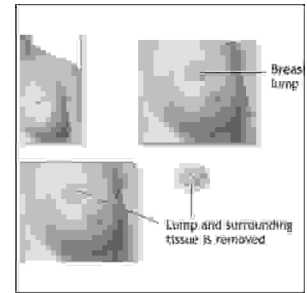


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MALIGNANCY IN BREAST LUMPS



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ABSTRACT... dr_muttahhar@yahoo.com, muttahhar@hotmail.com. **Objective:**(i) To assess the frequency of malignancy in patients presenting with breast lumps. (ii) To find the age related frequency of malignancy in these cases. **Design** Observational study. **Setting:** Department of General Surgery, Combined Military Hospital Lahore. **Period:** From Jan 1998 and Jan 2000. **Patients and methods:** All patients presenting with breast lumps were included in the study. All patients had FNAC of the lump. Patients with signs or suspicion of malignancy were subjected to core needle or excisional biopsy and pathologic diagnosis confirmed. Cases proven malignant on FNAC and showing signs of malignancy under went mastectomy, followed by histopathological diagnosis. Non-diagnostic smears were repeated or subjected to biopsy of the lesion. Cases of suspicious smears also underwent biopsy for histopathological diagnosis. **Results:** 277 patients with breast lumps managed at CMH Lahore were studied. 24.2% were diagnosed as having a malignant lump. Mean age in the present study is 32.96yrs for benign and 51.81yrs for malignant breast lumps. **Conclusions:** Frequency of breast cancer in breast lumps was 24.2% in the total cases in the study, almost one in 4 female patients coming to a surgical clinic with breast lumps can have a malignant breast lump. Breast cancer frequency is negligible under the age of 30 yrs. The probability of diagnosing of a breast lumps as malignant is 1 in 3 in 31-40 yrs age group, 2 in 5 in 41-50 yrs age group, and more than 1 in 2 thereafter. There is a greater frequency in younger age group in the population in our study as compared to international studies.

INTRODUCTION

One-fourth of all women suffer from breast disease in their lifetime¹. Breast Cancer is the most common type of cancer in women, the second leading cause of cancer death, and the third most common cancer overall, throughout the world. The world burden of breast cancer is around 1 million new cases diagnosed each year. The

most common presentation of carcinoma breast is breast lump. The incidence is rising worldwide, probably due to increase in the ageing population and earlier detection due to newly developed techniques of FNAC ultrasound and steriotactic FNAC². The triple test approach to screening of mammary lesions comprises clinical assessment, mammography and most importantly,

FNAC³. Of these modalities FNAC of breast lump was associated with better diagnostic yields, with sensitivity being 90% in diagnosing breast lump^{4,5}. In the western world breast cancer accounts for 27% of all female cancers and one out of fourteen women can expect to develop breast cancer in their lifetime^{6,7}. It is also the most frequent female cancer in Pakistan, almost 26.6%^{8,9,10}. Moreover, a higher incidence in younger age has been observed in our population^{11,12}.

The most common sign of breast malignancy is a new lump or mass¹³. Other signs include a generalized swelling of a part of the breast, skin dimpling, nipple pain or retraction, redness or scaliness of the nipple or areola, a discharge other than milk, ulceration and signs of metastasis. Though, over 80% of breast lumps are benign, every breast lump must be examined and evaluated by a surgeon¹⁴. Early diagnosis is the key to increased survival. Each patient's tumour carries a genomic and a proteomic pattern that requires tailored therapy jointly designed by surgical oncologist, pathologist, radiologist, medical and radiation oncologist¹⁵.

An over all perspective of the frequency of various breast problems can be gained from the analysis of series of patients in surgical outpatients department. 30% of these patients after thorough examination are found to be disease free, 40% are found to be having fibrocystic disease. On biopsy, slightly over 10% have cancer and 7% have fibroadenoma¹⁶.

The present work aims to set a guideline for decision-making when dealing with patients of different ages presenting with a breast lump at a surgical clinic in our set up.

