

## Breast Pathology Consultation Services

### Frequently Asked Questions

*What should I do if I find a lump in my breast?*

Breasts are glands that are continuously under the affects of hormones. They are considered an integral part of a women's reproductive system and a symbol of her sexuality. Breasts are primarily made of fat and mammary ductal-lobular units. Like branches of a tree, the lobules make milk and the ductal units deliver it to the main breast ducts that open to the nipple. The size of the breast is genetically determined and has no relation to the incidence of breast cancer. Breasts undergo changes in size during the menstrual cycle and pregnancy and undergo atrophy during old age.

Breast tissue generally has a texture that varies from person to person. Familiarity with your breast texture and appearance can help you identify any significant changes in a timely fashion. Any palpable lump or other change in your breast requires the attention of your physician. Fortunately, the majority of breast lumps are benign. However, it is difficult to reliably exclude the possibility of cancer by clinical examination only. The best way to determine the nature of a breast lump is to ask your physician to have the lump sampled by a biopsy and have it examined by a pathologist. The knowledge about the nature of your breast disease will eliminate your anxiety and accelerate the course of your therapy.

*I occasionally experience pain in my breasts. Do I need to be worried about breast cancer?*

It depends on how old you are and what type of pain you are experiencing. Breast pain is often called mastalgia and varies in severity and frequency. Mastalgia is the result of three different conditions. The most frequent type is cyclical pain, related to the menstrual cycle, occurring before menstruation and continuing until the period ends. This pain is the result of the influence of hormones on breast tissue, the breasts become tender and the level of discomfort varies in women, from slight to complete intolerance.

The exact reason why hormones cause breast pain is not clearly understood, although there is some evidence that stress affects the frequency and severity of breast pain by its impact on hormones. Cyclical breast pain often disappears after menopause. Women who undergo hormone replacement therapy may still continue to experience breast pain. Breast pain may also be the first sign of pregnancy.

The other less common form of mastalgia is noncyclical pain. This pain has no relation to the menstrual cycle and is generally felt in one spot of the breast. The most common reason for noncyclical pain is history of trauma to the breast.

The third type of breast pain is not related to breast tissue. It is commonly experienced in the middle of the chest and has no relation to hormones. This pain is induced by joint inflammation in the chest midline (arthritis), a condition called costochondritis. The severity of this pain changes by taking deep breaths. Other causes can be attributed to neck arthritis or vein inflammation within the breast area, known as Mondor's Syndrome.

Overall, breast pain is rarely associated with cancer. The simplest approach to breast pain management is the use of a supportive bra, anti-inflammatory medications and pain analgesics. There is no generally agreed upon treatment for mastalgia. A qualified physician should individually evaluate every case.

*I have nipple discharge. Should I worry?*

It depends on what kind of nipple discharge you have. If you are on contraceptive pills, antihypertensive drugs, or are using tranquilizers, such as Thorazine, or have been breast-feeding during the past year, your nipple discharge is hormone or drug induced. In other words, these conditions increase the level of prolactin, which causes nipple discharge. This occurs in both breasts and is often colorless or milky in appearance.

If you are not using any medications, you may be experiencing a condition called galactorrhea. This excessive or spontaneous milk flow may be due to a small tumor in the brain, which causes increased levels of prolactin. This tumor can easily be removed by surgery.

In contrast, if your nipple discharge is spontaneous, persistent, occurs only in one breast and is bloody, you may have to worry about the presence of a tumor. Fortunately, the majority of these tumors, called intraductal papillomas, are benign in nature. Only 4 percent of cases are representative of a malignant tumor in mammary ductal system. Your physician can easily evaluate the cause of your nipple discharge and plan your optimal therapy.

*My mother is suffering from breast cancer and my aunt recently died of ovarian cancer. Am I at risk? Do I need genetic testing?*

Naturally, you have a strong family history of cancer and you are at higher risk of developing cancer compared to the general public. However, family history alone cannot reliably determine an accurate risk of hereditary cancer. Other risk factors should be taken into consideration and your risk for cancer should be determined by qualified professionals who have special training in risk assessment and genetic counseling.

