Dr. Richa Ashok Bansal, MS (OBGY), DNB, MCh Gynecological Oncology (TMH), Ph No. 9769364195
Sr. Consultant Gynecological Onco Surgeon, Laparoscopic & Robotic Surgeon

Uterine Cancer

The uterus is the hollow, pear-shaped pelvic organ in females where fatal development occurs. It is also commonly known as the womb. Uterine cancer most commonly begins in the layer of cells that form the lining (endometrium) of the uterus. It is also called endometrial cancer. Other types of cancer can form in the uterus, including uterine sarcoma, but they are much less common than endometrial cancer.

Endometrial cancer is often detected at an early stage because it frequently produces abnormal vaginal bleeding. If endometrial cancer is discovered early, removing the uterus surgically often cures endometrial cancer.

There are 2 major types of Uterine Cancer

- **Endometrial Adenocarcinoma:** This type makes up majority of uterine cancers. It develops from cells in the endometrium. The most common endometrial adenocarcinoma subtype is called endometrioid carcinoma. Treatment for this type of cancer varies depending on the grade of the tumor, how far it has invaded the uterine muscle, and the stage or extent of its spread in the abdominal cavity. Less common subtypes of uterine adenocarcinomas include serous, clear cell, and carcinosarcoma.
- **Sarcoma:** This type of uterine cancer develops in the supporting tissues of the uterine glands or in the myometrium, which is the uterine muscle. Sarcoma accounts for about 2% to 4% of uterine cancers. Subtypes of uterine sarcoma include leiomyosarcoma, endometrial stromal sarcoma, and undifferentiated sarcoma.

How serious is Uterine Cancer?

- The prognosis or seriousness of a cancer depends on the stage at which it is diagnosed and also on whether the cancer has been treated appropriately.
- It usually presents in early stage of the disease when the cancer is still confined to the uterus in 80 percent of the women. These women usually have a good prognosis with staging surgery i.e. removal of the uterus, both ovaries and fallopian tubes as well as regional lymph nodes (pelvic and paraaortic) with or without adjuvant radiation.

- Advanced stage endometrial cancer can spread to the bladder or rectum, or it can spread to the vagina, fallopian tubes, ovaries, lymph nodes and more distant organs.
- Treatment of advanced stage endometrial cancer usually requires a combination of surgery, chemotherapy and radiation.

Does Uterine Cancer spread quickly?

- Uterine cancers are frequently diagnosed in stage1 as the women are symptomatic with abnormal vaginal bleeding early in the course of the disease. These women with early stage disease generally have a favourable prognosis when treated adequately.
- Uterine cancers when diagnosed late or left untreated can spread locally to involve vagina, bladder, and rectum or can metastasize to distant organs like lung or liver.
- The prognosis and the course of the disease also depend on the type of uterine cancer. There are 2 different types of uterine cancers as follows:
- Type 1 cancers are the most common type. They are usually endometrioid adenocarcinomas, and are linked to obesity and excess oestrogen in the body. They are generally slow growing and less likely to spread. Hence, they are generally diagnosed in stage 1 or 2 and usually have a good prognosis.
- Type 2 cancers include uterine serous carcinomas and clear cell carcinomas. These cancers are not linked to obesity and excess oestrogen. They are generally faster growing and more likely to spread. They are more commonly diagnosed in stage 3 or 4 and have a worse prognosis.

Symptoms of Uterine Cancer

- Endometrial cancer is usually diagnosed early due to the appearance of symptoms like vaginal bleeding.
- Abnormal vaginal bleeding or discharge, occurs in nine out of 10 women with endometrial cancer. Before menopause, this means unusually heavy or prolonged menstrual periods or bleeding between periods. After a woman enters menopause, this means any vaginal bleeding or spotting. Vaginal bleeding is abnormal in postmenopausal women, and any such bleeding should prompt one to consult a gynaecologist and do the necessary tests like an ultrasound of the pelvis and endometrial biopsy to rule out an endometrial cancer.

