

# A Study of 100 Cases of Malignant Tumours of the Breast.

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## ABSTRACT

**Background:** Breast cancer is the commonest malignancy in women worldwide. It cause about 20% of cancer deaths among females and has rightly been called the 'foremost cancer' in women. A high incidence of locally advanced disease and recurrent disease is reported in our institution. **Aim:** To characterize the clinical features and pattern of presentation of malignant tumors of the breast and to study the accuracy of FNAC and its Histopathological correlation. **Methods:** 100 cases of malignant tumor diseases of the breast admitted in the various surgical units of Tirunelveli Medical College Hospital, Tirunelveli. **Results:** The mean age of the patients in our study is 48.3 years. Majority of our cases belong to the locally advanced group (Stage III). FNAC was found to be 90.3% sensitive for carcinoma breast and accurate in 90% of cases. Invasive Ductal Carcinoma NOS type was the commonest (82%). Simple mastectomy with axillary dissection was the commonest surgery performed. All cases were followed up at regular intervals (3 – 4 months). **Conclusion:** Majority of our patients belongs to the post menopausal group and is locally advanced (Stage III - 51%). FNAC was found to be accurate in more than 90% of cases. To improve the disease free survival rate early detection of cases is needed. The high rate of recurrence (9%) can be reduced by good local control by surgery and post operative radiotherapy with systemic therapy for all node positive cases.

**Keywords:** Breast lumps, breast malignancy, breast pain

## INTRODUCTION

Malignant tumors of the breast are cancerous growths that have the potential to spread (metastasize) to other parts of the body. Breast cancer is the commonest malignancy in women world wide.<sup>[1]</sup> The incidence of breast cancer varies greatly around the world: it is lowest in less-developed countries and greatest in the more-developed countries.<sup>[2]</sup> Over 100,000 new breast cancer patients are estimated to be diagnosed annually in India. The age standardized incidence rates (AARs) range from 6.2 to 39.5 per 100,000 Indian women.

with a peak incidence at or after menopause. In males it is rare, forming less than 1.5% of all malignant tumors.<sup>[6]</sup> Carcinoma of breast is a systematic disease even at presentation. Once a surgical disease breast cancer now rests on tripod of surgery, radiotherapy and chemo-hormonal therapy. The heterogenous nature of the disease necessitates individualized treatment. Despite major advances in oncology the overall reduction in mortality.

### Aim

To characterize the clinical features and pattern of presentation of malignant tumors of the breast and to study the accuracy of FNAC and its Histopathological correlation.

## MATERIALS AND METHODS

100 cases of malignant tumor diseases of the breast admitted Department of Surgery, Tirunelveli Medical College Hospital were studied. Institutional ethics committee approval and informed consent were obtained. Detailed clinical evaluation of the cases including history taking, physical examination and necessary investigations were done to confirm the malignant nature of the breast lump, to stage the disease and to assess the general fitness of the patient for definitive treatment. Fine needle aspiration cytology (FNAC) of the lump is now the preferred method for obtaining the pre-treatment diagnosis.

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The AARs vary from region, ethnicity, religion, with the highest incidence reported at 48.3 per 100,000 women in the Parsi community of Mumbai.<sup>[3]</sup> The incidence of this disease has been consistently increasing, and it is estimated it has risen by 50% between 1965 and 1985.<sup>[4]</sup> The rise in incidence of 0.5–2% per annum has been seen across all regions of India and in all age groups but more so in the younger age groups (< 45 years).<sup>[5]</sup> Uncommon before 20 years it may occur at any age thereafter

Excision biopsy, incision biopsy and wedge biopsy are also used. Plain x-ray of the chest in all cases and mammography in selected cases were taken. Ultrasonogram of abdomen, galactography, skeletal survey liver function tests, serum calcium and alkaline phosphatase estimation are done in appropriate cases. Surgery is used for locoregional control for all stages of carcinoma of breast in our institution. Simple mastectomy with axillary dissection, total mastectomy, modified radical mastectomy and radical mastectomy are the various procedures adopted. Cases requiring radiotherapy are referred to other centre all the axillary node positive case was given systemic therapy with either combination chemotherapy or hormonal therapy using Tamoxifen or oophorectomy. All patients were followed up at regular intervals for morbidity, disease free interval, local and systemic failure and overall survival. Skiagram of the chest ever 6 months, ultrasonogram of abdomen and skeletal survey in selected cases were done.