The incidence of breast cancer increases with age¹⁶. Breast cancers is rarely seen in teens¹⁷. Thereafter, there is a steep rise up to 40 yrs of age followed by a comparatively gradual rise⁶. The cumulative risk of developing breast cancer is 1 in 1906 for patients up to 25 yrs, 1 in 217 by 40; 1 in 50 by age 50; 1 in 24 by 60 and 1 in 10 by 70 yrs¹³. In other terms the risk is 0.5% for

patients between 20 and 40 compared with 5% between 50 and 70 years⁶. The risk in women having a first degree relative with breast cancer is 1.7 to 2.5 times whereas it is 1.5 in those having breast cancer in 2nd degree relative^{6,18}. Single and nulliparous married women are 1.4 to 2 times at greater risk^{6,19}. Women younger than 20 yrs at first birth have half the chances of developing breast cancer compared with nulliparous¹³.

Women diagnosed of having proliferative breast disease without atypia have a 1.5 to 2 times greater risk^{6,20,21}. Atypical hyperplasia increases the risk by 3.5 to 5 times^{20,21,22}. The risk rises 8 times if a patient with atypical hyperplasia has a family history of breast cancer²². Inheritance of mutated BRCA-1, BRCA-2 genes and a mutation of p-53 tumor suppression gene increase the risk for breast cancer. Early menarche and late menopause increases risk of breast cancer⁶. The factors, which have minor or little significant increased risk of breast cancer, include consumption of alcohol, prolonged (over 10 yrs) use of contraceptive pills hormone replacement therapy for long periods multiple papillomatosis and hyperplasia with gross atypia.

METHODS

Aim of study

The study was designed to assess the frequency of breast malignancy in breast lumps presenting to a surgical unit, and to find out the age related frequency of malignancy in these cases. This study gives an insight into the degree of suspicion which one should have while managing breast lumps in females of different ages in our population.

Study design

This was an observational study of a section of surgical patients reporting to Department of General Surgery, Combined Military Hospital Lahore. The study was carried out between Jan 1998 and Jan 2000 for a period of two years.

PATIENTS AND METHODS

Setting

Combined Military Hospital, Lahore, is more than 500

years old, and a 800 bedded hospital. It serves as a referral hospital and postgraduate teaching center in all disciplines of medicine and surgery. The department of general surgery is a well-established unit with an average attendance of 80-100 outpatients per day and has inpatient units of 160 beds.

Sample

All patients presenting with breast lumps in female OPDs were included in the study, drawn primarily from armed forces personnel and their families. Patients already diagnosed with malignancy elsewhere were not included in the study.

Statistical Analysis

All analysis were carried out with the help of software of statistical package for social science (SPSS V-7.5). All data has been compiled on the SPSS data sheets. Analysis has been carried out for associations between age and histopathological diagnosis.

Outline of Study

Female cases presenting to the Department of General Surgery with symptoms related to breast were, after history taking, subjected to clinical examination. Cases with diagnosis of breast lumps were registered. Patient's profile and clinical examination findings were recorded in a performa prepared after study of international literature. These cases were referred to department of pathology for FNAC examination of the lump.

Based on clinical examination and FNAC results patients were managed further: Cases with a histological diagnosis of benign lesion and clinically having mobile lump with no clinical signs of malignancy were reassured and asked for repeated follow ups at 6 month intervals. They were advised breast self-examination and to report back if any suspicious change occurs.

Cases with cytology diagnosis of benign lesion but showing signs or suspicion of malignancy were subjected to core needle or incision biopsy and pathologic diagnosis confirmed.

Cases proved malignant on FNAC and showing signs of malignancy under-went mastectomy, followed by histopathological diagnosis. Non-diagnostic smears were repeated or subjected to biopsy of the lesion. Cases of suspicious smears also underwent biopsy for histopathological diagnosis. Apprehensive patients had their breast lumps removed at their request and subjected to histopathology.

DIAGNOSTIC INSTRUMENTS

FNAC examination of the breast lump has been used as the initial diagnostic instrument. Tissue sample by core needle, incision or excision biopsy were subjected to histopathological examination on cases diagnosed as suspicious smears and non-diagnostic aspirates on FNAC. Histopathological examination of mastectomy samples and lumps excised on clinical suspicion of malignancy and patient apprehension were also the basis of diagnosis.

RESULTS

Three hundred and thirty five cases were registered in the study at their first visit. Forty-two patients did not report back with the results of investigations. Sixteen patients were lost after FNAC. They had non-diagnostic aspirates and final histological diagnosis was not possible. The remaining 277 patients with breast lumps managed at CMH Lahore were studied. These patients had a definitive diagnosis of the breast lump. Patients were grouped into 8 age groups. The number of cases and their percentage frequency in age groups is enlisted in table I.

