Breast Carcinoma- A Review

Shreya Rajkumar¹*, P. Darwin¹ and C. T. Karthikeyan¹

¹Department of General Surgery, Sree Balaji Medical College and Hospital, Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu, India.

Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2020/v32i1430600

Editor(s):
(1) Dr. Giuseppe Murdaca, University of Genoa, Italy.
(2) Dr. Rahul S. Khupse, University of Findlay, USA.

Reviewers:
(1) Jennifer Schroeder, Millikin University, USA.
(2) Emmanuel O. Adesuyi, Institute of Nursing Research, Nigeria.
(3) Franco Cervellati, University of Ferrara, Italy.

Complete Peer review History: http://www.sciarticle4.com/review-history/54202

ABSTRACT

Breast malignancy has fast overtaken ovarian malignancy as the leading cause of death in women. A number of factors attribute to the rise in breast cancer, including obesity, food habits and carcinogen exposure. This article is a review of breast malignancy, and its pathological nature, and highlights the significance of axillary staging as a prognostic factor, and hence the importance of axillary investigation.

Keywords: Circinoma; malignancy; breast cancer; hormones.

1. INTRODUCTION

Breast cancer is the most common cause of cancer-related deaths among women. As size of primary breast cancer increases, a number of cancer cells are shed into the cellular spaces and these are transported through the lymphatic network. These malignant cells may then proliferate through the lymph node capsule and fix to contiguous structures in the axilla, including the chest wall [1]. Around 95% of all women who die of breast malignancy have distant metastatic disease and traditionally the most important prognostic coefficient of disease-free and overall survival was the axillary lymph node status. Local therapy for all patients with nonmetastatic breast...
cancer consists of surgical resection, with consideration of postoperative radiation if lumpectomy is performed. Increasingly, some systemic therapy is delivered before surgery [2]. Tailoring postoperative treatment based on preoperative treatment response is under investigation. Metastatic breast cancer is treated according to subtype, with goals of prolonging life and palliating symptoms [3]. A retrospective study has been assigned to highlights the breast carcinoma and its most common cause of cancer-related deaths among women [4]. The endogenous hormones play a central role in this respect as well. Surgery has been the main treatment modality for the last 75 years. All patients are subjected to surgery unless they are unfit due to other reasons [5]. The detailed description of radical mastectomy by Halstead of Baltimore was given in 1894. Various surgical procedures have evolved during the ensuing years. Modifications and improvisations have been made by extensive research on various methods. Now Auchincloss’s Modified Radical Mastectomy and Breast Conservation Surgery have become the mainstay of modern surgical treatment. Hence greatest importance is to be given towards its prevention and early detection [6,7].

2. CASE HISTORY

Female breast carcinoma was the first tumor reported as far back in history as the time of the Egyptian civilization. In ancient Greece, Hippocrates, who was one of the fathers of modern medicine, advocated surgery as the only treatment option in these patients. During the time of Celsus, the prototype of radical mastectomy was performed. The metastatic nature of the disease was recognized by LeDran (1685-1790), [8] who advocated the removal of primary and axillary lymph nodes in continuity. Breast cancer is a major issue of all women, regardless of race, socioeconomic status or country of origin. It is one of the top ten killers of adult population in our country. However, this incidence is not the same in all populations. Thus in 1982, the incidence in Madras was 15.8% while at Manipur was only 7.2%. The same is true in western countries as well. It is not only the occurrence that varies, but also the prognosis. For example though the incidence of breast cancer in African-American women is lower than in Caucasian women is, they have a higher mortality from breast cancer, and are less likely to survive 5 years after diagnosis [9]. A number of factors are attributed to this- like the younger age at diagnosis, later stage of detection, different incidence of negative tumor receptors and lesser degree of response to treatment in African-American women.

3. ROLE OF AXILLARY METASTASIS AND REQUIRED INVESTIGATIONS

Breast cancer is the most common cause of cancer-related deaths among women. As size of primary breast cancer increases, a number of cancer cells are shed into the cellular spaces and these are transported through the lymphatic network. These malignant cells may then proliferate through the lymph node capsule and fix to contiguous structures in the axilla, including the chest wall. Usually, the axillary lymph node groups are involved sequentially from the lowest (the level I) to the central (the level II) to the apical (the level III) groups of the lymph nodes [10].

Around 95% of all women who die of breast malignancy have distant metastatic disease and traditionally the most important prognostic coefficient of disease-free and overall survival was the axillary lymph node status. The females with negative nodal disease had less than a 30% risk of recurrence, compared with as high as a 75% risk for women with positive nodal disease. The status of the axillary lymph node metastasis, in addition to being the most important prognostic tool in this group of patients, has a critical place in the management of this cancer. For many many years, the axillary lymph node dissection (ALND) was a method of choice for the axillary nodal evaluation to stage and treat effectively the metastatic lymph node involvement. However, for the cases that had no node involvement, axillary dissection gave no advantages and it was also sometimes associated with certain significant complications such as lymphoedema, infection of wound, stiffening, weakness of shoulder, numbness and pain of the affected arm. Later, the method of biopsy of sentinel lymph node (SLNB) was developed [11].

This method has proven to be a valuable tool in determining whether the malignancy has spread from its site of origin and for the staging of the axilla. It has been proven to be a very effective alternative to ALND. Those patients whose SLNB is disease-free require no more treatment and are thus spared from unnecessary surgery for the axilla.
Despite the general acceptance of this method in practice, sentinel node biopsy has certain drawbacks; it is a meticulous and slow procedure for surgeons in the theatre, needs the administering of radioisotopes to patients, and requires many microscopic sections for the final pathological examination. Also this method is not freely available in all centres and it is quite expensive [12]. A sonological examination is recommended by the previously done studies in order to find suspicious involved lymph nodes in the axilla. High resolution sonology, which can help to establish the structural features of the axillary lymph nodes and the structural changes which may suggest metastasis, is now being accepted as an important non-invasive method increasingly [13].

Breast cancer is a highly heterogeneous disease that is developed by mutual impact of genetic risk factors and environmental factors. It leads to progressive aggregation of genetic and epigenetic changes in breast cancer cells. Although epidemiological evidence highlight the presence of risk factors (such as age, obesity, alcohol use, and exposure to estrogen in lifetime), family history of breast cancer is the strongest one. Almost 20% of all breast cancers have family origin, and etiologically are dependent to a specific predisposing gene of that disease [14].

4. NUTRITIONAL FACTORS AND BREAST CANCER

Among the nutritional factors, weight gain and high calorie intake are two causes of breast cancer development. Kopans and Greenwald put that obesity and high BMI in post-menopause increases the risk of breast cancer; whereas, there is not such relationship in pre-menopause women [15]. For the first time in 1940, research findings showed that increased use of fat leads to breast tumor in animals Howe and Goodwin reported a positive correlation between high fat intake and the risk of breast cancer. Another study reported a positive significant relationship between animal protein intake and the risk of breast cancer. In general, the relationship with the risk of breast cancer development is uncertain. On the one hand, calorie intake leads to weight gain and obesity; on the other hand, it results in increased height in childhood and preterm menopause. Both factors can establish the context for cancer development in future [16].

5. CONCLUSION

Breast cancer is on the rise, and claims more victims every minute. Axillary metastasis indicates advancement of the disease, and indicates a poorer prognosis than non metastatic disease. Hence, investigations like sonology of the axilla, and sentinel lymph node biopsy play significant roles in predicting the prognosis of the patient as well as guiding surgeons in the appropriate treatment.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


