

Original Article: Uterus Cancer



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ABSTRACT

The uterus is a hollow and pear-shaped organ in the pelvic area, located between the bladder and the rectum and covered by a tissue called the endometrium. The endometrium is made every month in the uterus, which is removed from the body during menstruation. Also, there are two tubes on both sides of the uterus, which are known as fallopian tubes. The task of these tubes is to release eggs and guide them into the uterus for fertilization. In the cervix, if there are abnormal cells that grow abnormally, uterine cancer occurs. This cancer can be treated if detected early. Ultrasound is one of the common methods for imaging the internal parts of the body. Among the applications of this treatment method, we can mention the diagnosis of uterine cancer. Cervical cancer is one of the most curable cancers. The necessary condition for the treatment of this cancer is to detect it on time and in the early stages. According to the report of the American Cancer Society, the higher the screening rate with pap smear tests, the lower the mortality from cervical cancer. Regular Pap smear tests are one of the most important and effective prevention methods to detect cells at risk of becoming cancerous. Getting the HPV vaccine and doing regular pap smear screenings can help you reduce the risk of cervical cancer.

Introduction

The uterus is the place where the child grows during pregnancy. The uterus is the size and shape of a hollow and inverted pear [1-3]. It is part of the female reproductive system and is located in the lower abdomen, between the bladder and the rectum, and is connected to the vagina by the cervix. On both sides of the uterus

are the ovaries, which contain eggs [4-6]. The ovaries are connected to the uterus by the fallopian tubes.

The uterus has two layers

- Myometrium is the outer layer of muscle tissue and forms most of the uterus [7].
- Endometrium is the inner layer or inner lining [8].

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The cervix is the narrow and lower part of the uterus, which is located in the entrance area of the vagina. Almost all cases of cervical cancer are caused by the human papillomavirus (HPV). These cancers are often caused by sexually transmitted infections. Estimates show that 14 million new infections occur every year [9].

The components of the uterus are

1. **Fundus:** It is located above the uterus, above the entry point of the fallopian tubes.
2. **Body:** The usual place for blastocyst implantation [10].
3. **Cervix:** The lower part of the uterus that connects it to the vagina. This part is structurally and functionally different from the rest of the uterus [11].

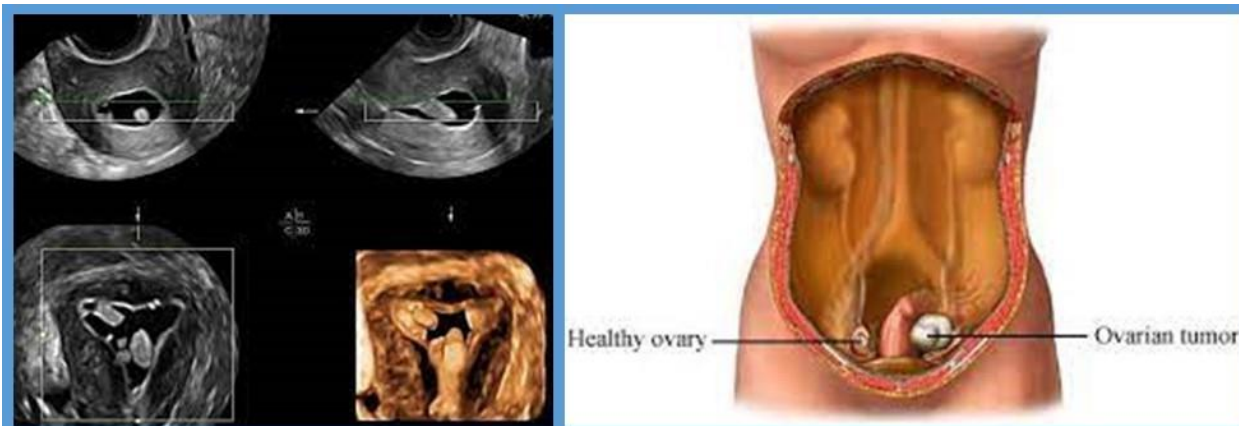


Figure 1. Normal, Un-normal and anatomical position of the uterus

Abnormal and anatomical position of the uterus

In some people, the uterus may not be in the inter flex and motor state. The three common modes are:

- Too much ant flexed;
- Cross and reverse;
- Retroflexed and reversed.

These abnormal arrangements do not inherently cause any medical problems. However, the retrograde uterus lies directly above the vagina. Therefore, in cases of increased abdominal pressure [12], the probability of the uterus falling into the vagina is higher. Uterine prolapse

Normal and anatomical position of the uterus

The exact anatomical location of the uterus varies with the degree of bladder distension. In a normal adult uterus, it can be described as contracted in relation to the vagina and in ante flex in relation to the cervix:

- **Anteverted:** Turning forward towards the anterior surface of the body.
- **Ante flexed:** Bent, toward the anterior surface of the body.

Therefore, the uterus is usually located immediately behind the bladder and in front of the rectum. Sagittal section of the female pelvis showing the anatomical relationships of the vagina (Figure 1).

is especially common in those with a history of pelvic floor injury and may cause many problems for women [13-15].

What is uterine cancer?

