

Breast cancer

Introduction

Breast cancer develops most commonly from the cells of the lactiferous ducts in breast. It is seen more commonly in women more than 40 years age.

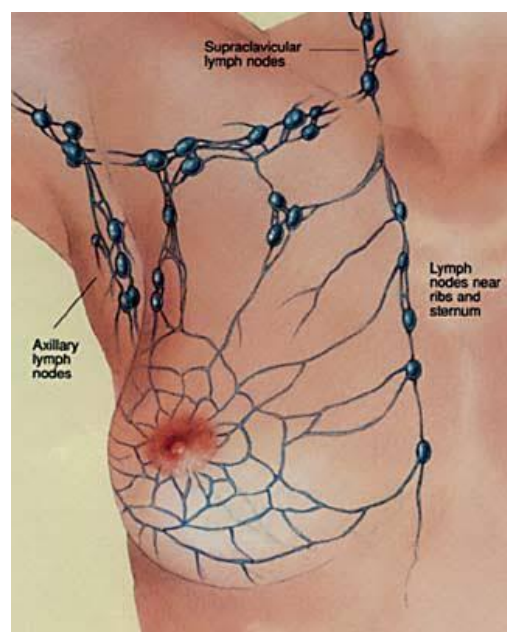
Breast cancer is a major public health problem for women throughout the world. In India, the projected incidence of breast cancer in females is 1 in 29 females in their lifetime. An increasing trend is seen in breast cancer incidence specially in urban cities.

Multiple factors are associated with the growing incidence of breast cancer but more than half women who develop breast cancer have no identifiable risk factors, other than Age and female sex. There are various genetic predispositions which make a woman more susceptible to breast cancer.

Women usually complain of a lump in the breast noticed while having a bath. These lumps are usually painless hence at times ignored.

Regular self-clinical examination helps to detect such lumps in an early stage.

Breast cancer spreads via the lymphatic system to the axillary lymph nodes, addressing which is also an important factor in the management of breast cancer.



Risk factors

Familial: The risk of developing breast cancer increases 1.5 to 3 times in a woman who has a mother or sister with breast cancer.

Woman detected with breast cancer at age < 50 year should be evaluated for genetic testing*

Hormonal: Endogenous estrogens play an important role in development of breast cancer.

Females with early age of menarche, nulliparity or late age of first pregnancy (>35yr old), all increases the estrogens and make such woman more susceptible for breast cancer than general population.

In postmenopausal women, obesity and use of Hormonal Replacement therapy, are associated with increased risk of breast cancer.

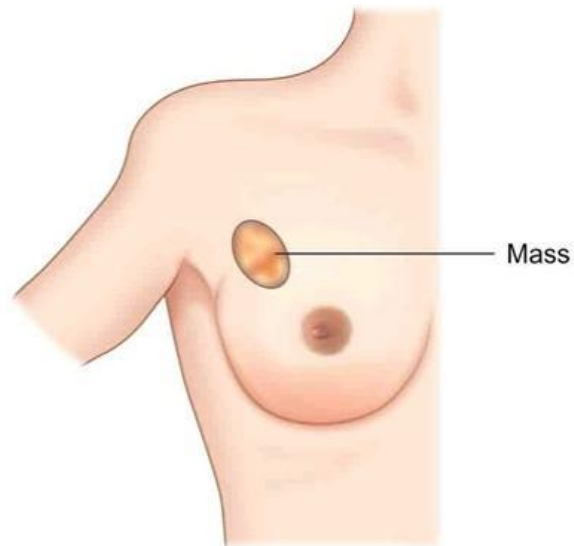
Breastfeeding appears to provide a protective effect and reduces the incidence of breast cancer

Dietary and lifestyle factors: Alcohol intake has been shown to have a linear risk factor. Obesity in a postmenopausal is associated with increase risk and mortality.

Clinical Presentation

- **Lump in the breast**, painless (most common). At least tumour should become 1 cm to clinically palpable
- **Bloody nipple discharge** is the second common presentation
- **Ulceration** over the breast
- **Axillary lymph node enlargement:** lump around the armpits can be a presenting symptom

- **Bone pain, tenderness, and pathological fracture** are usually late presentation of the disease.



