

Breast Cancer

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Abstract

Breast cancer is the most common cancer in Western women, with a lifetime risk of 1/10. Over the last decade, our knowledge of the molecular events involved in breast cancer biology and pathology has vastly improved. Breast cancer is caused by the activation or inactivation of numerous types of genes. The sequence of gene modifications in tumour progression is unclear, and it differs significantly from the greatest example of tumour progression now available, colo-rectal carcinoma. Despite this, the vast number of genetic changes found in breast tumours fits the multistep carcinogenesis paradigm. Breast.

Keywords: Breast cancer; Lifetime risk; Despite this.

INTRODUCTION

In the glandular tissue of the breast, breast cancer develops in the lining cells (epithelium) of the ducts (85%) or lobules (15%). The malignant development is initially restricted to the duct or lobule (“in situ”), where it usually causes no symptoms and has a low risk of spreading (metastasis).

In situ (stage 0) tumours can grow over time and invade the surrounding breast tissue (invasive breast cancer), then spread to neighbouring lymph nodes (regional metastasis) or other organs in the body (distant metastasis). If a woman dies from breast cancer, it is due to the disease’s extensive prevalence.

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Treatment for breast cancer can be quite effective, especially if the disease is detected early. The microscopic cancer that has spread from the breast tumour through the blood is generally treated with a combination of surgical removal, radiation therapy, and medication (hormonal therapy, chemotherapy, and/or targeted biological therapy). This type of treatment, which can stop cancer from spreading and growing, saves lives.

THE BREAST HAS DIFFERENT PARTS

Breast cancer can start in a variety of places in the breast. The breast is an organ located over the upper ribs and chest muscles. There are two breasts, one on each side, with glands, ducts, and fatty tissue. The breast produces and delivers milk to feed neonates and infants in women. The size of each breast is determined by the quantity of fatty tissue in the breast.

The Breast has Different Parts

- Lobules are the glands that make breast milk. Cancers that start here are called

lobular cancers.

- Ducts are small canals that come out from the lobules and carry the milk to the nipple. This is the most common place for breast cancer to start. Cancers that start here are called ductal cancers.
- The nipple is the opening in the skin of the breast where the ducts come together and turn into larger ducts so the milk can leave the breast. The nipple is surrounded by slightly darker thicker skin called the areola. A less common type of breast cancer called Paget disease of the breast can start in the nipple.
- The fat and connective tissue (stroma) surround the ducts and lobules and help keep them in place. A less common type of breast cancer called phyllodes tumor can start in the stroma.
- **Blood vessels and lymph vessels** are also found in each breast. Angiosarcoma is a less common type of breast cancer that can start in the lining of these vessels.

A small number of cancers start in other tissues in the breast. These cancers are called sarcomas and lymphomas and are not really thought of as breast cancers.

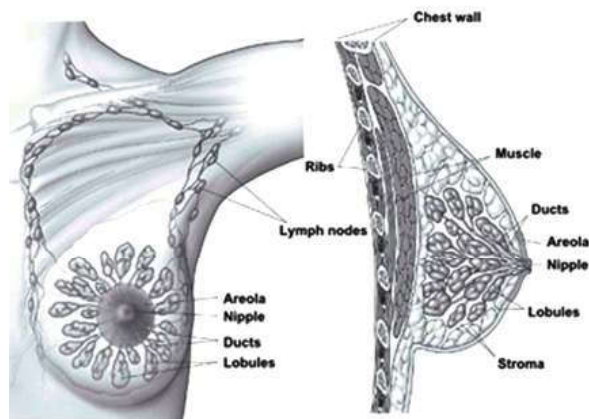


Fig. 1: Normal breast tissue.

How Breast Cancer Spreads

When cancer cells enter the blood or lymph system and are transferred to other parts of the body, breast cancer can spread. The lymphatic (or lymphatic) system is an element of the immune system of your body. It's a system of lymph nodes (tiny glands), ducts or veins, and organs that work together to collect and transport clear lymph fluid through the body's tissues to the bloodstream. Tissue by-

products and waste material, as well as immune system cells, are found in the clear lymph fluid inside lymph veins.

Lymph fluid is carried away from the breast by lymph veins. Cancer cells can enter those lymph veins and begin to proliferate in lymph nodes in the case of breast cancer.

- Lymph nodes under the arm are where the majority of the lymph veins in the breast drain (axillary lymph nodes)
- Internal mammary lymph nodes (lymph nodes inside the chest around the breastbone)
- Lymph nodes surrounding the collar bone (supraclavicular [above the collar bone] and infraclavicular [below the collar bone] lymph nodes)
- If cancer cells have spread to your lymph nodes, there's a good probability they've gone through your lymph system and spread to other places of your body (metastasized). However, not all women who have cancer cells in their lymph nodes will develop metastases.

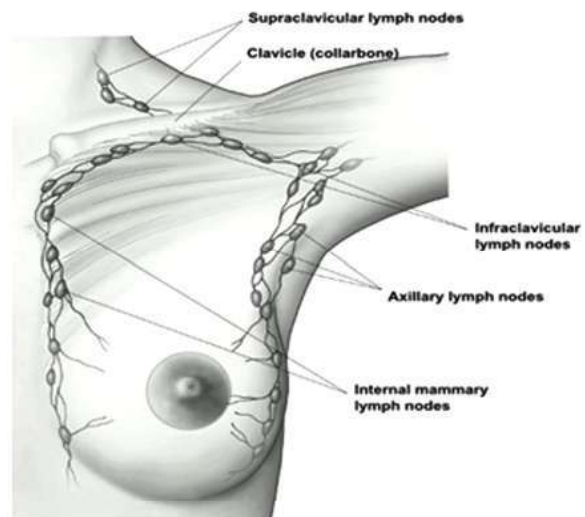


Fig. 2: Lymph nodes in relation to the breast.