Cervical cancer occurs when cervical cells become abnormal and multiply rapidly. The cervix is a part of the female body that is located between the vagina and the uterus. Failure to diagnose or treat this cancer on time will definitely threaten a person's life [16-18]. Cervical cancer used to be the leading cause of death for American women, but it is now the most preventable female cancer. Routine Pap smear tests, HPV vaccines and HPV testing have

made it easier to prevent cervical cancer. Knowing the symptoms of cervical cancer helps in early diagnosis and timely treatment.

Advanced cervical cancer

Advanced cervical cancer means that the cancer that started in the cervix (cervix) has spread to another part of the body. or the cancer has recurred after treatment. Advanced cervical cancer has spread to another area of the body [19-21].

Symptoms of advanced cervical cancer

The most common places for cervical cancer to spread are lymph nodes, liver, lungs and bones. Symptoms can include fatigue, pain, and vomiting [22-25].

Treatment of advanced cervical cancer

Regarding the various treatments for advanced cervical cancer, including chemotherapy, radiotherapy, targeted drugs and surgery, when you have advanced cervical cancer, seek professional advice to help you deal with emotional, practical and physical issues [26-28].

Different types of uterine cancer

There are different types of cervical cancer that affect different types of cells in the cervix. The most common types are cervical squamous cell cancer, adenocarcinoma and adenosquamous carcinoma. The specialist in this field of treatment together with the professional team will find out what type of cervical cancer you have by performing various tests [2-31].

- Squamous cell cervical cancer;
- Adenocarcinoma;
- Adenosquamous carcinoma;
- Cervical small cell cancer;
- Mucosal tumors;
- Lymphoma and sarcoma [32].

Squamous cell cervical cancer

Cervical squamous cell cancer is the most common type of cervical cancer. About 7 to 8 out of 10 cases (70 to 80 percent) of cervical cancer are of this type. Squamous cells are thin, smooth, skin-like cells that cover the surface of the cervix. Cancer often develops where the outer surface of the cervix joins the cervical canal [33-35].

Adenocarcinoma

Adenocarcinoma is less common than squamous cell carcinoma. About 2 out of 10 (20%) cervical cancers are adenocarcinomas [36]. Cervical adenocarcinoma starts from the gland cells inside the cervical canal. These cells produce mucus, a sticky fluid. The cervix keeps the uterus, ovaries, and fallopian tubes healthy by protecting them from bacteria and infections. Glandular cells are scattered along the lining of the narrow duct that leads from the cervix to the uterus. This passage is called the cervical canal [37-39]. The "Adeno" part of adenocarcinoma refers to the glands and "Carcinoma" refers to cancer in the cells that line the tissues. This type of cancer is more difficult to find through cervical screening because it develops inside the cervical canal. It is important to be aware of the symptoms, so you can recognize them early and then start treatment quickly [40].

Aden squamous carcinoma

About 5 to 6 out of 100 (5 to 6%) cervical cancers are adenosquamous carcinoma. Adenosquamous carcinoma includes cancer cells from cervical squamous cell carcinoma and adenocarcinoma of some squamous cells and some glandular cells [41-43].

Lymphoma and sarcoma

Other types of cancer, including sarcoma and lymphoma, can occur in the cervix. These are less common types of cervical cancer. It should be noted that sarcomas and lymphomas are

treated differently from other types of cervical cancer [44-46]. Therefore, dealing with the diagnosis of any type of cervical cancer can be difficult. If you have a more quantitative type, it may also be more difficult to connect with others who understand or receive appropriate support [47-49].

Endometrial cancer

Uterine cancers are mainly formed in the cells lining the uterine wall (endometrial cells). For this reason, most uterine cancers are also called endometrial cancer.

Uterine sarcoma

Uterine cancer in rare cases may form in the muscles surrounding the uterus. This type of cancer is called uterine sarcoma and may be different from endometrial cancer in terms of treatment method. The following article uses the term "Uterine cancer" and mainly contains information related to endometrial cancer. Uterine cancer is different from other cancers of the female reproductive system, such as ovarian cancer or cervical cancer [50].

How many stages does uterine cancer have?

The stage of the cancer gives you enough information about its size and spread. Here, type means the type of cell from which the cancer started. The grade refers to how abnormal the cells look under the microscope. Your doctor will use all of this information to help decide what treatment you need [51].

➤ Step 1

At this stage, the cancer is only in the cervix. Surgery is the main treatment. Some people also need chemotherapy [52].

➤ Step 2

At this stage, the cancer has spread outside the cervix to surrounding tissues. The main treatments are a combination of chemotherapy

and radiation therapy and sometimes surgery [53].

➤ Step 3

At this stage, the cancer has spread to surrounding structures or to the lymph nodes in the pelvis or abdomen. Treatment is usually a combination of chemotherapy and radiotherapy (chemotherapy) [54].

➤ Step 4

Stage 4 means the cancer has spread to the bladder or back passage (rectum) or beyond. The main treatments include chemotherapy with cancer-targeted drugs, surgery, radiotherapy, or symptom control.

Things you need to know about uterine cancer

- The chances of survival of patients with uterine cancer vary depending on the stage of the cancer.
- If uterine cancer is diagnosed at stage 1, the outlook is good and 95% of patients survive for at least another 5 years. Many women with stage 1 uterine cancer are treated.
- If the disease is diagnosed in stage 3, you have a 40% chance of surviving for the next five years (Figure 2) [55].
- Out of every 4 cases of uterine cancer, almost 1 case is diagnosed in the 4th stage of cancer. At this stage, people have a 15% chance of surviving for at least another five years.