## RESULTS

Carcinoma of the breast forma about 0.29% of all cases admitted in our institution every year. In our series the highest incidence of breast cancer occurs in the age group of 45 to 50 years. The mean age is 48.3 years. The youngest patient was 23 years female and the oldest 75 years. In the present series 65% of patients were postmenopausal. The average age at menarche was 13.8 years. The earliest being 11 years and the latest 16 years. In the menopausal patients the average age at menopause was 47 years. The earliest being 43 years and the latest 50 years. Out of 100 cases 89 patients were multipara. The mean parity of all patients was 4.8. The average duration of lactation was 18 months. 5 of our patients were nullipara and 6 unipara. The average age of all patients at birth of their first child was 21.6 years. The average age at marriage was 20.8 years. None of our patients had their first child birth after 35 years. 70% of patients are poor in socioeconomic status. In our series we had 6 cases of histopathologically proved breast cancers occurring either in patients with previously known benign breast disease or coexisting with benign lesions. Obesity (Skin fold thickness above 4 mm) was not an appreciable feature in our cases. Palpable, Painless breast lump was the commonest presenting feature (96%). A slightly higher incidence of cancer occurred in the left breast (56%). The upper outer quadrant was the most commonly involved (40%). Clinically palpable axillary lymph nodes were present in 62% of our cases. Nipple retraction (19%) skin dimpling (14%), skin ulceration (11%) and fixity to deeper structures (23%) were common findings. One case of breast auto mastectomy was also reported.

**Table 1: Distribution of Clinical Staging in study patients**

UICC - TNM	Number	Percentage
I	4	4.3%
II	27	29.6%
III	51	56.03%
IV	9	9.89%

The incidence of early breast cancer cases attending our institution is 34.06% (Stage I + II = 4 + 27 = 31 cases). Majority of our cases belong to the locally advanced group. (Stage III – 56.03%). [Table 1]

As these two are the most important determinants of prognosis the correlation between the two factors are studied. The involvement of axillary nodes was directly proportional to the tumor size. Larger the tumour in diameter, the greater the number of axillary lymph nodes that will be found to be affected by metastatic cancer, [Table 2]

**Table 2: Distribution of Tumor Size and Axillary Nodal Status**

Tumor Size	Patients with HPE Positive nodes
< 1 cm	20%
1 – 2 cm	20%
2 – 3 cm	10%
3 – 4 cm	5%
4 – 5 cm	11%
> 6 cm	34%

50 cases with breast lumps were subjected to FNAC and the results were compared to regular histopathological reports for correlation postoperatively. Inadequate aspirate 3 cases, Interpretative errors 2 cases. There was no false positive diagnosis of malignancy. [Table 3]

**Table 3: Distribution of Fine Needle Aspiration Cytology**

HPE – Report	FNAC report	
	Consistent	Inconsistent
Invasive ductal carcinoma NOS	26	2
Lobular carcinoma	0	1
Page't's disease	2	-
Fibroadenoma	6	-
Fibroadenosis	6	1
Phyllodes tumor	2	-
Duct papilloma	1	1
Chronic abscess	2	-

It was found to be accurate in 90% of cases. Out of 50 cases 31 cases were malignant and 19 cases were benign. Out of 100 cases, 56 cases had histopathological diagnosis by some from of open biopsy. Following an excision biopsy (lumpectomy) the average duration of time taken for definitive surgery was 11 days.

The histopathological breakup of the malignant tumors of breast reported in our series is as follows. Invasive ductal carcinoma, not otherwise specified (NOS.) was the commonest type. The incidence of medullary carcinoma in our series is slightly higher.