FREQUENCY OF MALIGNANCY IN BREAST LUMPS

Of the total n=277 cases, n= 210 (75.8%) were diagnosed as benign breast lumps while n=67 (24.2%) were diagnosed as having a malignant lump. Hence the incidence of malignancy in all cases of breast lumps studied in the present work is 24.2% (Fig-1).

INCIDENCE OF MALIGNANCY IN BREAST LUMPS IN THE AGE GROUPS

The frequency of malignancy in cases of breast lumps in

each age group studied, was:

- 00.0% in 11 to 20 yrs age group
- 01.4% in 21 to 30 yrs age group
- 23.2% in 31 to 40 yrs age group
- 38.9% in 41 to 50 yrs age group
- 52.0% in 51 to 60 yrs age group
- 70.6% in 61 to 70 yrs age group
- 75.0% in 71 to 80 yrs age group
- 100% in above 81 yrs age group

These frequencies are depicted graphically in Figure-2

Age groups	Frequency	%age
11 - 20 yrs	36	13%
21-30 yrs	71	25.6%
31-40 yrs	69	24.9%
41-50 yrs	54	19.5%
51-60 yrs	25	9%
61-70 yrs	17	6.1%
71-80 yrs	4	1.4%
Above 81 years	1	0.4%
Total	277	100%

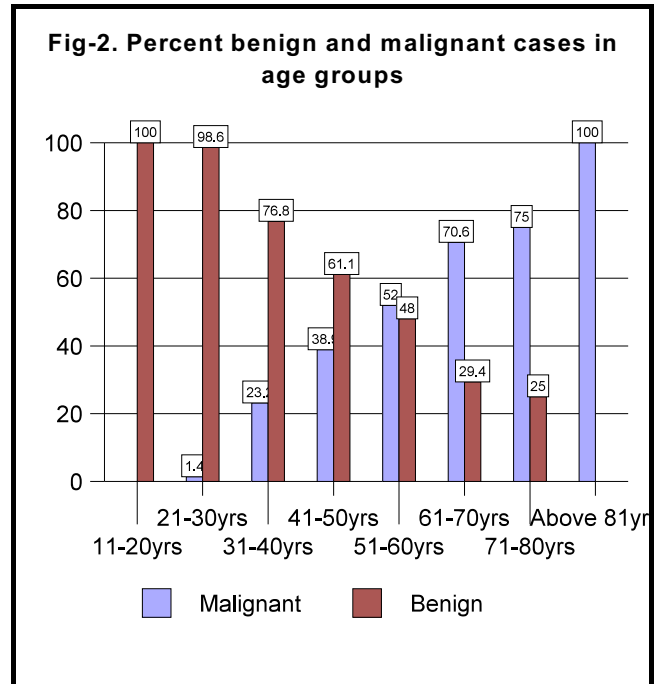
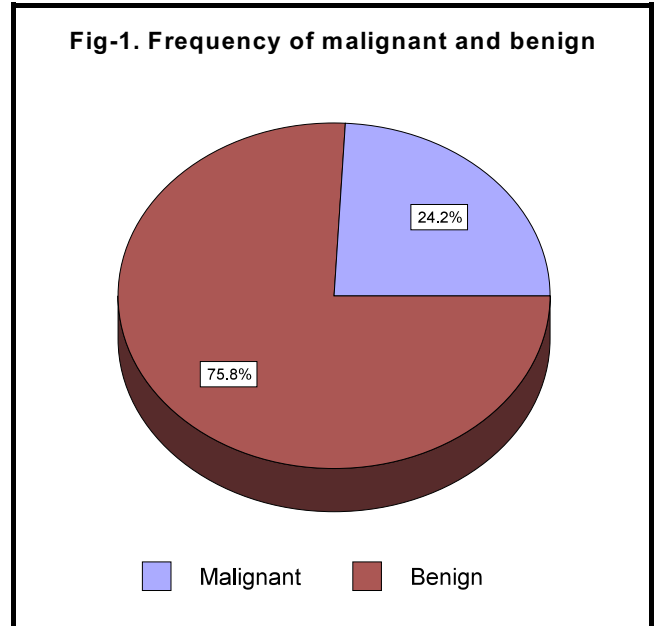
Mean age at which a diagnosis of benign and malignant breast lump was made in the present study is 32.96yrs for benign and 51.81yrs for malignant breast lumps. This along with the standard deviation is depicted in Figure-3.