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Other symptoms of Uterine Cancer can be:

- Vaginal discharge that may range from pink and watery to thick, brown, and foul smelling.
- Difficult or painful urination.
- Feeling of heaviness or pain in the lower abdomen
- An enlarged uterus, detectable during a pelvic exam.
- Pain during intercourse.
- Unexpected weight loss.
- Weakness and pain in the lower abdomen, back, or legs. This happens when the cancer has spread to other organs.

How do doctors know it's a fibroid instead of cancer?

- Uterine fibroids are noncancerous growths of the uterus that often appear during childbearing years. Also called leiomyomas, uterine fibroids aren't associated with an increased risk of uterine cancer and almost never develop into cancer.
- Uterine cancer is a malignant growth arising in the uterus with a tendency to invade in the adjacent organs but can also spread in distant organs if not detected and treated timely.
- Both uterine fibroids and cancer can present with symptoms like heavy menstrual bleeding, feeling of heaviness or pain in the lower abdomen.
- The initial evaluation for any woman with heavy menstrual bleeding is a pelvic ultrasound for endometrial thickness and for other endometrial or myometrial lesion like polyp, fibroids, adenomyosis etc.
- If the ultrasound reveals an endometrial thickness or a lesion, an endometrial biopsy becomes mandatory to rule out an endometrial cancer.
- An endometrial biopsy should be considered even if the ultrasound doesn't show any abnormality but if the symptoms are severe and persistent especially in perimenopausal and menopausal women.
- An MRI scan of the pelvis is an imaging modality which helps in further characterization of the uterine lesion and differentiating between a fibroid and an endometrial lesion.
- Uterine sarcomas are uterine cancers which arise in the uterine muscle layer and can be very difficult to differentiate from a fibroid on an imaging.
- Definite differentiation between a uterine sarcoma and a fibroid is possible only after surgery and histopathology examination.

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Causes of Uterine Cancer

It's not known exactly what causes uterine cancer, although a number of conditions can increase one's risk of developing the condition.

- **Age:** The risk of uterine cancer increases with age. Most cases occur in women aged 40 to 74 years, with only 1% of cases being diagnosed in women under 40 years.
- **Oestrogen levels after the menopause:** The risk of developing uterine cancer is linked to the body's exposure to oestrogen. The levels of oestrogen and progesterone in the body are usually balanced. If oestrogen is not kept in check by progesterone, it can increase. This is called unopposed oestrogen. After the menopause, the body stops producing progesterone. However, there are still small amounts of oestrogen being produced. This unopposed oestrogen causes the cells of the endometrium to divide, which can increase the risk of uterine cancer.
- **Being overweight or obese:** As oestrogen can be produced in fatty tissue, being overweight or obese increases the level of oestrogen in the body. This significantly increases one's chances of developing uterine cancer. Women who are overweight are 3 times more likely to develop uterine cancer compared with women who have normal BMI (Body Mass Index). Very obese women are 6 times more likely to develop uterine cancer compared with women who have normal BMI.
- **Reproductive history:** Women who have not had children are at a higher risk of uterine cancer. This may be because the higher levels of progesterone and lower levels of oestrogen that occur during pregnancy have a protective effect on the lining of the womb.
- **Tamoxifen:** Women who take tamoxifen – a hormone treatment for breast cancer – are at an increased risk of developing uterine cancer. However, this risk is outweighed by the benefits that tamoxifen provides in preventing breast cancer. It's important to visit a Gynecologist if one is taking tamoxifen and experiences any abnormal vaginal bleeding.
- **High levels of insulin:** Conditions such as hyperinsulinaemia, where the body produces more insulin than normal, can increase the risk of uterine cancer.
- Polycystic ovary syndrome (PCOS)- Women with polycystic ovary syndrome (PCOS) are at a higher risk of developing uterine cancer, as they have high levels of oestrogen in their bodies.
- **Endometrial hyperplasia:** Endometrial hyperplasia is when the lining of the uterus becomes abnormally thicker. Women with the condition may be at an increased risk of developing uterine cancer.