The majority of breast cancers are sporadic (nonhereditary) and are not associated with any known risk factors. Only a small percentage of breast cancers are genetic. BRCA1 and BRCA2 are the primary causative genes for hereditary breast and ovarian cancer. Individuals who carry these genes are at increased risk for cancer development.

Genetic testing is an appropriate method for diagnosing hereditary cancer risk; however, there are still many unanswered questions about interpretation of BRCA test results. It should be noted that a negative BRCA test result does not entirely exclude the possibility of having another breast cancer gene and the risk of subsequent cancer development.

Positive results should be carefully balanced against available risk-reduction modalities and appropriate measures taken to choose the best option on an individualized basis. Early identification of hereditary breast and ovarian cancer provides an opportunity for the best available preventive plans. These options include increased surveillance, chemoprevention and prophylactic surgery.

Increased surveillance includes regular self and clinical breast exams and mammography. The recommended surveillance for ovarian cancer is transvaginal ultrasound and serum tumor marker CA-125 on either a six-month or yearly interval.

Chemoprevention is another alternative. Chemopreventive agents, such as Tamoxifen, reduce breast cancer risk in women with BRCA mutations. Oral contraceptives are also associated with a significant risk reduction in ovarian cancer in BRCA carriers. Prophylactic surgery—mastectomy and removal of the ovaries—also reduce the risk of breast and ovarian cancer. These preventive measures can significantly lower the chance of breast cancer and ovarian cancer in high-risk individuals.

*My twin brother was just diagnosed with breast cancer. Can breast cancer occur in men? What are my chances of getting breast cancer?*

Breast cancer occurs in males, but the incidence is much lower than in women. The most common symptoms of male breast cancer are a lump in the breast, abnormality seen in the nipple area and/or nipple discharge. There are also benign lesions, such as intraductal papillomas, that may present with similar symptoms. Bilateral breast enlargement, or gynecomastia, may reflect endocrine abnormalities related to estrogen metabolism or appear as the result of endocrine therapy for prostate cancer. Rarely, metastatic tumors from other sites, such as the prostate, can appear as a breast mass in elderly males.

The breast cancer types that are seen in men are of ductal origin and behave similarly to those that occur in women. If male breast cancer is detected at an early stage, survival is comparable to that of women. However, breast cancer in men is often detected at a more advanced stage. This is primarily due to the fact that most men are not aware that breast cancer can also affect them.

The treatment options for men with breast cancer are similar to treatments used in women. Risk factors for male breast cancer include family history of breast cancer, carrying breast cancer genes and estrogen treatment for sex changes. Conditions such as chronic liver disease, including cirrhosis, which causes impairment of estrogen metabolism and higher serum estrogen levels, may contribute to the development of breast cancer in men.

Sharing very similar genetic backgrounds, as with siblings, makes a person more susceptible to being affected by similar diseases. It is critical that you undergo appropriate risk assessment by a qualified physician and plan a comprehensive follow-up program in order to ensure early detection of this disease.

*I just had a mammogram that showed areas of microcalcifications. Do I have cancer? What should I do next?*

It depends on the type of microcalcifications in your mammogram. Fortunately, approximately 80 percent of microcalcifications are not associated with cancer.

Microcalcifications are the result of calcium deposits within different areas of breast tissue and are commonly the result of gradual changes that occur with the aging process. Benign microcalcifications have special characteristics that can be recognized by radiologists. In the absence of significant risk factors for breast cancer, the majority of cases only require regular follow-up care.

Microcalcifications associated with malignancy are different in shape, size and the pattern of their appearance. Malignant calcifications are small, tightly clustered and follow the pattern of the mammary ductal system. Any suspicious mammographic microcalcifications require tissue sampling by either core needle biopsy or open biopsy. The choice of tissue sampling is often determined by the extent of mammographic calcifications and their location within the breast. If microcalcification is seen only in a small area, the exact location can be identified by image-directed core needle biopsy. Core needle biopsy is considered a minimally invasive procedure that is easily tolerated. Currently the most common approach for tissue sampling, core needle biopsy is performed in an office setting and does not require general anesthesia.