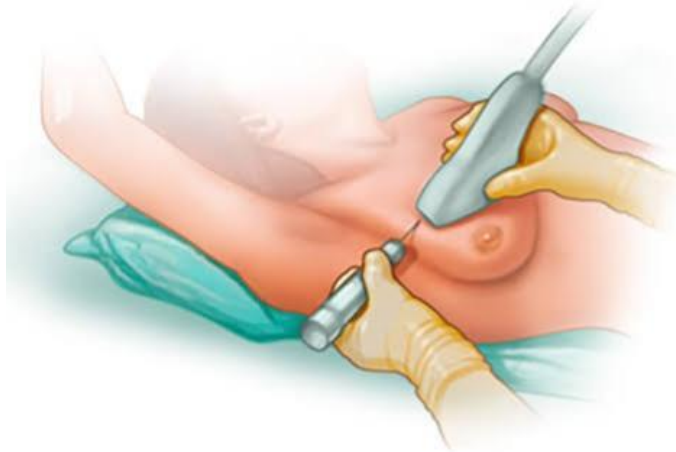
- Self breast examination plays a major role in detecting early breast cancers



Investigations

Tissue Diagnosis: The presence or absence of carcinoma can only be reliably determined by tissue Biopsy. Diagnosis can be obtained either by FNA or core

biopsy, which can be ultrasound guided. Core biopsy gives a more suitable specimen for complete evaluation and further receptor status testing.



Receptor status: At present, along with Tumor size and spread, its biological status is also important for complete staging of the disease. It involves assessing the Estrogen Receptor, Progesterone receptor and Her2-neu expression

Mammography: Mammogram involves exposing the breast to X-rays to the breast and to the surrounding tissue. A Mammography detects a breast cancer around 1.5years in advance before it becomes clinically palpable

Screening Mammography is advised in all women >40 years of age and earlier if they have certain risk factors.

Ultrasound: It is the preferred method of testing in young women with dense breast, in pregnant and lactating mothers. It's cheap and avoids radiation exposure.

Whole Body PET CT scan: It is a single scan which helps to identify various metastasis in the body and shows presence of activity at these levels. A small amount of radioactive glucose (sugar) is injected into a vein. The PET scanner rotates around the body and makes a picture of where glucose is being used in the body. Malignant tumor cells show up brighter in the picture because they are more active and take up more glucose than normal cells do.

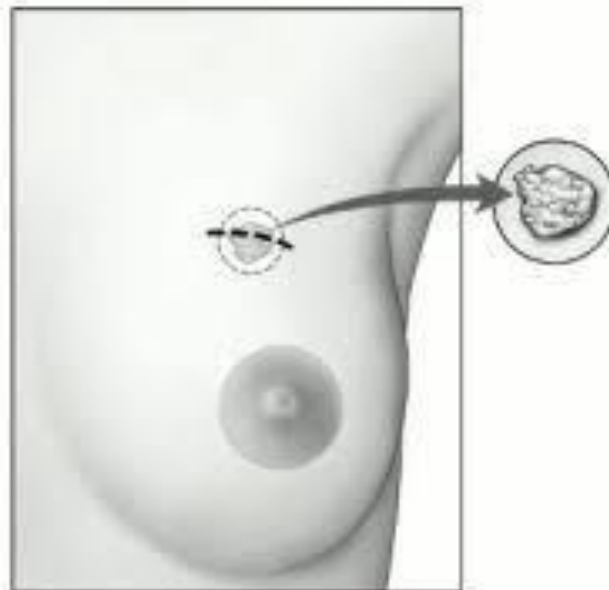
Tc99 Bone scan: Done to identify any bony metastasis present.

Treatment

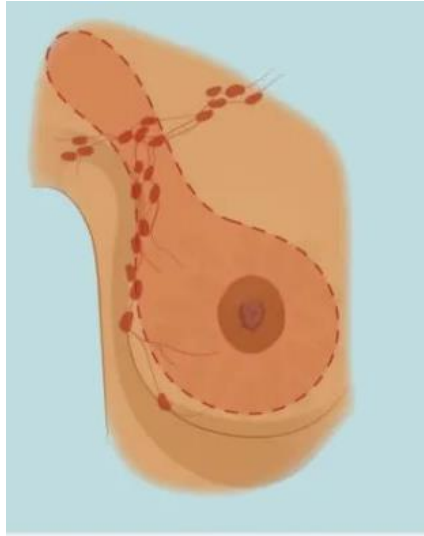
Management of breast cancer is a multimodality treatment, involving surgery, chemotherapy and radiation depending on various aspects of the disease, like stage, grade, etc.