- **Family history:** (having close relatives with endometrial or colorectal cancer)

Diagnosis of Uterine Cancer

- The most common symptom of uterine cancer is abnormal vaginal bleeding specially in a woman who is postmenopausal. Uterine cancer can also occur in premenopausal women who often present with symptoms like heavy and prolonged bleeding during periods.
- Whenever a woman presents to a Gynecologist with symptoms which could be suspicious of uterine cancer, the most initial tests which are done are an ultrasound to look for any uterine lining thickening or any uterine lesion like a polyp or a fibroid. Following the ultrasound, an endometrial biopsy is performed which can be done as an Outpatient procedure itself by the Gynecologist. It is also called as Pipelle biopsy where a plastic cannula is introduced in the endometrial cavity and a small biopsy is taken.
- If the Pipelle biopsy is not feasible due to tight uterine opening (Os) or patient discomfort, then a D&C (Dilatation and curettage) under sedation is needed to be performed to obtain the endometrial biopsy.
- Endometrial biopsy is the most confirmatory test which confirms or rules out the uterine cancer and also tells us which type of uterine cancer it is.
- If endometrial cancer is confirmed on biopsy, then an abdominal imaging test such as an MRI or CT scan of the abdomen and pelvis is advised to know the spread of cancer within the uterus and surrounding organs and also the rest of the abdominal organs.
- The extent of spread of the uterine cancer within the uterus and the surrounding organs and lymph nodes based on MRI or CT scan helps to plan the further surgical treatment.

Treatment options for Uterine Cancer

Treatment for uterine cancer depends on the stage and grade of the disease. Uterine cancer is treated by one or a combination of treatments, including surgery, radiation therapy, and systemic treatments like chemotherapy and hormonal therapy. Combinations of these cancer treatments are often recommended, depending on the stage and characteristics of the cancer.

- **Surgery:** Surgery is usually the first treatment used for uterine cancer and is done by a Gynecological Oncologist who specializes in treating gynecologic cancers. Depending on the extent of the cancer, the surgery will entail removal of uterus, both ovaries and fallopian tubes and the draining lymph nodes of the abdomen and pelvis. Lymph node removal is done to determine if the cancer has spread beyond the uterus. Surgery may be performed either by abdominal incision, or by minimally invasive route which are by laparoscopy and robotics.
- **Radiation therapy:** Radiation therapy is the use of high-energy x-rays or other particles to destroy cancer cells. Radiation therapy can be delivered externally or internally. External-beam radiation therapy uses a machine outside the body to deliver radiation to the pelvic region. Radiation can also be delivered internally. This form of radiation is called brachytherapy. External-beam radiation therapy can be given alone or in combination with brachytherapy. For some women, brachytherapy alone will be recommended.

  Radiation therapy is primarily indicated after surgery when high risk uterine factors like deep uterine muscle invasion, cervical involvement, lymphovascular space invasion are present to decrease the risk of recurrence of uterine cancer.

  Radiation therapy is indicated in combination with chemotherapy after surgery if disease is more advanced in the form of pelvic or abdominal lymph nodes involvement.

Systemic Therapy

The types of systemic therapies used for uterine cancer include:

- Chemotherapy
- Hormone therapy
- Targeted therapy
- Immunotherapy

Systemic therapy is generally advised for metastatic and recurrent disease.

Prevention of Uterine Cancer

Most cases of uterine cancer cannot be prevented, but women can take some measures to reduce their risks by:

- Maintaining a healthy weight.
- Maintaining an active lifestyle
- Using oral contraceptives or Progesterone releasing IUDs.

- Controlling diabetes.

In addition, women who are considering estrogen replacement therapy should talk to their doctors to evaluate their risk of uterine cancer.

The American Cancer Society encourages women to discuss any unexpected bleeding or spotting with their Gynecologist.

Women who have or are at high risk for hereditary nonpolyposis colon cancer (HNPCC) should receive annual screenings for uterine cancer with an endometrial biopsy starting at age 35.