Cervical cancer symptoms

Early cervical cancers and precancerous cell changes usually have no symptoms. Not everyone with cervical cancer has symptoms, which is why it's important to get regular cervical screening. The most common symptoms of cervical cancer are:

- Unusual vaginal bleeding;
- Pain or discomfort during sex [56];
- Vaginal discharge;

- Pain in the area between the pelvic bones.

There are many other conditions that cause these symptoms. Most of them are very common compared to cervical cancer.

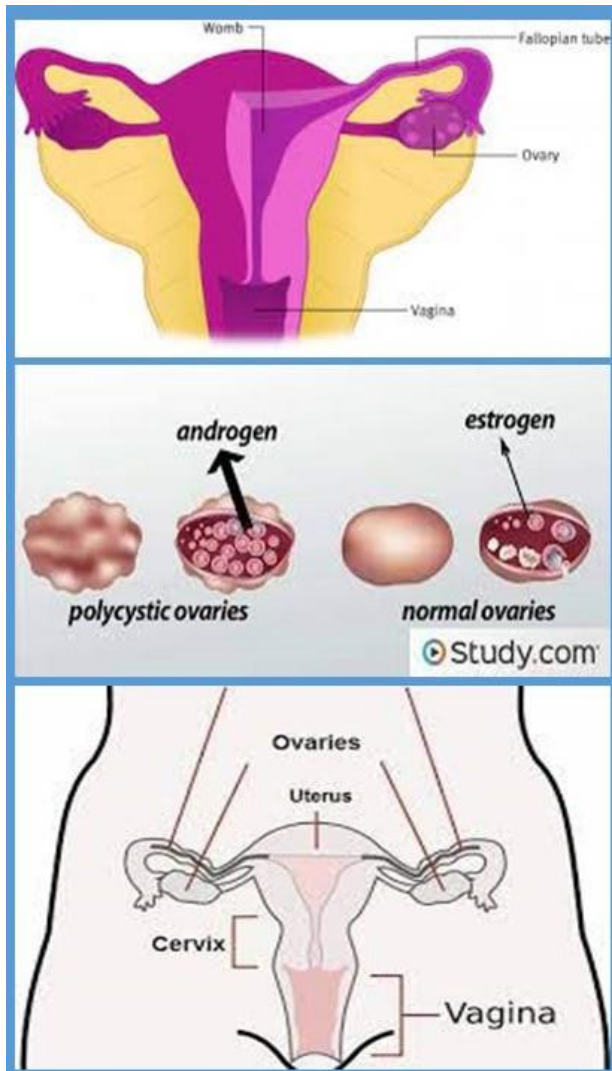


Figure 2. Cervical cancer symptoms

Bleeding

The most common symptom of cervical cancer is vaginal bleeding at times other than your period.

You may have bleeding:

- Between courses;
- During or after sex;
- Any time after menopause;
- Bleeding after sex.

Bleeding after sex is not necessarily a sign of cervical cancer. This is often caused by

something called cervical erosion or ectropion. Cervical erosion means that cells that normally line the inside of the cervical canal (glandular cells) can be seen on the outer surface of the cervix is common:

- In young girls;
- During pregnancy.

In women who use birth control pills. This is due to changes in hormone levels. Sex can cause bleeding. The important point is that: Cervical erosion has nothing to do with cancer. It is harmless and often goes away on its own or with a change in birth control. Sometimes it may require treatment. Your doctor will do this by freezing the area under local anesthesia (cryotherapy). Since cervical cancer can also cause bleeding after sex, it's always wise to have any unusual bleeding checked by a doctor [57].

➤ Discomfort or pain during sex

Some women feel discomfort or pain during sex. This disease is called dyspareunia. There are many other conditions that can cause this symptom. But if you have this problem, you should see a doctor immediately.

Other symptoms of cervical cancer

Some women also have:

- Vaginal secretions that have an unpleasant smell.
- Pain in the area between the pelvic bones [58].

Symptoms of advanced uterine cancer

Symptoms of malignant uterine cancer can also be bleeding, and discharge from the vagina, as early signs of uterine cancer. This is despite the fact that more severe symptoms appear in the later stages of cancer. Symptoms of advanced cervical cancer include:

- Back or hip pain;
- Painful urination;
- Having trouble urinating or defecating;
- Urinating more than normal;

- Swelling of one or both legs;
- Fatigue;
- Anorexia;
- Weight loss.

It should be noted that all women should be regularly screened for cervical cancer in accordance with national guidelines. In addition, if you experience the above symptoms, be sure to talk to your doctor about cervical cancer screening. Also, all the mentioned cases are a suitable answer to this important question among women, what are the symptoms of uterine cancer? When is it necessary to see a gynecologist? If you experience vaginal bleeding during menopause or notice a change in the normal course of your period, see a gynecologist. Uterine cancer is the only cause of 1 out of 10 cases of vaginal bleeding during menopause; As a result, if you see the mentioned symptoms, there is a small chance that you have uterine cancer. However, it is important to look for the cause if you have abnormal vaginal bleeding. Several factors, including the following, may contribute to this bleeding [59].