Another method of tissue sampling for mammographically-detected microcalcification is needle localization excisional biopsy. This open biopsy procedure requires insertion of a wire as a tracer into the suspicious area by a radiologist. This procedure is then followed by a visit to the operating room where a surgeon removes the abnormal area and sends the tissue to a pathologist for further analysis. This is the preferred procedure in situations where there is more than one area of

microcalcification on the mammogram. In this circumstance, the entire area has to be removed in order to better determine the nature of the abnormality within the breast.

Further management and treatment planning depends on the diagnosis rendered by a pathologist. It should also be noted that about 5-10 percent of core needle biopsies do not provide sufficient tissue samples for a pathologist to render an accurate diagnosis. In these cases, needle localization excisional biopsy is the final alternative.

*What are the signs and symptoms of breast cancer?*

Breast cancer presents itself in a variety of shapes and forms. The most common presentation of breast cancer is the appearance of a palpable breast mass. In other words, the mass can be found by the patient and/or partner or by a physician during physical exam. It is frequently irregular and firm, and occasionally can be fixed to the underlying tissue. Rarely, breast cancer is associated with breast pain. Unilateral bloody nipple discharge may occasionally be the first presentation of breast cancer. Other signs include nipple retraction, skin ulceration and a change in the color of the skin of the breast or a change in shape of the breast. In advanced cases, there are palpable nodules in the armpit, representing axillary lymph node involvement by the tumor.

Breast cancer can also be nonpalpable, meaning it is seen only by a screening mammography or ultrasound. Regardless of how an abnormality is detected, the lesion must be appropriately sampled and examined by a pathologist. Palpable breast lesions can be sampled by fine needle aspiration biopsy, which involves insertion of a small needle into the mass used for retrieval of cellular material for further microscopic evaluation. This is the most cost-effective procedure to sample a breast lesion and also has the advantage of providing a rapid bedside diagnosis. Fine needle aspiration biopsy should be performed and interpreted by an experienced pathologist.

Another minimally invasive sampling procedure is a core needle biopsy, which uses a larger needle. A core needle biopsy provides a tissue diagnosis and requires a wait period for the results. Occasionally, surgical biopsy is further required to establish an accurate diagnosis of a breast mass. When the diagnosis of breast cancer is established, it is important for the patient to understand the course of her or his disease and the best options for therapy. It is imperative to find the most knowledgeable team of breast physicians who understand the value of a multidisciplinary approach to breast cancer.

*I have a 1.5 cm cancer in my right breast. I would like to undergo breast conservation therapy to keep my breast, but my surgeon advises me to remove both of my breasts. I am only 55 years old and the only one in the family with breast cancer. Do I really need such drastic treatment?*

The answer to your question is simply no. You are right in your decision to remove your breast cancer by lumpectomy, followed by radiation therapy. The overall long-term outcome of this approach is the same as if you had a mastectomy. In respect to your other breast, you are now at a slightly higher risk compared to the general population to develop a new cancer in your left breast. However, in the absence of any detectable abnormality in this breast, and without another significant risk factor, it is not justified to consider a preventive/prophylactic mastectomy.

Bilateral prophylactic mastectomy is a disfiguring procedure and often is associated with an adverse psychological impact. In addition, despite general assumption, this procedure does not totally eliminate the possibility of developing breast cancer. Surgically, it is not possible to remove all of the breast tissue by the procedure and reports have demonstrated that prophylactic mastectomy does not guarantee a lifetime breast cancer risk-free status. Therefore, recommending a bilateral prophylactic

mastectomy should be based on a well-balanced risk-benefit analysis by a team of qualified physicians and with complete acceptance from the patient.