Early breast cancer: In patients with early breast cancer , i.e. Stage I or II disease, the initial management is usually surgical. In these patients, discussion is regarding to offer breast conservative surgery or mastectomy (Removing complete breast) with or without reconstruction. In these patients, initial chemotherapy may be used to shrink the tumour to allow Breast conservative surgery.

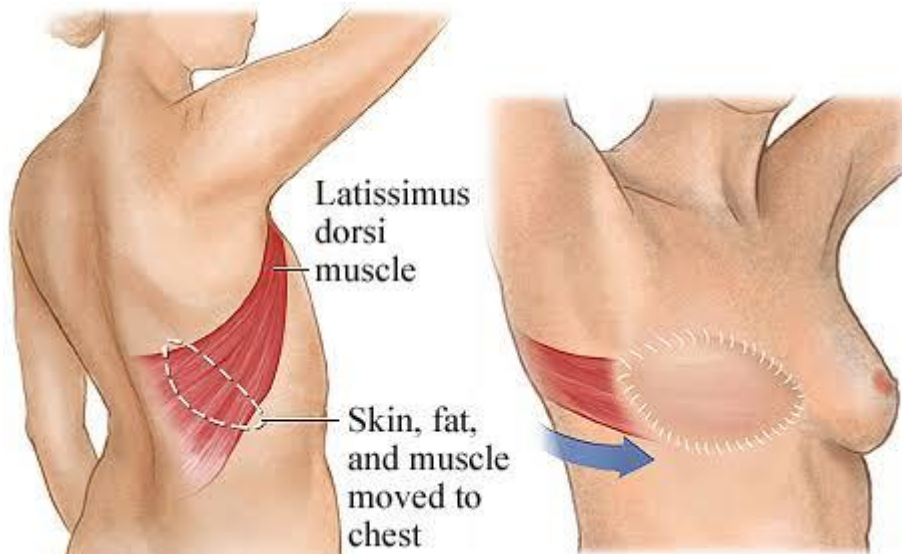
- **Breast conservation surgery:** Tumour is removed along with a rim of normal tissue and send for frozen section to assess the margins status. According to multiple trials, mastectomy and breast conservation surgery demonstrate equivalent survival.



- **Mastectomy** : Involves removal of complete breast tissue, areola, nipple and axillary lymph nodes



- **Reconstruction post Mastectomy:** Advances in plastic surgery has made immediate reconstruction an option for patients who undergo mastectomy. Various options include Implant, tissue expander, muscle flaps.



Locally advanced breast cancer: It includes two entities, 1) Operable breast cancer 2) Inoperable breast cancer.

In Inoperable breast cancer, treatment involves multidisciplinary team, including Neoadjuvant chemotherapy, surgery and Radiation therapy.

Metastatic breast cancer: It is defined as tumor spread beyond the breast, into the bones, lungs, etc

The treatment goal in metastatic breast cancer include prolongation of life, control of tumour burden, reducing cancer related complications and to maintain a good quality of life.

Systemic Therapy

The goal is to prevent the recurrence of breast cancer by reducing the micrometastatic deposits of tumour which are present at the time of diagnosis

It is believed that in early stages of breast cancer, microscopic tumour cells are present throughout in the body.

Chemotherapy: Multiple cycles of chemotherapy including taxanes and anthracyclines as part of the regiment are recommended for majority of patients with node positive and higher risk patient with node negative disease.

Hormone positive patients, I e. ER /PR positive patients receive medicines to prevent recurrence in such patients for a minimum period of 5years

Anti-her2 neu therapy involves giving Transtuzumab injection for a period of 12 months, for individuals with Her-2 receptor positivity on biopsy.

Immunotherapy is being studied for the palliation of advanced breast cancer. It can fuel the body's production of cancer-fighting cells or help healthy cells identify and attack cancer cells.

Follow up

Every 3-6month follow up for the first 3years, which includes annual mammography.

Survival

Data from USA, suggest the 5 year survival for early breast cancer is 95-99%, for Locally Advanced breast cancer it is 80-86% and for Metastatic cancer it around 20-30% only.

Routine self examination, regular check up, early doctor consultation helps to identify cancer early and prompt treatment can be initiated.