Cause of uterine cancer

Estrogen hormone imbalance

One of the most important things that increases the risk of uterine cancer is hormonal imbalance. Especially the high level of the hormone called estrogen increases the risk of this cancer even more.

Long-term use of tamoxifen

Obesity, diabetes, and hormone replacement therapy (HRT) can be mentioned among the factors that lead to estrogen imbalance in the body. Long-term use of the breast cancer drug tamoxifen also increases the risk of uterine cancer to some extent. It is not always possible to prevent uterine cancer; However, things like having a balanced weight and long-term use of some contraceptive methods are able to reduce the possibility of contracting this disease [60].

Human papilloma virus (HPV)

The human papilloma virus leads to the appearance of several types of cervical cancer. Certain strains of the human papilloma virus (HPV) cause the normal cells of the cervix to become malignant and abnormal. These cells become cancerous after years and even decades.

Taking diethyl acetylsalicylic acid (DES)

Those women whose mothers used diethylacetylbestrol (DES) during pregnancy are at risk of developing cervical cancer. This drug is a type of estrogen and doctors believed that this drug can prevent miscarriage. On the other hand, the relationship of this drug with the formation of abnormal cells in the cervix and vagina has been proven. This drug has been collected from the American market since the 1970s. You can talk to your mother about taking or not taking this medicine. Currently, there is no test to determine whether or not to use DES.

Risk factors leading to cervical cancer

Anything that increases the risk of developing a disease is called a risk factor. However, note that having one or more risk factors does not mean having cervical cancer (Figure 3).

➤ Human papilloma virus (HPV)

It is the main cause of cervical cancer. Vaccines are available to prevent HPV.

➤ Cigarettes

It increases the risk of cervical cancer and makes it more difficult to treat abnormal cells in the cervix.

➤ Age

Cervical cancer is more common in younger women. More than half of all cervical cancer cases in the UK are diagnosed in women under 45 each year.

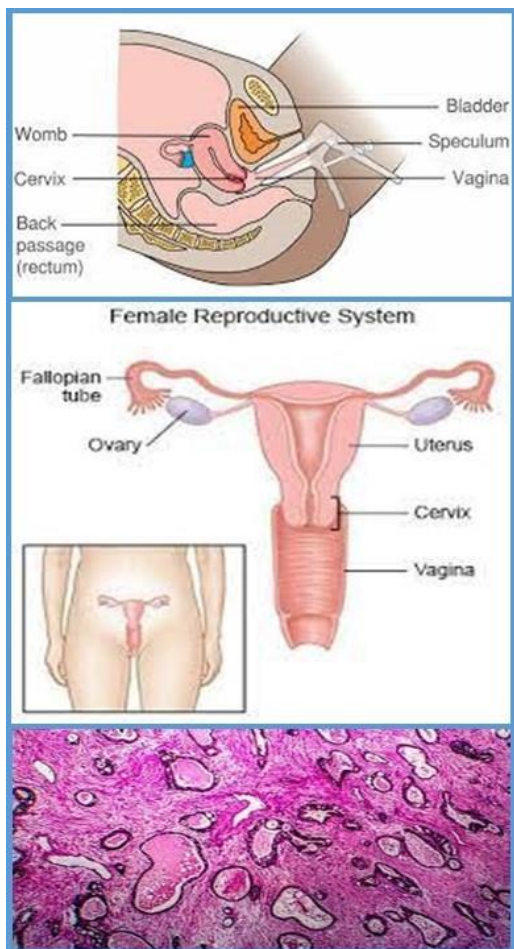


Figure 3. Cervical cancer

➤ **Other sexually transmitted infections**

The risk of cervical cancer increases in women who have sexually transmitted infections (STIs) along with HPV. Women with HPV and chlamydia (pronounced klah-mid-ee-ah) may be at increased risk for cervical cancer.

➤ **Birth control pills**

1 in 10 cases of cervical cancer is linked to the use of birth control pills. Taking this pill for more than 5 years increases the risk of cervical cancer. As soon as you stop taking it, the increased risk begins to decrease. After 10 years the risk is the same as if you had never taken it. This pill can also slightly increase the risk of breast cancer. But you need to know that taking the pill can

help reduce the risk of uterine and ovarian cancer.

➤ **Pregnancy and childbirth**

Women who have had children have a higher risk of developing cervical cancer than those who have never had children. Having a first baby before the age of 17 has a higher risk compared to women who had their first baby after the age of 25. The reasons for this are unclear.

➤ **Family history**

If your mother, sister, or daughter has cervical cancer, your risk of developing cervical cancer increases. We do not know whether this is related to faulty genes or whether it is due to common factors such as smoking. How is cervical cancer diagnosed? In case of abnormal vaginal bleeding, it is necessary to talk to a doctor and gynecologist. Despite the low probability of getting uterine cancer, it is better to be sure of your health. Your doctor will probably examine your pelvic area (including the vagina, uterus, ovaries, etc.) and ask about the symptoms, when they occur, and how often they occur. You may be referred to a gynecologist for further tests. Below are some examples of these tests.

Transvaginal ultrasound (TVU)

Diagnosing uterine cancer with transvaginal ultrasound is another test that you may have to do. TVU is a type of ultrasound that uses a small, rod-shaped scanner. This rod-shaped scanner is inserted directly into the vagina to provide a precise image. This may be a little uncomfortable, but it will not cause pain.

