



QUADRANTWISE INCIDENCE OF BREAST CANCER - NORTHERN KERALA

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KEYWORDS :

Introduction

The incidence of breast cancer is increasing worldwide, which is partly considered to be due to mass screening programs resulting in the discovery of clinically occult breast lesions.¹ 2018 estimates of cancer incidence and mortality produced by the International Agency for Research on Cancer, with a focus on geographic variability across 20 world regions identified breast cancer as the most commonly diagnosed cancer and the leading cause of cancer death among females.²

Over 100,000 new breast cancer patients are estimated to be diagnosed annually in India.³ Breast cancer is the most common cancer among urban women in India and second most common among rural women in India.⁴ The age adjusted incidence rate of breast cancer in India is as high as 41 per 1,00,000 women and mortality-to-incidence ratio was found to be as high as 66 in rural areas.⁴ Cancer of the male breast accounts for about 1% of all malignancies in male.⁵

Breast cancer always evolves silently, most patients may present with an accidentally discovered breast lump, change of breast shape or size or nipple discharge. It is a highly heterogeneous disease, with a wide range of biological, pathological and clinical characteristics. Numerous clinical studies, dating back decades, have shown that the upper outer quadrant (UOQ) of the breast is the most frequent site of carcinoma, but an adequate explanation for this asymmetric occurrence of breast cancer within the breast has never been established. This basic observation has become textbook fact and remains true for countries as different as India, the West Indies, and Italy and irrespective of race within any one country.⁶⁻¹⁰

Furthermore, the UOQ is not only the most common site for cancer but also, in many benign breast conditions, fibroadenomas, breast cysts, and phyllodes tumours.^{11,12} The UOQ is also the most frequent site of male breast cancer.^{13,14} However, it is interesting to note that the reported incidence of breast cancer in the UOQ of the breast appears to rise disproportionately with year of publication. In 1926, 30.9% of breast cancer was reported to be in the UOQ but reports between the years 1947–1967 suggested that the proportion of breast cancer in the UOQ was 43–48%.¹⁵⁻¹⁹ A study in 1994 reported 60.7% of breast cancers in the UOQ.⁹ Most of these studies are old. In a recent study in the UK, the distribution was as following, 52.5% of the cases were in the UOQ of the breast.²⁰

However, the factors involved remain contentious, but it has been suggested that tissue mass is an important contributor to asymmetry in cancer incidence.²¹ The current study was done to document the quadrant involvement among breast cancer patients in Kerala over the years.

Methodology

It was a retrospective record-based study done in the department of general surgery in a government tertiary care centre in Kerala. Records from 2016 to 2020 were examined. All cases of breast cancer that received primary treatment in the institute were included. Age was summarized as mean and categorized into 10-year intervals. Quadrants were summarized as proportions.

Results

There were a total of 1374 cases of breast cancer recorded from 2016-2020. The age of the participants ranged from 23 to 94 years. The

distribution of age categories is given in Figure 1. Around 60% of the patients were aged between 40 and 59 years. The mean age was 53.7 (11.6) years.

Out of the 1374 patients, 1148 (83.5%) of patients had the tumour restricted to one location, while the rest had larger tumours that were spread across more than one quadrant. Tumour location of patients is shown in figures 2 and 3. The most common location was upper outer quadrant (48%) followed by upper inner quadrant (19.5%). In patients with multiple quadrant involvement as well, upper outer quadrant was most commonly involved (80.1%).

Figure 1: Age distribution of patients admitted for breast cancer in department of general surgery in a tertiary care hospital in Kerala from 2016-2020 (N=1374)

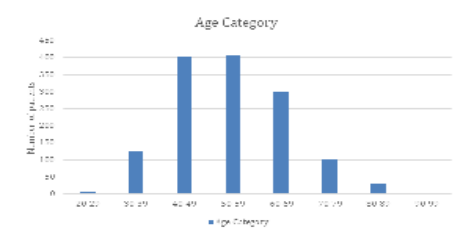


Figure 2: Quadrant Involvement seen in patients seeking care for breast cancer in a tertiary care centre in Kerala from 2016-2020 (N=1374)

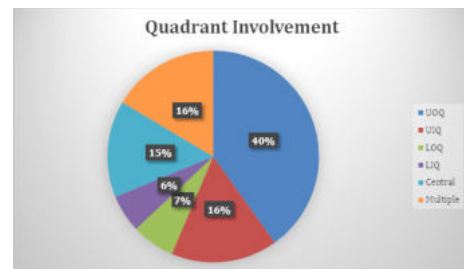


Figure 3: Quadrant Involvement in Patients with extensive tumours extending over more than one quadrant (N=226)



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