Axillary adenopathy: Clinical positivity was 62%, Pathological positivity 49%. [Table 4]

**Table 4: Distribution of Histopathological Report**

Histopathological Type	Percentage
Invasive ductal carcinoma NOS Type	82%
Medullary Carcinoma	9%
Invasive lobular carcinoma	2%
Paget's disease	2%
Squamous (epidermoid) carcinoma	1%
Adenoid Cystic Carcinoma	1%
Papillary carcinoma	1%
Malignant Schwannoma	1%
Secondary carcinoid	1%

Skeletal secondaries are the commonest in our series followed by lungs and liver. All cases were followed up at regular intervals (3 – 4 months). The disease free interval varies widely from 3 months to 5 years. The incidence of local and systemic failure is high (9 cases).

## DISCUSSION

The ultimate origin of breast cancer remains a mystery. Three sets of influences are important Hormonal imbalances, Environmental influences, Genetic predisposition. Hormones accelerate cell division of glandular epithelium and increase its susceptibility to environmental carcinogens.

In our study no epidemiological correlation could be established between menstrual status, parity, lactational years, age at first child birth and breast cancer incidence. Dietary fat is related to breast cancer induction, promotion and metastases. Wynder et al has demonstrated excellent correlation between fat intake and breast cancer mortality by a study on Japanese women who have the lowest dietary fat levels and the lowest breast cancer mortality rates.<sup>[7]</sup> Dupont et al have shown that only atypical hyperplasia is associated with increased risk (4 – 5 times) and more so if a family history of breast cancer is also present (9 times).<sup>[8]</sup> Davis H.H. states that cystic disease of breast with proliferative and atypically proliferative lesions has significant association with subsequent invasive carcinoma.<sup>[9]</sup> An overview of the range of tumor types is provided by the World Health Organization (W.H.O.) classification of breast tumors – Azzopardi et al.<sup>[10]</sup> [Table 5].

Invasive Ductal Carcinoma (NOS type 80 %), this is the most common type of breast carcinoma. It is a story hard tumour, gritty on transection with tumour retraction below cut margins. Microscopically primitive glandular pattern is seen with desmoplasia. It commonly metastasizes to axillary lymph nodes. The treatment of choice is modified radical mastectomy. Prophylactic contralateral mastectomies are not indicated (Fisher et al).<sup>[11]</sup> The prognosis is similar to NOS type. The incidence of medullary carcinoma in our series (9%) is slightly

higher compared to the western statistics of 1 – 5 % - Fisher et al (1975).<sup>[11]</sup> One of our cases had mixed histological pattern. 5 cases underwent simple mastectomy with axillary clearance, 3 cases simple mastectomy alone and one lumpectomy.

**Table 5: Comparison of Histopathological types**

Sl. No.	HPE Type	Present Series (%)	Azzopardi JG et al. <sup>[10]</sup> (%)
1.	Invasive ductal NOS type	82%	80 – 90 %
2.	Invasive lobular	2%	1 – 2%
3.	Mucinous carcinoma	-	5%
4.	Medullary Carcinoma	9%	1 – 5%
5.	Papillary Carcinoma	1%	2%
6.	Tubular Carcinoma	-	2%
7.	Adenoid cystic Carcinoma	1%	1%
8.	Apocrine carcinoma	-	1%
9.	Carcinoma with metaplasia	1% (Epidermoid Carcinoma)	Rare
10.	Paget's disease	2%	2%
11.	Secondaries	1% (Carcinoid)	Rare
12.	Malignant Schwannoma	1%	rare