➤ **TVU**

Checks changes in the thickness of the lining of the uterus. These changes may be caused by the presence of cancer cells.

➤ Biopsy

If changes in the thickness of the lining of the uterus are detected by transvaginal ultrasound, tissue sampling is usually performed to ensure the diagnosis of this type of uterine cancer. In a biopsy, a small sample of the cells covering the uterus (endoderm) is removed, and then the sample is sent to the laboratory and checked for the presence of cancer cells.

Types of cervical cancer biopsy methods Here are the types of biopsy methods

➤ Aspiration biopsy

In this procedure, a small flexible tube is inserted through the vagina into the uterus and then a small sample of uterine cells is collected by suction.

➤ Hysteroscopy

This method allows the gynecologist to observe the lining of the uterus and take samples from it using a small telescope called a hysteroscopy that enters the uterus through the vaginal canal. In some cases, hysteroscopy may be used before dilatation and curettage. Dilatation and curettage is a light surgery performed under general anesthesia, during which some of the tissue covering the uterus is removed from the body. Then the desired tissue is sent to the laboratory for further tests.

Blood test

A blood test may also help diagnose uterine cancer in some cases; Because some cancerous tumors release certain chemicals called cancer markers into the blood. These unique chemicals are detectable in blood tests. However, blood tests are not very reliable. The presence of these chemicals does not necessarily mean that a person has uterine cancer. Also, the desired substances are not found in the blood of some people with uterine cancer.

Necessary tests after diagnosis of uterine cancer

If you are diagnosed with uterine cancer, more tests will likely be needed to determine the stage of the cancer. Cancer classification helps doctors determine the size of the cancer, how far it has spread, and the best possible treatment.

These tests may include

- **Chest X-ray:** This test determines whether the cancer has spread to the lungs.
- **Magnetic resonance imaging (MRI):** In this method, magnetic fields are used to create an accurate image of the internal parts of the body. With the help of MRI, you can see the spread of cancer in the body.
- **More complementary blood tests.** These tests are performed to find out the general state of health of the patient's body and the level of function of some body organs.

Uterine cancer treatment solution

One of the questions that are frequently asked by experts in this field is whether there is a cure for uterine cancer. It should be said in this regard that due to the huge progress that we have witnessed in the field of medical science and treatment of diseases, with the help of the following treatment methods, the complications of uterine cancer can be reduced to a great extent and we can also see the complete recovery of patients. The main treatment for uterine cancer is to remove the uterus (hysterectomy), along with the ovaries and fallopian tubes. Based on the stage and extent of cancer progression and in order to kill the remaining cancer cells, radiation therapy or chemotherapy may be used further. Treatment of women who have not yet gone through menopause. In case of hysterectomy, pregnancy will no longer be possible. Younger women who

have not yet gone through menopause may not welcome this procedure if they wish to have children. In this case, under very special conditions, cancer treatment may be successful through hormone therapy.

Treatment of advanced cancer

In advanced stages of cancer, heavier treatments are usually needed. Chemotherapy is usually used in these stages. Advanced cancers may not be completely curable. However, treatments are performed to improve the patient's condition and make cancer retreat. These treatments make the sick person able to use and enjoy his life to the fullest. Even if there is no chance of a cure, surgery may be able to remove as much of the cancerous tissue as possible. Radiation therapy, chemotherapy and hormone therapy can reduce the severity of symptoms by pushing back cancer or slowing its growth.

Stages of uterine cancer surgery

Cervical cancer surgery has different stages, which we mention below:

➤ Surgery in the first stage of cancer

If you have stage 1 cancer, you may need to have a hysterectomy. In addition to removing the uterus in this surgery, the fallopian tubes and ovaries are also removed during a procedure called bilateral salpingo-oophorectomy (BSO). The surgeon may also take samples from the lymph nodes in the pelvic and abdominal areas, as well as other nearby body parts. These samples are sent to the laboratory to determine the spread of cancer. The most common hysterectomy technique is to make a large incision in the middle of the abdomen and remove the uterus. In some situations, it may be possible to use the laparoscopic hysterectomy method. This method is also known as keyhole hysterectomy. In this surgical method, it is necessary to make small cuts on the body to use a special type of telescope (laparoscope) and

other surgical tools. In this way, the surgeon is able to see the inside of your body and remove the uterus through the vagina only by making small incisions.

- You will probably be able to leave the hospital after three to five days. This time is shorter if the keyhole surgery method is used. However, you will need several weeks to fully recover.
- After surgery, it is necessary to walk as soon as possible. This work is very important; Even if you must stay in bed, you should do regular leg movements to help with circulation and prevent clots from forming in your body. To prevent complications, your nurse or physiotherapist will teach you exercises.
- After you leave the hospital and return home, you will need exercises to improve your strength and fitness. Talk to your doctor or physical therapist about the most appropriate exercises.

Stage 2 and 3 uterine cancer surgery

If you have stage 2 or 3 uterine cancer and the cancer has spread to the cervix or lymph nodes around the pelvis, you may need a complete or radical hysterectomy. This surgery involves removing more parts of the cervix and the upper part of the vagina along with the lymph nodes in the pelvic region. In order to reduce the risk of cancer recurrence, radiation therapy or chemotherapy may also be prescribed.