Bilateral prophylactic mastectomy, especially if it is not followed by reconstructive surgery, is a life-changing experience and should not be considered because of induced fear to the patient or of any financial incentive. On the other hand, bilateral prophylactic mastectomy is an effective tool in management of very high-risk individuals, such as those who carry breast cancer genes. These women will definitely benefit from this preventive measure. Remember, however, that if you choose breast conservation therapy for your right breast cancer, you need to undergo regular clinical breast exams and mammography in order to reduce the chances of missing any recurrence or new cancer in either of your breasts.

*I have just been diagnosed with breast cancer. Will I have to lose my breast?*

Planning of breast cancer therapy is influenced by many factors, including the size, type and other characteristics of the tumor, as well as the choice of the patient. Traditionally, mastectomy was the only surgical approach as the initial therapy. In recent years, however, this trend has changed. Clinical trials by distinguished scientists from Europe and the United States with more than 20 years of clinical follow-up have shown that patients undergoing conservation therapy experience the same outcome as those who choose mastectomy.

Conservation therapy involves removal of the tumor with a rim of normal breast tissue, called a lumpectomy, followed by radiation therapy. Conservation therapy is particularly suitable for small tumors and for patients who choose to keep their breasts. Conservation therapy must be managed by a team of knowledgeable physicians who are able to remove the entire tumor with clear surgical margins and offer the state-of-the-art radiation therapy. For large tumors, it may be essential to involve an oncologist to consider presurgical chemotherapy in order to shrink the tumor before surgery. This approach is associated with a better chance of removal of the entire tumor and a better cosmetic result.

In a small percentage of cases, such as the presence of several small areas of tumor in a breast or if a patient cannot tolerate radiation, a mastectomy may be the only option for surgical therapy. Women with very large tumors and very small breasts may not be suitable candidates for breast conservation therapy. Other barriers to conservation therapy are related to regional, racial or socioeconomic bias, lack of radiation therapy facilities or the surgeon's personal preference for mastectomy.

It is your right to choose your treatment. This is only possible if you are empowered with sufficient knowledge about your breast cancer in order to make an informed decision. Fully discuss your options with your physician and ask questions.

*I am a newly diagnosed breast cancer patient and my surgeon wants me to choose between total axillary dissection and sentinel lymph node biopsy. What is the difference between these two procedures?*

Axillary lymph nodes are located under your arm. They are small and round structures that are part of the immune system designed to protect the body against disease. They are also the site of tumor metastasis. This means that when breast cancer spreads, axillary lymph nodes are the first place that the tumor cells reside.

The status of tumor spread into the lymph nodes is the most well-established predictor of the outcome of breast cancer patients. It also directs the extent of therapy. Presence of tumor cells in

axillary lymph nodes requires more aggressive therapy. Assessment of the presence or absence of tumor cells in axillary lymph nodes requires surgical sampling of the nodes. This can be achieved either by removal of the entire axillary lymph node, called total axillary dissection, or by removing the first few nodes, known as sentinel lymph node biopsy. Total axillary dissection is occasionally associated with the some degree of morbidity, such as lymphedema, pain or altered sensation. Lymphedema is swelling caused by the build up of lymph fluid, creating a sensation of heaviness and discomfort to the patient.

Sentinel lymph node biopsy involves removal of only a few lymph nodes. Sentinel lymph nodes are identified by a tracer, such as blue dye or radioactive material, injected by a surgeon around the original tumor. The idea is to identify which lymph nodes the breast tumor drains into. The sentinel lymph node is analyzed by a pathologist to determine if any tumor can be found. When there is evidence of tumor cells in the sentinel node, the surgeon proceeds to total axillary dissection.

Sentinel lymph node biopsy is less invasive than total axillary dissection and is associated with minimal morbidity. Sentinel lymph node biopsy is gradually replacing total axillary dissection, and in experienced hands, has been found to adequately predict the state of axillary lymph nodes in about 95 percent of cases. This surgery is new and still under investigation. If you decide to undergo sentinel lymph node biopsy, please make sure that the procedure is performed by a surgeon who has sufficient experience in the procedure.