TYPE OF BREAST CANCER

There are many different types of breast cancer. The type is determined by the specific kind of cells in the breast that are affected. Most breast cancers are carcinomas. The most common breast

cancers such as ductal carcinoma in situ (DCIS) and invasive carcinoma are adenocarcinomas, since the cancers start in the gland cells in the milk ducts or the lobules (milk-producing glands). Other kinds of cancers can grow in the breast, like angiosarcoma or sarcoma, but are not considered breast cancer since they start in different cells of the breast. Breast cancers are also classified by certain types of proteins or genes each cancer might make. After a biopsy is done, breast cancer cells are tested for proteins called estrogen receptors and progesterone receptors, and the HER2 gene or protein. The tumor cells are also closely looked at in the lab to find out what grade it is. The specific proteins found and the tumor grade can help decide the stage of the cancer and treatment options.

Signs and Symptoms

Breast cancer most commonly presents as a painless lump or thickening in the breast. It is important that women finding an abnormal lump in the breast consult a health practitioner without a delay of more than 1-2 months even when there is no pain associated with it. Seeking medical attention at the first sign of a potential symptom allows for more successful treatment. Generally, symptoms of breast cancer include:

- A breast lump or thickening.
- Alteration in size, shape or appearance of a breast.
- Dimpling, redness, pitting or other alteration in the skin.
- Change in nipple appearance or alteration in the skin surrounding the nipple (areola) and/or.
- Abnormal nipple discharge.

TREATMENT

Breast cancer treatment can be highly effective, achieving survival probabilities of 90% or higher, particularly when the disease is identified early. Treatment generally consists of surgery and radiation therapy for control of the disease in the breast, lymph nodes and surrounding areas (locoregional control) and systemic therapy (anti-cancer medicines given by mouth or intravenously) to treat and/or reduce the risk of the cancer spreading (metastasis). Anti-cancer medicines include endocrine (hormone) therapy,

chemotherapy and in some cases targeted biologic therapy (antibodies).

CONCLUSION

Breast cancer has been one of the most common and rising malignant diseases among women. Breast cancer is an illness that affects the sufferer, their family, and their community, as well as wasting a lot of money and spiritual resources. This cancer develops in the tissues of the breast, particularly the ducts (tiny tubes that deliver milk) and lobules (milk-producing glands). Breast cancer is not gender-specific, but it affects men seldom. Although there is no known cause for breast cancer, several risk factors have been found. There are distinct risk factors for different types of cancer. Some risk factors, such as cigarette smoking, alcohol consumption, and diet, are modifiable and dependent on one's lifestyle. Other elements, such as age, ethnicity, gender, and family history, are, on the other hand, permanent and immutable. It is not necessary to have one or more of these risk factors to be infected. This disease has an impact on a woman's physical, emotional, and social well-being. Social and familial support, on the other hand, can help to mitigate the harmful effects of disease.

References

1. Cancer-Its various types along with causes, symptoms, treatments and stages, in: cancer info guide. 2009. [15 Mar. 2010]. <http://www.cancer-info-guide.com/>
2. Mieszkowski M. R. Cancer - A biophysicist's point of view. In: Digital Recordings. 2006. Sep 04, [15 Mar 2010]. <http://www.digital-recordings.com/publ/cancer.html>.
3. Immune system. In: Kids Health. 2010. [16 Mar. 2010]. http://kidshealth.org/parent/general/body_basics/immune.html#.
4. Helmsberg A. 2010. [17 Mar. 2010]. <http://helmsberg.at/carcinogenesis.htm>.
5. Diet and Physical Activity: What's the Cancer Connection? In: Prevention & Early Detection. 2009. Oct 09, [17 Mar. 2010]. http://www.cancer.org/docroot/PED/content/PED_3_1x_Link_Between_Lifestyle_and_CancerMarch03.asp.
6. Margot New SEER Report Documents High Risk of Second Cancers in Cancer Survivors. *Oncology Times*. 2007;29(5):8. [Google Scholar]
7. Ershler W.B. The Influence of Advanced Age on

- Cancer Occurrence and Growth. In: Balducci L., Extermann M, editors. *Biological Basis of Geriatric Oncology*. Vol. 124. Springer US: 2005. pp. 75-87. [Google Scholar]
8. [17 Mar. 2010]. <http://www.breastcancersource.com/?itemId=2784236>.
 9. Khuwaja G. A., Abu-Rezq A. N. Bimodal breast cancer classification system. *Pattern Analysis and application*. 2004;7:235-242. [Google Scholar]
 10. Breast cancer process india, Breast cancer cost india, Breast cancer, delhi India. *Breast cancer information and resources*. 2010. Apr 13, [14 April 2010]. <http://www.digforthecure.org/breast-cancer-process-india-breast-cancer-cost-india-breast-cancer-delhi-india.html>