Surgery for advanced uterine cancer (stage 4)

Debulking surgery may be performed in advanced stages of uterine cancer. In this surgery, as much as possible, cancerous tissues are removed from the body. This surgery will not cure the cancer; But it may improve some cancer symptoms. Your doctor will discuss with you whether or not debulking surgery is appropriate.

Radiation therapy for uterine cancer

If, in the opinion of the treatment team, there is a high probability of the cancer returning, you will be prescribed a course of radiation therapy. Also, if surgery is not possible, radiation therapy is used to slow down the growth and spread of cancer.

To treat uterine cancer, there are two radiation therapy models

➤ Internal radiation therapy (brachytherapy)

A plastic tube is placed inside the uterus and therapeutic radiation reaches the uterus through this way.

➤ External radiation therapy

A device is used to transmit radiation to the pelvic area. A course of external beam radiation therapy, for five days a week, with a weekend break, is prescribed to you as an outpatient treatment. The treatment time is only five minutes. Depending on the stage and location of the uterine cancer, the entire course of radiation therapy may last approximately 4 weeks. Some women take internal radiation therapy (brachytherapy) at the same time as external radiation therapy. There are different types of brachytherapy including low, medium and high dose. In low doses, radiation transfer is done slowly; For this reason, it is necessary for the device to remain inside your body for a longer period of time. During brachytherapy, your presence in the hospital is mandatory. Your doctor will provide the necessary explanations regarding this matter. Radiation therapy is associated with side effects. The skin of the target area may become red and sore. Radiation therapy may also cause hair loss. Pelvic radiation therapy may affect the bowels and lead to nausea and diarrhea. With the continuation of the treatment process, there is a possibility of severe fatigue. Many of these side effects disappear after the end of the treatment period;

However, about 5% of women struggle with long-term treatment complications such as diarrhea and intestinal bleeding.

Chemotherapy of uterine cancer

If you have stage 3 or 4 uterine cancer, you may be prescribed a course of chemotherapy. Chemotherapy can be used after surgery to prevent cancer from returning. In connection with more advanced cancers, chemotherapy is used to reduce the spread of cancer and the appearance of symptoms. Chemotherapy is usually administered by injecting drugs into a vein (intravenous injection). You can usually go home the same day after chemotherapy, but sometimes you may need to stay in the hospital for a short time. Chemotherapy is usually used periodically in the form of a treatment period and a rest period to recover the body.

Side effects of chemotherapy may include:

- Nausea;
- Vomit;
- Hair loss;
- Extreme fatigue.

Also, with chemotherapy, the possibility of spreading infection in the bloodstream (sepsis) increases; Because following chemotherapy, the body's ability to fight infection decreases. After the end of the treatment period, the side effects also stop.

Hormone therapy

Some uterine cancers are caused by the female hormone estrogen. These cancers may respond to hormone therapy. Your doctor will discuss the likelihood of this treatment being successful for your uterine cancer. Hormone therapy is usually done by replacing a hormone called progesterone. Progesterone is a hormone that is naturally produced in the body and is found in your bloodstream; Synthetic progesterone is usually taken in pill form. This hormone is mainly used to treat advanced stage uterine

cancers or cancers that have recurred and can help shrink the tumor and control symptoms. This treatment may have side effects including mild nausea, mild muscle cramps and weight gain. Your gynecologist will discuss these with you.

Complications of cervical cancer

Like many cancers, cervical cancer can spread to other parts of the body and cause serious complications. However, when cervical cancer is diagnosed and treated early, the expected outcome is usually very good. Cervical cancer treatments can affect your ability to get pregnant and/or carry a pregnancy to term. Smaller surgeries on the cervix may increase the chance of miscarriage in subsequent pregnancies. Major surgeries that remove the uterus (hysterectomy), fallopian tubes (bilateral salpingectomy) or ovaries (bilateral oophorectomy) may mean you cannot have children. Cancer treatments, including surgery, chemotherapy, and radiotherapy, may all cause a range of side effects. Your medical team is very experienced in helping people manage these side effects and can give you advice and support to manage them.

Prevention of HPV infection and cervical cancer

There are different ways to prevent cervical cancer, which we will mention below:

➤ Use a condom

Consistent and correct use of condoms can help prevent HPV infection. Since HPV is spread through skin-to-skin contact in the genital area, condoms can reduce the chance of spreading the infection by adding a protective barrier. However, condoms do not provide complete protection against HPV because exposure to the virus can still occur even with their use.

➤ Quit Smoking

Not smoking reduces the risk of cervical cancer, although smoking is unrelated to whether or not you have HPV. Smoking destroys the overall function of your immune system, which normally helps you fight off viruses like HPV as well as cancer. Women who smoke are almost twice as likely to develop cervical cancer as non-smokers.

➤ Diet

Research shows that a healthy diet rich in fruits and vegetables, maintaining a healthy weight, and regular physical activity can reduce the risk of cervical cancer. Cancer-causing changes in the body. In addition, a research study in South America showed that curcumin, a spice with antioxidant properties, may be promising in a research setting in inhibiting cervical cancer. Help fight free radicals in your body that have been linked to cancer. However, more research is needed to confirm the benefits. It's also important to focus on getting antioxidants from whole foods rather than supplements, as clinical trials have shown that antioxidant supplements often have little effect on cancer risk or mortality, and some may even increase cancer risk.