In the present series 2 cases of Paget's disease of nipple are reported. Both had no palpable mass underneath. After establishing the diagnosis by a superficial biopsy modified radical mastectomy in one and simple mastectomy in the other case was done. In the present series one case of squamous cell carcinoma of the breast, a 39 year old women with stage III disease is reported. She was treated with simple mastectomy and axillary clearance. Patient developed local recurrence within 3 months of treatment and was lost for follow up 5 months later. Only 30 cases of squamous cell carcinoma of breast were reported in literature upon 1984. In India 13 cases have been reported till 1988. In our study out of 100 cases 96 cases had palpable tumour and 62 cases had palpable axillary lymph nodes in axilla. But the pathological positivity was 49%. Fisher et al., reported tumour embolization in 5% of cases.<sup>[11]</sup> The incidence varies from 21 to 46% in other reports. Bonnadonna regarded lymphatic invasion as the sole criterion of recurrence.<sup>[12]</sup> S.J. Cutler et al. observed that sinus histiocytosis of the lymph nodes correlated well with improved prognosis.<sup>[13]</sup> In our series sinus histiocytosis was found in 9% of cases mostly with early stage disease. Out of 100 cases 56 cases had cancer on the left breast. Upper outer quadrant tumors were more common 40 %. The onset of local features of malignancy such as skin changes, ulceration, rapid growth of the lesion and pain. Palpable lump is the commonest in clinical feature in breast disease. [Table 6] Bukhari M et al., states that the specificity and diagnostic accuracy of breast aspiration approaches 100%.<sup>15</sup> In our study the sensitivity rate of FNAC for carcinoma breast

was 90.3% and the overall accuracy was 90%. Breast cancer screening is now well established in western countries with satisfying results (Cancer detection rate of 6.2 per 1000 women screened).

**Table 6:** Comparison of Clinical Features

Signs & Symptoms	Donegan W.L. et al. 14 (%)	Present Series (%)
Palpable lump	73.5	96
Pain in breast	6.1	9
Nipple discharge	4.4	5
Skin dimpling	2.8	14
Nipple retraction	2.9	19
Nipple erosion	1.9	4
Axillary tumour	1.6	1
Skin edema	1.3	15
Skin erythema	1.2	2
Breast enlarged	1.1	2
Tenderness on pressure	0.7	4
Nipple itching	0.6	2
Generalized hardness	0.4	1
Skin ulceration	0.3	11
Breast shrunken	0.2	-
Breast auto mastectomy	-	1
Swelling of arm	0.2	1
Breast abscess	0.6	-

The largest reduction in mortality was observed among women aged 50-69 years (29%). In order to determine the nodal status and number of nodes involved complete axillary dissection (yield of 15 – 18 nodes) is a must. In our study it was found that the average yield of lymph nodes after axillary dissection is only 4 nodes which does not fit with the criteria laid down for complete axillary clearance. Fisher et al., (1985) stated that local recurrence rates of around 8% in node positive and 4% in node negative patients at 5 years are obtainable by simple mastectomy with axillary clearance or adjuvant radiotherapy.<sup>[16]</sup> Veronesi et al., in Milan compared conventional Halstead mastectomy with Quadrantectomy, surgical Axillary clearance and Radiotherapy to breast (QUART) and reported no survival difference between the two groups.<sup>[17]</sup> Veronesi. U and Volterrani. F. in Milan (1987) compared quadrantectomy with external irradiation and lumpectomy with iridium 192 implant and external beam therapy and found lower recurrence rates (2.5%) in quadrantectomy group than patients treated with lumpectomy (7.2%).<sup>[18]</sup> Bonnadonna et al., and Fisher et al., after using post operative combination chemotherapy (CMF regimen) for both pre and post menopausal patients for 12 months found a definite advantage for the treated patients over control group. This advantage was more in premenopausal node positive patients.<sup>[11,12]</sup> The National Institute of Health consensus conference reported that postmenopausal women receiving adjuvant chemotherapy had significant improvements in DFS and overall survival rates.<sup>[19]</sup>

Breast reconstruction is an important option for women undergoing mastectomy for the treatment of breast cancer and should be discussed with the patient before definitive surgery. There has been an increasing trend toward performing immediate reconstruction -T. Jahkola et al.<sup>[20]</sup>

## CONCLUSION

A study of FNAC of breast lumps was undertaken in my series and was found to be accurate in more than 90% of cases. Majority of our cases belong to the locally advanced group. Invasive ductal carcinoma NOS type was the commonest histopathological type (82%) reported. Very rare tumors of the breast including bilateral secondary carcinoid and epidermoid carcinoma are also reported. To improve the disease free survival rate early detection of cases is needed. To achieve this goal creating public awareness about Breast Self Examination (BSE), Physical examination by trained personnel, mammography of suspicious breast lumps and periodical medical surveys in rural and urban areas is needed. The high rate of recurrence (9%) can be reduced by good local control by surgery and post operative radiotherapy with systemic therapy for all node positive cases.

