Perspective

Breast Cancer and its Types

Tabitha Davis†

Introduction

The breast is made up of a variety of tissues that range from very fatty to quite dense. A network of lobes exists within this tissue. Each lobe is made up of lobules, which are tiny tube-like structures that contain milk glands. Milk is transported from the lobes to the nipple by tiny ducts that connect the glands, lobules, and lobes. The nipple is in the centre of the areola, which is the darker area surrounding the nipple. The breast also has blood and lymph channels running through it. The cells are nourished by blood. The lymphatic system removes waste items from the body. Lymph nodes, which are little bean-shaped organs that help fight infection, are connected to lymph vessels. Lymph nodes are found in several locations across the body, including the neck, groyne, and belly. The lymph nodes around the breast, such as the lymph nodes under the arm, are referred to as regional lymph nodes of the breast.

When healthy cells in the breast alter and expand out of control, they create a tumour, which is a mass or sheet of cells. Tumors can be malignant or noncancerous. A malignant tumour is one that has the potential to grow and spread to other regions of the body. The term "benign tumour" refers to a tumour that can develop but not spread.

Breast cancer spreads when it invades nearby organs or other regions of the body, or when breast cancer cells travel through blood arteries and lymph vessels to other parts of the body. This is referred as a metastasis.

This guide covers non-invasive (stage 0) as well as early-stage and locally progressed invasive breast cancer (stages I, II, and III), as well as non-invasive (stage 0). The stage of breast cancer refers to how far the cancer has progressed as well as whether or not it has spread. Breast cancer most usually spreads to adjacent lymph nodes, but it can also spread to other parts of the body, including the bones, lungs, liver, and brain. Metastatic breast cancer, often known as stage IV breast cancer, is the most advanced form of the disease. Lymphoma involvement, on the other hand, is not always indicative of stage IV breast cancer.

Breast cancer can recur locally, meaning in the same breast and/or regional lymph nodes, following initial treatment. A distant recurrence, also known as a metastatic recurrence, can occur elsewhere in the body.

Types

Breast cancer is classified as either invasive or non-invasive. Breast cancer that has spread to nearby tissues and/or distant organs is known as invasive breast cancer. Breast cancer that is non-invasive does not spread beyond the milk ducts or lobules of the breast. The majority of breast malignancies begin in the ducts or lobes, and are referred to as ductal carcinoma or lobular carcinoma. The majority of breast cancers begin in the cells that line the milk ducts, and they are caused by these tumours.

In situ Ductal Carcinoma (DCIS). This is a non-invasive malignancy that has just affected the duct

Editorial Office, International Journal of Clinical Skills, London, United Kingdom

†Author for correspondence: Tabitha Davis, Editorial Office, International Journal of Clinical Skills, London, United Kingdom, Email: ijclinicalskill@journalres.com

and has not moved beyond it. Ductal carcinoma that is invasive or infiltrating. This is cancer that has spread beyond the duct's confines. Invasive lobular carcinoma is a type of cancer that spreads throughout the body. This is cancer that began in the lobules and has since spread to other parts of the body.

Subtypes of breast cancer

Breast cancer can be classified into three subtypes based on the results of particular tests performed on a sample of the tumour.

Hormone receptors are present

"Hormone receptor positive" breast tumours express oestrogen receptors (ER) and/or progesterone receptors (PR). Cells have proteins that act as receptors. "ER positive" tumours are those that have oestrogen receptors. "PR positive" tumours are those that have progesterone receptors. For a tumour to be classified as hormone receptor positive, only one of these receptors must be positive. The hormones oestrogen and/or progesterone may play a role in the growth of this type of cancer. Hormone receptor-positive tumours can strike at any age, but they are more common in postmenopausal women. Estrogen and/or progesterone receptors are found in about two-thirds of breast tumours. "Hormone receptor negative" cancers are those that lack these receptors.

Positive for the HER2 gene

Human epidermal growth factor receptor 2 (HER2) is required for the growth of around 20% of breast tumours. "HER2 positive" malignancies have several copies of the HER2 gene or high amounts of the HER2 protein. "Receptors" is another name for these proteins. The HER2 gene produces the HER2 protein, which is present on cancer cells and plays a role in tumour cell proliferation. Breast tumours that are HER2-positive grow more quickly. They might also be positive or negative in terms of hormone receptors. "HER2 negative" cancers contain no or low levels of the HER2 protein and/or few copies of the HER2 gene.

Negative three times over

The term "triple negative" refers to a tumour that does not express ER, PR, or HER2. Triple-negative breast cancer accounts for roughly 15% of all invasive breast cancers. Triple-negative breast cancer appears to be more common in younger women, particularly those of African-American and Hispanic descent. Women with a mutation in the BRCA1 gene are more likely to develop triple-negative breast cancer. All people under the age of 60 who have triple-negative breast cancer should be examined for BRCA gene abnormalities, according to experts.