➤ Use of IUD

An intrauterine device (IUD) is a method of birth control that is inserted into the uterus by a specialist. The position of the device prevents pregnancy and the IUD may also contain spermicides. A systematic review of 16 research studies involving 12,482 women concluded that cervical cancer was one-third less common in women who had an IUD.

➤ HPV vaccination

There are a number of different types of HPV, and vaccination targets those with the highest risk of cervical cancer. Infection with HPV 16 and 18 accounts for about 70% of all cervical cancer

cases, as well as a high rate of anal, penile, and head and neck cancers. Another 20% of cervical cancer cases are related to HPV 31, 33, 34, 45, 52, and 58. Additional HPV viruses that have been associated with cervical cancer include HPV 35, 39, 51, 56, 59, 66, and 68. The low-risk HPV strains HPV 6 and 11 usually do not cause cancer, but may lead to genital warts. Gardasil is the vaccination option available in the United States. Others are available internationally. This vaccine protects against HPV 6, 11, 16, 18, 31, 33, 45, 52 and 58. It is injected into the thigh or arm muscle and generally causes mild pain and discomfort. Gardasil 9 is recommended for everyone up to age 26 and some people up to age 45 to prevent new infections and the spread of HPV. If you are sexually active and in this age group, you can get vaccinated. In the past, two other vaccines, Gardasil and Cervix, were used. The original Gardasil vaccine protected against HPV 6, 11, 16, and 18. Cervix only protects against HPV 16 and 18, but as noted, these strains account for about 70 percent of infections. While HPV vaccination was thought to reduce the risk of cervical cancer, a 2020

study provided evidence to support this assumption. Swedish women and girls were given the quadrivalent vaccine (HPV vaccine that protects against the above four strains) and the incidence of cervical cancer was monitored. Among those who received the vaccine before age 17, the incidence of cervical cancer was 88 percent lower than among those who were not vaccinated. Among women who were vaccinated later (between ages 17 and 30, even if they were sexually active), the incidence was 53 percent lower. HPV vaccination can greatly reduce the risk of cervical cancer.

➤ Checkup and screening

If you experience any itching, bleeding or discomfort in the vaginal area, be sure to report these problems to your doctor. These can be early signs of HPV, cervical cancer, or other STDs. Of course, it's important to go for regular checkups with your gynecologist even if you don't have these symptoms. The fact that cervical cancer is currently the fourth most common cancer in women is reason enough to see your doctor regularly (Figure 4).

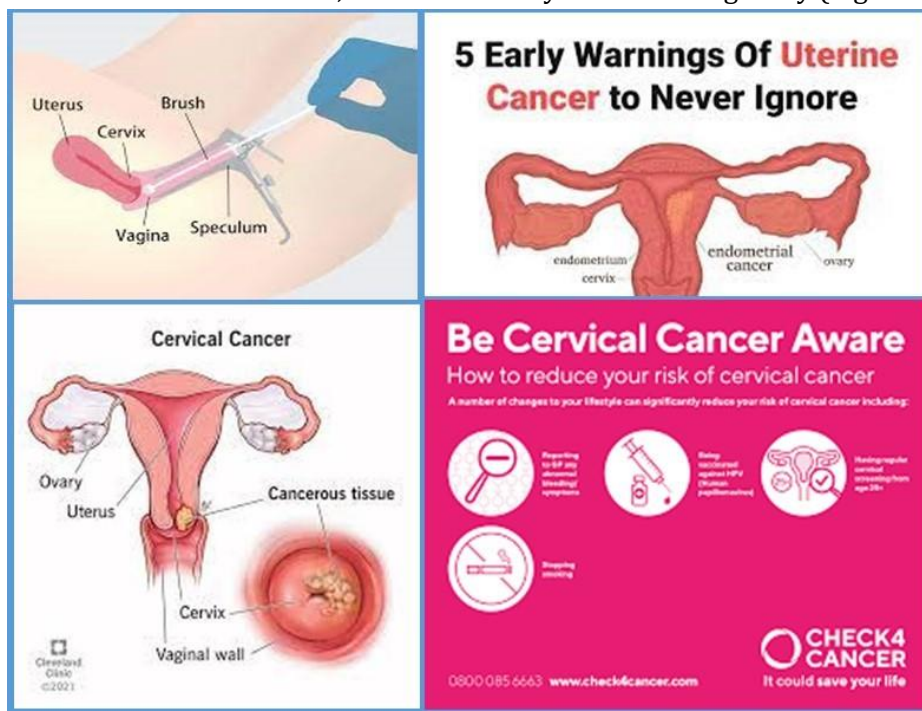


Figure 4. Checkup and screening

➤ **Pap smear test**

Pap smear is a screening test that can detect most of the cervical changes related to the development of cancer, and if the success rate is higher, it allows for earlier treatment. A primary HPV test is a test that specifically checks for high-risk types of HPV that are associated with cervical cancer.

Can you get pregnant after cervical cancer?

Cervical cancer itself may not affect your ability to get pregnant. However, some surgeries or treatments used to treat cervical cancer may affect your ability to have children. If fertility is important to you, you should discuss fertility preservation options with your doctor before starting treatment.

Does cervical biopsy hurt?