## REFERENCES

- McGuire, A; Brown, JA; Malone, C; McLaughlin, R; Kerin, MJ (22 May 2015). "Effects of age on the detection and management of breast cancer." *Cancers*. **7** (2):908–29. doi:10.3390/cancers7020815
- Stewart B. W. and Kleihues P. (Eds): World Cancer Report. IARC Press. Lyon 2003
- National Cancer Registry Programme. Consolidated report of the population based cancer registries 1990–1996. New Delhi: Indian Council of Medical Research; 2001.
- Saxena S, Szabo CI, Chopin S, Barjhoux L, Sinilnikova O, Lenoir G, Goldgar DE, Bhatnager BRCA1 and BRCA2 in Indian breast cancer patients. *Hum Mutat*. 2002;20:473–4.
- Murthy NS, Agarwal UK, Chaudhry K, Saxena S. A study on time trends in incidence of breast cancer – Indian scenario. *Eur J Cancer Care*. 2007;16:185–6.
- Moten A, Obirizeze A, Wilson L. Characterizing Lobular Carcinoma of the Male Breast. *Journal of Surgical Research*. 2013;179(2):195. doi:10.1016/j.jss.2012.10.248.
- Wynder EL, Cohen LA, Rose DP, Stellman SD. Dietary fat and breast cancer: where do we stand on the evidence? *J Clin Epidemiol* 1994;47:217–22.
- Dupont W.D., Page D.L. Risk factors for breast cancer in women with proliferative breast disease *N. Engl J Med* 312:145 – 151, 1985.
- Davis H, Simons M, Davis J. Cystic disease of the breast: Relationship to carcinoma. *Cancer*. 1964;17(8):957-978.
- Azzopardi J, Chepick O, Hartmann W et al. The World Health Organization Histological Typing of Breast Tumors—Second Edition. *American Journal of Clinical Pathology*. 1982;78(6):806-816.
- Fisher ER, Gregorio RM, Fisher B, Redmond C, Vellios F, Sommers SC. The pathology of invasive breast cancer. A syllabus derived from findings of the National Surgical

- Adjuvant Breast Project (protocol no. 4). *Cancer*. 1975 Jul;36(1):1-85.
12. Bonadonna G, Valagussa P, Brambilla C et al. Primary chemotherapy in operable breast cancer: eight-year experience at the Milan Cancer Institute. *J Clin Oncol*. 1998 Jan;16(1):93-100.
  13. Cutler S, Freeman C, Black M, Mork T, Harvei S. Further observations on prognostic factors in cancer of the female breast. *Cancer*. 1969;24(4):653-667.
  14. Donegan W, Spratt J. *Cancer of the Breast*. 2nd ed. Philadelphia: Saunders; 2002.
  15. Bukhari M, Arshad M, Jamal S et al. Use of Fine-Needle Aspiration in the Evaluation of Breast Lumps. *Pathology Research International*. 2011;2011:1-10. doi:10.4061/2011/689521.
  16. Fisher B, Bauer M, Margolese R et al. Five-Year Results of a Randomized Clinical Trial Comparing Total Mastectomy and Segmental Mastectomy with or without Radiation in the Treatment of Breast Cancer. *New England Journal of Medicine*. 1985;312(11):665-673.
  17. Veronesi U, Saccozzi R, Del Vecchio M, et al. Comparing radical mastectomy with quadrantectomy, axillary dissection, and radiotherapy in patients with small cancers of the breast. *N Engl J Med* 1981;305:6-11
  18. Veronesi, U, Volterrani, F, Luini, A et al. Quadrantectomy versus lumpectomy for small size breast cancer. *Eur J Cancer*. 1990; 26: 671-673
  19. National institute of Health consensus conference: Treatment of early stage breast cancer. *JAMA*. 1991;265: 391-395.
  20. Jahnkola T, Asko-Seljavaara S, von Smitten K. Immediate breast reconstruction. *Scand J Surg*. 2003;92(4):249-56.

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