

Each year, more than 22,000 women in the United States learn they have ovarian cancer.

Types of Cancer

In women under age 30, most ovarian growths are benign, fluid-filled sacs called cysts. Cysts may occur during a woman's monthly cycle and often go away without any treatment. If a cyst does not go away, the doctor may suggest removing it, especially if it is causing problems or seems to be changing. In some cases, the doctor may decide to wait and watch for changes with ultrasonography or other tests.

- Malignant tumors are cancer. Cancer cells can invade and damage tissues and organs near the tumor. Also, cancer cells can break away from a malignant tumor in the ovary and spread to other organs in the abdomen and form new tumors. Ovarian cancer spreads most often to the colon, the stomach, and the diaphragm. The cancer cells also can enter the lymphatic system or the bloodstream and spread to other parts of the body. The spread of cancer is called metastasis.

There are several types of ovarian cancer. Most ovarian cancers are epithelial carcinomas, which begin in the lining of the ovary. (Other types of ovarian cancer are rare and are not discussed in this booklet.)

When cancer spreads, the new tumor has the same kind of abnormal cells and the same name as the original (primary) tumor. For example, ovarian cancer that spreads to the colon is metastatic ovarian cancer. It is not colon cancer, even though the new tumor is in the colon.

Symptoms

Ovarian cancer is hard to find early. Often there are no symptoms in the early stages and, in many cases, the cancer has spread by the time it is found. The cancer may grow for some time before it causes pressure, pain, or other problems. Even when symptoms appear, they may be so vague that they are ignored.

As the tumor grows, the woman may feel swollen or bloated, or may have general discomfort in the lower abdomen. The disease may cause a loss of appetite or a feeling of fullness, even after a light meal. Other symptoms may include gas, indigestion, nausea, and weight loss. A large tumor may press on nearby organs, such as the bowel or bladder, causing diarrhea or constipation, or frequent urination. Less often, bleeding from the vagina is a symptom of ovarian cancer.

Ovarian cancer may cause swelling due to a buildup of fluid in the abdomen (ascites). Fluid also may collect around the lungs, causing shortness of breath.

These symptoms may be caused by cancer or by other, less serious conditions. Only a doctor can tell for sure.

Diagnosis and Staging

To find the cause of any of these symptoms, the doctor asks about the woman's medical history and does a careful physical exam, including a pelvic exam. The doctor feels the vagina, rectum, and lower abdomen for masses or growths. A Pap smear

(a common test for cancer of the cervix) is often part of the pelvic exam, but it is not a reliable way to find or diagnose ovarian cancer.

The doctor may also order other tests:

- **Ultrasonography** is the use of high-frequency sound waves. These waves, which cannot be heard by humans, are aimed at the ovaries. The pattern of the echoes they produce creates a picture called a sonogram. Healthy tissues, fluid-filled cysts, and tumors produce different echoes.
- **CT (or CAT) scan** is a series of x-rays put together by a computer.
- **A lower GI series**, or barium enema, is a series of x-rays of the colon and rectum. The pictures are taken after the patient is given an enema with a white chalky solution containing barium. The barium outlines the colon and rectum on the x-ray, which helps the doctor see tumors or other abnormal areas.
- **An intravenous pyelogram (IVP)** is an x-ray of the kidneys and ureters, taken after the injection of a dye.

Often, the doctor orders a blood test to measure a substance in the blood called CA-125. This substance, called a tumor marker, can be produced by ovarian cancer cells. However, CA-125 is not always present in women with ovarian cancer, and it may be present in women who have benign ovarian conditions. Thus, this blood test cannot be used alone to diagnose cancer.

The only sure way to know if cancer is present is for a pathologist to examine a sample of tissue under the microscope. Removing tissue from the body for this examination is called a biopsy. To obtain the tis-

sue, the surgeon does an operation called a laparotomy. If cancer is suspected, the surgeon removes the entire ovary (oophorectomy). This is important because, if the problem is cancer, cutting through the outer layer of the ovary could allow cancer cells to escape and cause the disease to spread. If cancer is found at this time, the surgeon proceeds with surgery.

During surgery, the surgeon removes nearby lymph nodes, and takes samples of tissue from the diaphragm and other organs in the abdomen. The surgeon also collects fluid from the abdomen. All of these samples are examined by a pathologist to check for cancer cells. This process, called surgical staging, is needed to find out whether the cancer has spread. Staging is important in the planning of followup treatment.

The Promise of Cancer Research

Scientists at hospitals and medical centers all across the country are studying ovarian cancer. They are trying to learn more about what causes this disease and how to prevent it. They are also looking for ways to detect it earlier and to treat it more effectively.

Cause and Prevention

About 1 in every 70 women in the United States will develop ovarian cancer during her lifetime. Most cases occur in women over the age of 50, but it can also affect younger women. The disease is more common in white women than in black women, but doctors do not know why.

Scientists do not know what causes ovarian cancer. It is clear, however, that this disease is not contagious; no one can “catch” ovarian cancer from another person.

By studying large numbers of women all over the world, researchers have found certain risk factors that increase a woman's chance of developing ovarian cancer. However, studies also show that most women with these risk factors do not get ovarian cancer, and many women who do get the disease have none of the risk factors we know about.

The following are some of the known risk factors for ovarian cancer:

- **Family medical history.** The risk of getting ovarian cancer increases for a woman whose close relative (mother, sister, daughter) has had the disease. The risk is especially high if two or more close relatives have had the disease. The risk is not quite as high for women with other relatives (grandmother, aunt, or cousin) who have had ovarian cancer.
- **Childbearing.** Women who have never been pregnant are more likely to develop ovarian cancer than are women who have had children. In fact, the more times a woman has been pregnant, the less likely she is to develop ovarian cancer. Also, women who use oral contraceptives (birth control pills) are less likely to develop ovarian cancer than are women who do not. A possible reason is that the pill creates hormone levels in the body that are similar to those during pregnancy. Recent research raises the question of whether infertile women who take fertility drugs and do not become pregnant may be at an increased risk of developing ovarian cancer. But this possible link has not been proven. Further research is under way to see whether ovarian cancer is related to infertility and/or to the use of fertility drugs.

- **Age.** The risk of a developing ovarian cancer increases as a woman gets older. Most ovarian cancers occur in women over the age of 50; the risk is especially high for women over 60.
- **Personal medical history.** Women who have had breast cancer are twice as likely to develop ovarian cancer as are women who have not had breast cancer.

Women who think they may be at risk for developing ovarian cancer should discuss this concern with their doctor, who can plan an appropriate schedule of checkups.

Early Detection

Most health problems respond best to treatment when they are found early. Women who have regular pelvic exams increase the chance that, if ovarian cancer occurs, it will be found before the disease causes symptoms. However, pelvic exams often cannot find ovarian cancer at an early stage. Scientists are trying to find better ways to detect ovarian cancer earlier, when treatment may be more successful. For example, they are exploring the usefulness of measuring the level of CA-125 in the blood. Other ways of detecting the disease, such as new ultrasound techniques, also are under study.

Women over age 60 are taking part in a nationwide study of CA-125 and transvaginal ultrasound. In this study, scientists are trying to learn whether these tests can detect early ovarian cancer (in women who have no symptoms of the disease) and reduce the number of deaths from this disease. The Cancer Information Service can provide information about this study.