HISTOPATHOLOGY OF BREAST LUMPS IN THE STUDY.

The % frequency of the most common diagnoses is shown in Figure-4. Fibrocystic disease was the commonest diagnosis followed by fibroadenoma and infiltrating duct carcinoma.

The frequency of common benign breast diseases as a

percentage of all benign cases is shown in figure- 5 and of common malignant diseases as a percentage of all malignant cases is depicted graphically in figure-6.



DISCUSSION

Female patients with breast diseases present in a

surgical clinic with various symptoms including breast lumps, lymph nodes enlargements, pain, skin ulceration, nipple discharge etc. Amongst these, a lump is the commonest presentation. Workers in developed countries have carried out studies related to frequency of malignancy in females presenting with breast pathologies. Significant work lacks in local literature that covers benign versus malignant breast lumps in various age groups.

Fig-3. Mean age of benign & malignant cases

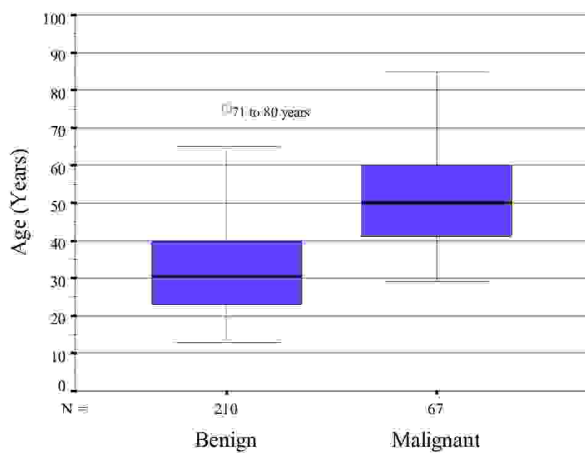


Fig-4. Histopathology of breast lumps

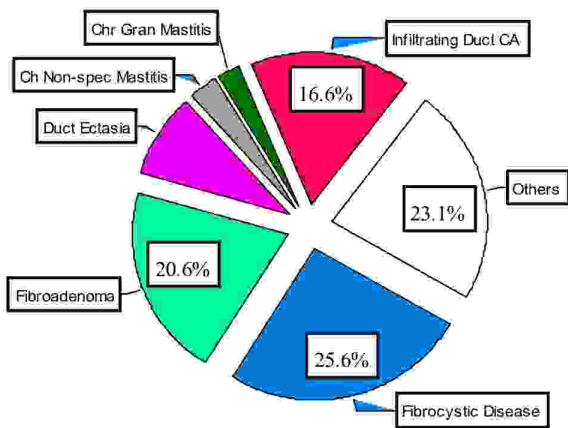


Fig-5. Benign breast lumps

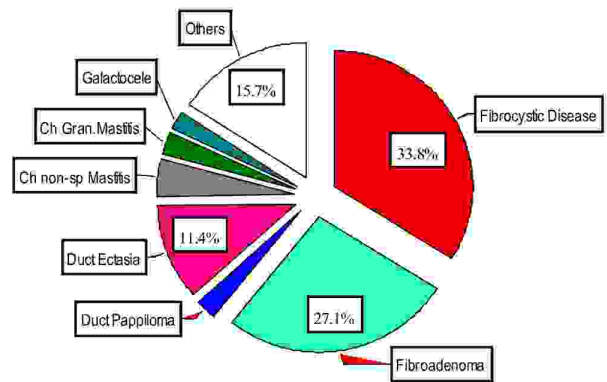
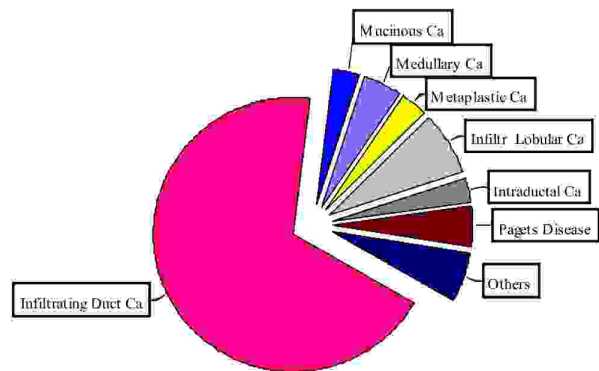


Fig-6. Malignant breast lumps



This study was carried out to determine the probability of diagnosis of malignancy in cases of breast lumps presenting in a surgical out patient. Special emphasis has been given to determine this frequency in different age groups.

