ectopia. Acquired ectropion always develops against the background of mechanical damage to the cervical canal. Its manifestations may be more pronounced.

HPV – human papilloma virus

HPV has a circular, double stranded DNA, protected by capsid proteins.

More than 100 HPV-types are known. HPV16 and 18 cause 70% of all cervix cancers.



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Possible symptoms of ectropion:

- a. copious amounts of mucous discharge;
- b. discomfort during sexual intercourse;
- c. if inflammation or infection occurs - pain, itching, burning, atypical vaginal discharge, unpleasant odor;
- d. discomfort in the lower abdomen for no apparent reason;
- e. irregular menstrual cycle (sometimes, in a congenital form).
- f. Complications of cervical erosion

Complications and their development depend on the type of cervical erosion. However, it is important to note that neither condition is considered oncogenic or precancerous. Erosion, ectopia, and ectropion are benign changes.

Complications of true erosion

True erosion can be complicated by inflammation of the tissues of the vagina (vaginitis), cervix (colpitis) and cervical canal (cervicitis). In this case, the patient is disturbed by vaginal pain, severe discomfort during intercourse and atypical or abundant mucous discharge.

Also, true erosion can be complicated by various infectious diseases - this is due to damage to the natural epithelium, which protects the cervical tissues and cervical canal from the penetration of pathogens.

Complications of cervical ectopia

Cervical ectopia also makes the reproductive system more vulnerable to various infections. This is because the normal vaginal environment is acidic.

Normally, lactic acid bacteria and fungi live in a woman's vagina. They produce lactic acid, which serves as a kind of barrier to various foreign microorganisms.

If there are few pathogenic or opportunistic bacteria and fungi, they cannot survive in the acidic environment of the vagina. This means that they do not have time to reach the cervical canal, penetrate the uterine cavity, and then spread to the uterine mucosa, fallopian tubes, and ovaries.

However, the lining of the cervical canal—the columnar epithelium—produces alkaline mucus and is normally adapted to an alkaline environment, rather than an acidic one. The displacement of the cervical mucus beyond the boundaries of the cervical canal makes it alkaline to enter—and therefore “opens the door” for many pathogens to enter the cervix.

The most common sexually transmitted infections that can be accompanied by erosion and ectopia include, for example, gonorrhea, trichomoniasis, and ureaplasmosis.

Inflammation in ectopy can be caused by damage to the cervical columnar epithelium or infection.

Complications of ectropion

Ectropion, a more severe form of ectropion, can cause the same complications as regular ectropion. There is one exception: some women with the congenital form of ectropion experience irregular menstruation.

Complications can also occur during the treatment of ectopy and ectropion. In place of the previous cervical epithelium, new formations appear - Nabothian cysts.

The mechanism of the formation of such cysts is associated with the lack of ducts for the glands in the growing flat epithelium. The columnar epithelium, covered with squamous, continues to produce mucus, but it does not find an outlet and accumulates in small cysts.

Such neoplasms are considered benign and do not require treatment, but if infected, they can be a source of chronic inflammation of the cervix.

Diagnosis of cervical erosion

Diagnosis of cervical erosion and ectopia is performed by an obstetrician-gynecologist.

Since erosion and ectopia are almost asymptomatic in most cases, the patient may not have any complaints about his health.

First of all, the doctor will, of course, conduct a "basic" survey to compile an anamnesis. Ask about previous gynecological diseases, operations, pregnancies, childbirth and abortions - surgical, medical, spontaneous (miscarriages). Sometimes the doctor is also interested in the patient's body mass index - for this he may ask about his height and weight.

Information about menstrual cycles can give the doctor an idea of the likelihood of a pathology of the reproductive system, so before visiting a specialist, it is necessary to clearly answer three main questions: is the menstrual cycle regular, how long does one cycle last, and what day of the cycle is it at the time of the visit.

Hereditary pathologies - family oncological diseases and gynecological diseases in close relatives (mother, sisters) - allow the doctor to narrow the scope of diagnosis or become a reason for a more detailed examination.

Conclusion : In addition, many drugs affect the state of the reproductive system. It is necessary to list all medications that a woman takes orally or applies topically (ointments, solutions, gels, etc.). Antibiotics and hormonal drugs are of particular importance.

If you have any additional complaints, such as heavy vaginal discharge, discomfort, pain, or other unusual symptoms, it is also important to report them to your doctor.

After collecting anamnesis, the doctor will suggest an examination of the vagina and cervix in the gynecological department. Before visiting the doctor, you can wash your external genitals, but you cannot douche the vagina (douche) - such a procedure can "blur" the clinical picture of various pathologies and confuse the specialist.

When examining the vagina with a speculum (gynecological speculum), the doctor may notice changes in the mucous membrane on the surface of the cervix. These may appear as varying degrees of redness (from barely noticeable to bright).

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