A cervical biopsy can be uncomfortable, but it's usually over quickly. If you're concerned, you may want to talk to your doctor about pain relief options.

Is cervical biopsy accurate?

No medical test is 100 percent accurate. Cervical biopsy is taken and checked by specialist doctors and is usually very accurate. If you are concerned, you may want to seek a second opinion from another specialist.

Is cervical cancer hereditary?

HPV causes most cases of cervical cancer and is not hereditary. However, if you have a first-degree relative with a history of cervical cancer, you may be at increased risk of developing cervical cancer.

Who is at risk of developing cancer?

Knowing the warning signs and potential dangers of cancer increases your chances of early detection of cervical cancer and HPV, before these two diseases spread to other parts of the body.

Different types of HPV virus, the cause of cervical cancer

Human papilloma virus is transmitted through sexual intercourse. Transmission of the virus occurs when the skin or mucous membranes of an infected person come into physical contact with the skin or mucous membranes of an uninfected person. In most cases, the infection does not cause any symptoms, so the unintentional transmission of the virus from one person to another occurs easily. More than 40 different types of HPV are sexually transmitted, but only a few of them cause obvious symptoms. For example, types 6 and 11 cause genital warts, but not cancer. Different types of papilloma virus have a carcinogenic effect, although most cancers caused by this virus are caused by types 16 and 18.

What is human papilloma virus?

Human papilloma virus in most cases leads to cervical cancer and genital warts. The HPV virus is transmitted through sex. Human papilloma virus (HPV virus) is transmitted through anal, oral and vaginal sex. According to the report of the National Cervical Cancer Task Force, 99% of cervical cancers are caused by the human papillomavirus (HPV). There are more than 200 types of HPV (human papilloma virus), but not all of them cause cervical cancer. Doctors divide HPV into two types. HPV types 6 and 11 lead to genital warts. These HPVs are not cancerous and their dangerous level is low. HPV types 16 and 18 have a very high risk level. According to the report of the National Cancer Institute, they are the cause of many cancers caused by HPV, including cervical cancer.

These HPVs also cause other types of cancer

- Anal cancer;
- Laryngeal cancer, which occurs in the throat;
- Vaginal cancer;
- Female genital cancer.

HPV infections are the most common type of sexually transmitted infection (STI) in the United States. Most women with HPV do not develop cervical cancer. HPV usually goes away in about two years without any treatment. This is despite the fact that some people will still be infected with HPV even after a long period of human papilloma virus has passed. HPV virus disease and cervical cancer, which has a short lifespan, are not always associated with a series of symptoms. This is while the doctor detects the presence of any abnormal cells in the cervix during the annual check-up using a pap smear test. It is also possible to know the status of HPV infection during this test.

Risk factors leading to papilloma virus infection include:

- High number of sexual partners;
- Having first sex at a young age;
- Weakened immune system.

Conclusion

The uterus is a hollow organ in the female body where the fetus grows. The uterus becomes cancerous when the healthy cells inside the uterine tubes turn into diseased cells for various and sometimes unknown reasons. Diseased cells gradually grow abnormally, which turns into cancer. Cervical cancer or endometrial cancer is caused by completely unknown reasons in the body. But research shows that some symptoms and causes are common among women with cervical cancer. One of the most important reasons that can cause cervical cancer is the imbalance of hormones inside the uterus. An increase in the level of estrogen in the uterus is a warning sign for cancer. Many factors are effective in creating hormonal imbalance:

- **Overweight:** Almost most women with cervical cancer are overweight.
- **Diabetes:** One of the diseases that increases the risk of hormonal imbalance and cervical cancer is diabetes.

- **High blood pressure:** Another thing that is seen among people with uterine cancer is high blood pressure.
- **Use of Tamoxifen:** This drug is prescribed to treat breast cancer. Long-term use of this drug also increases the risk of cervical cancer.
- **Family history:** Those who have a close family member such as their grandmother, mother or sister have uterine cancer, have the risk of contracting this disease.

Of course, it should be noted that having these conditions does not cause uterine cancer, nor does not having them prevent it. That is, seeing these symptoms, a person should not be afraid and think that i have cervical cancer! But many of these symptoms should be taken very seriously, and even without these high-risk factors, you should be careful about cervical cancer. In the process of treating the disease, the cost of treating cervical cancer is not the main problem. In the course of the disease, a person has to pay a lot of money physically and mentally. So the best thing is to follow the tips that prevent any kind of disease. To stay away from the disease, having a healthy lifestyle is the first important point in everyone's life. But besides that, there are certain points about uterine cancer that will reduce the possibility of contracting this disease to a great extent. If you are under hormonal treatment for any reason, be sure to consult your doctor about the possibilities of this disease. Estrogen and progesterone hormones, combined, will reduce the risk of uterine cancer. Taking birth control pills for a long time will reduce the possibility of getting this disease. Having an ideal weight and avoiding obesity and overweight is another important point that is recommended not only to prevent this disease, but also to maintain health. Sports and continuous physical activity is one of the most important issues for women. Especially during menopause, exercise will

reduce the risk of uterine cancer and many other diseases. Eating healthy and quitting smoking and drinking alcohol is also an important issue that is effective in preventing many diseases. Annual check-ups and pap smear tests for women are one of the most important issues that should be taken seriously. Among women's examinations, cervical cancer screening test is also performed for people prone to this disease.

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