The study establishes that almost one fourth of the females presenting with breast lump in a surgical OPD have malignancy. The overall probability figure of malignancy in all patients with breast lumps presenting in the surgical OPD was 24.2%. The remaining 75.8% cases were having benign lumps.

The frequencies for malignancy in the present work are lower but comparable to those reported in studies in our geographical region i.e. 26% reported in a study at Lahore by Usmani K. et al (1996)²³ and 24.8% by Chaudhury M. et al (1995)²⁴ in India. The figure however, is higher than values observed in the western and developed countries, 19.6% observed at Australia by Fleming et al (1982)²².

The higher frequency in the study compared to the Western world suggests a greater frequency of breast cancer in the population of patients presenting to our surgical OPDs. The population presenting to a military hospital includes patients from all over the country with no geographical boundaries by virtue of service requirements so these figures represent a true picture of breast malignancy in our population.

A significant patient population belongs to the social classes where veil, 'purdah' is strictly observed. Moreover, the majority population is illiterate or poorly educated and has a poor awareness of breast cancer. By virtue of Islamic beliefs, modesty, and poor awareness, patients with breast lumps keep hiding the lesion and only go to a doctor, when it is giving them significant symptoms such as pain, discomfort, skin changes, or an increase in size of the lump, [all indicators of a malignant change]. Hence, more malignant cases compared to the benign lumps are seen in our surgical OPDs. These reasons could be the basis of higher incidence figures observed in the study in our country compared to the west.

The youngest patient recorded with a breast lump was 13 yrs old with diagnosis of fibroadenoma. The youngest patient diagnosed to have a malignant breast lump was 29 yrs old, with a histopathology of infiltrating duct carcinoma (not otherwise specified).

In the present work, no case of breast malignancy was diagnosed in the 11 to 20yrs age group. This finding is coherent with study at United States by West et al (1995)²⁵. in which no case of malignancy was reported in 74 children and adolescents presenting with palpable

breast lesions. Similarly, El Tamer et al (1999)¹⁷ found no case of malignancy in his study of teenage girls with breast lumps between 13 and 19 at Kings Country Hospital New York.

In the present work only one case of malignancy was diagnosed in the 21 to 30yrs age group. This accounted for 1.4% of the cases of breast lumps in this age group and 0.4% of total cases. The frequency of 1.4% in the present study falls between 2.5% observed by Palmar and Tsangaris (1993)²⁶. 1% observed by Raju GC et al (1985)²⁷ and 2% cited by Donegan W L, (1995)²⁸ in their series of breast biopsies for palpable lumps in this age group.

The frequency of malignancy was 23.2% within the 31 to 40 yrs age group. This amounted to 5.8% of total cases. These figures are higher than 21% observed by Donegan (1995)²⁸. and 15% at UK by Bennette (1991)²⁹ but lower than Usmani et al (1996)²³ who observed the peak incidence in 30-39 age group at Lahore.

In the present study, the observed frequency of malignant breast lumps in the 41 to 50yrs age group is 38.9%. The peak frequency of malignancy was also observed in this age group with n=21 representing 31.3% of all malignant lumps and 7.6% of the total cases. The frequency of 38.9% in the present work is higher compared to 30% stated by Donegan W L, (1995)²⁸ in this age group. Moreover, the peak frequency observed by Wilson R E, (1986)¹³ in western population and Gaudette et al (1996)³⁰ in Canadian women is in the 50-60 years age group. These figures indicate that malignancy in breast lumps is more common at an early age in our country. This trend is also observed by Shahina (1997)³¹ and Usmani et al (1996)²³ at Lahore.

The observed frequency of malignant lumps within the 51 to 60yrs age group is 52.0%. This figure represents 4.7% of total cases and 19.4% of all malignant breast lumps. This frequency of 52.0% is significantly higher compared to 44% observed by Donegan (1995)²⁸. This augments the observation that ladies in our set up present with symptomatic malignant lumps and ignore

the asymptomatic breast lumps until a late stage when they become malignant and cause problems.

In the 61 to 70yrs age group, 70.6% breast lumps were malignant. These represented 4.3% of total cases and 17.9% of all malignant lumps. This frequency of 70.6% is again higher than compared to the western population figure 67% cited by Donegan (1995)²⁸. The same reasons mentioned above probably, account for the greater incidence in this age group too.

The total cases in the 71 to 80yrs and above age groups represented less than 2% of the total 277. In these age groups the frequencies are between 75% and 100%. The figures stated by Donegan²⁸ are 79% and 57% respectively.

In the present study, the observed frequency of a lump being diagnosed as malignant in age group 31 to 40 is just under one in four. Hence the surgeon should be on guard when dealing with cases of breast lumps in this age group. Examination should be thorough and relevant investigation carried out in all cases to rule out malignancy. In the age group 41 to 50 the incidence of a breast lump being diagnosed as malignant was observed to be almost two out of five. Moreover, the peak frequency of malignancy was in this group. Therefore, the surgeon should be doubly careful in managing breast lumps in this age group. As per the results of this work, after the age of 50 the chances of diagnosis of a benign lump are less than 50% and decline with age.

In the present study the observed frequency of diagnosing a lump as malignant in women less than 30 years of age is negligible. Moreover, a significant percentage of benign breast lumps including fibroadenoma and fibrocystic disease have been reported to regress with age, in the literature. Regression of 68% of breast lumps was observed at UK by Sainsbury et al³², 52% and 40% of fibroadenomas at UK by Carty et al³³ and Dixon³⁴. They also recommend a conservative option of non-excision in the reasonable expectation of resolution of the lump in women under 35 to 40 years. Hence in these age groups the surgeon can

rely on his clinical judgment and reassure the patients after a negative diagnosis of malignancy on FNAC and ask her for repeated follow-ups.

In the present study the mean age at diagnosis of benign and malignant disease was 32.942 years (standard deviation 12.2547) and 51.8060 years (standard deviation 12.8809), respectively. This figure was 34.7 and 48 yrs respectively observed by Shah S H³⁵ at Karachi. The mean age at diagnosis for malignant breast lump stated by Shahina et al³¹ at Lahore was 47 yrs a decade earlier compared to the west 57 yrs. Same observation in Asian women was made at Singapore by Menon M. et al³⁶.

CONCLUSION

Frequency of diagnosis of breast cancer in breast lumps is 24.2% in the total cases in the study. So almost one in 4 female patients coming to a surgical clinic with breast lumps can have malignant breast lumps.

Under 30 yrs of age the incidence of breast cancer is negligible.

The incidence of diagnosing a malignant breast lump increases with age in each subsequent age group.

The probability of diagnosing a breast lumps as malignant is 1 in 3 in 31-40 yrs age group, 2 in 5 in 41-50 yrs age group, and more than 1 in 2 thereafter.

There is a trend towards a greater incidence in younger age group in the Pakistani population studied compared with international data. This observation should alert the clinician in our country to be more cautious while managing breast lumps especially in the younger age groups 30-50 yrs.

The patients proven to have a benign lesions should be asked to do monthly breast self examinations and yearly FNAC of the lump.

In the age group 50-60 the lump should ideally be excised, or a trucut biopsy of the lesion made and subjected to histopathological examination.

When clinically and histologically the lesion is proven to

be benign the patients should be reassured. However it is recommended that she must attend follow up clinics.

Above 60 years of age it is recommend that all breast lumps be excised and histological diagnosis confirmed. Under the age of 30 the breast lump should be subjected to FNAC to rule out malignancy and cases can be followed up leaving the breast lump to run its natural course, which may be one of resolution in significant number of cases.

Breast exams should be performed by the gynecologists on all patients reporting to their OPDs.

It is also emphasized that the general population should be educated and informed about breast cancer and its implications through all communication media available. Pamphlets about breast cancer should be freely available in all female OPDs in regional languages. Knowledge about breast cancer should be spread by state machinery and NGOs

Breast cancer cannot be prevented; however early diagnosis and treatment can cure the vast majority of cases. A breast self-exam can save the breast and the life of the individual. Therefore, all women over 20 years should practice monthly Breast Self Examination. Females with breast lumps should be encouraged to report for management as soon as a breast lump is detected. This will help in early diagnosis and treatment of breast carcinoma.

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