THE PATTERN OF BREAST CANCER

L. E. Soon
R. Nambiar

SYNOPSIS

An analysis of 78 women with breast cancer admitted to the Department of Surgery during a 5-year period was done to study the clinical presentation and stage of the disease. It was noted that breast cancer occurred more frequently in married women between 40 - 60 years of age. The incidence was about equal in both breasts but the upper quadrant was the predominant site of tumour. Early cancer (Stage I) was rare compared to many western series and occurred in only 6%. Ninety percent were Stage II or III and half of these were classified as advanced cases. Three quarter of the cases had tumour attachment to superficial or deep tissues and 40% had axillary node involvement. Over twenty five percent of cases had already developed metastasis or re-current disease during the period of review. The overall prognosis was generally poor compared to other series.

INTRODUCTION

Breast cancer is a common tumour in women after 30 years of age, a leading cause of death between 40 - 50 years and is the commonest cancer in women in Singapore. There are wide differences in the incidence and mortality rates of breast cancer in different populations. The age adjusted incidence rate of breast cancer is still lower around 20/100,000 for Singaporeans, in contrast to the higher figure of 40 - 80/100,000 in most of Europe and North America.

The survival of patients with breast cancer is influenced by a variety of biological characteristics. Among the well known factors influencing both the prognosis and treatment of patients is the extent of the disease itself. Although there is no certain way of detecting micrometastases the treatment of breast cancer at present is still based on the clinical staging of the disease.

This paper is an analysis of the basic facts that may influence the survival and in particular, the stage of the cancer and its implications on prognosis and treatment. The deficiencies in data recording are noted so that future

Department of Surgery
Toa Payoh Hospital
Singapore 11.

L. E. Soon, MBBS
Surgical Trainee Medical Officer

R. Nambiar, MBBS, FRCS, FRCSE, FACS, FRACS
Senior Surgeon & Head

documentation may be improved. No attempt is made to analyse treatment methods or the results of treatment.

CASE MATERIAL AND FINDINGS

Out of a total of 80 patients with breast cancer admitted in a 5-year period (1973-77) to the Department of Surgery, Toa Payoh Hospital, 78 cases were available for this study. This number represents about 1/5 of all cases of histologically diagnosed cancer of the breast seen in the Republic of Singapore during the same period.

AGE, RACE, MARRIAGE AND PARITY

The majority (65%) were in the 40 - 60 age group; only 14% were above 60 years and 4% below 30 years of age (Table 1). Seventy percent of the patients were Chinese, 14% Malays, 6% Indians and 20% consisting of other races. Almost all (93%) were married and 71% of patients had children the number ranging from one to thirteen. The majority (60%) were premenopausal.

TABLE I AGE INCIDENCE

AGE GROUP	NO	%
30 below	3	4
31 — 40	13	17
41 — 50	31	40
51 — 60	20	25
Over 60	11	14

PREVIOUS BREAST DISEASE AND OTHER ASSOCIATED DISEASES:

One patient had a fibroadenoma and another, a galactocoele excised from the same side and two others had other benign conditions in the opposite breast. Seventeen cases (22%) were found to have existing associated diseases, ranging from asthma, diabetes, hypertension to pulmonary tuberculosis. One was a case of Hansen's disease and another had a history of rectal adenocarcinoma.

SYMPTOMS

All patients presented with complaint of a lump. Only two patients had in addition blood stained nipple discharge. Fourteen patients also had in addition other symptoms which included pain and itch. About half the number of patients had noticed the lump for a period less than three months, 41% three months to a year, while 16% cases had tolerated the lump for more than a year (Table II).

TABLE II DURATION OF SYMPTOMS

	NO	%
Less than 3/12	38	49
4 — 6/12	27	35
7 — 12/12	5	6
Over 13/12	8	10
	78	100

PRIMARY LESION

The primary tumour was found with the same frequency in either breast. Majority (65%) were in the upper quadrant, of which 47% were in the upper outer and 18% in the upper inner quadrant. Central lesions were third in frequency (13%). Majority of the tumours (94%) were larger than 2cm diameter and only 6% were less than 2cm. In about half the number of cases, the tumours were larger than 5cm. Nearly three quarters of the lesions had some attachment to skin, fascia or deeper structures; with 42% to the skin, 17% to fascia, 13% to both skin and fascia and 3% involving the chest wall.

REGIONAL NODES

Nearly half (46%) of the patients had homolateral axillary nodes clinically palpable at first presentation of whom 50% were fixed. The larger the size of the tumours, the greater was the frequency of palpable axillary nodes, with 20% palpable nodes in those with tumours less than 2cm, 42% in those between 2-5cm and 54% in those tumours above 5cm (Table III).

STAGE AT PRESENTATION (Table IV)

Staged according to the TNM classification, nearly 90% patients were categorised in Stage II and III. The majority (50%) were in Stage III and 40% in Stage II, 4% were in Stage IV and only 6% were in Stage I.

HISTOLOGY:

The majority of lesions (91%) were reported as infiltrating ductal carcinoma. Rare forms of invasive lesions like medullary, comedo and mucoid carcinomas formed 8% of the total. Early carcinomas were rare, with only a single case of intraductal carcinoma in the whole series.

TABLE III DISTRIBUTION OF SIZE OF PRIMARY LESION AND RELATIONSHIP TO PALPABLE AXILLARY NODES

SIZE OF PRIMARY LESION	NO	%	NO OF PATIENTS WITH PALPABLE AXILLARY NODES	% OF EACH GROUP
Below 2cm	5	6	1	20
2 — 5cm	36	46	15	42
Over 5cm	37	48	20	54

TABLE IV BREAST CANCER — TNM STAGES

STAGE AT PRESENTATION	TNM (1973)	NO		%
STAGE I	T_{1a} N_o or N_{1a} M_o	5	5	6
	T_{1b} N_o or N_{1a} M_o	0		
STAGE II	T_o N_{1b} M_o	0		40
	T_{1a} N_{1b} M_o	0		
	T_{1b} N_{1b} M_o	0	31	
	T_{2a} or T_{2b} N_o N_{1a} N_{1b} M_o	31		
STAGE III	T_3 any N M_o	27		50
	T_4 and N M_o	2	39	
	T N_2 M_o	10		
	T N_3 M_o	0		
STAGE IV	T any N M_1	3	3	4

RECURRENCE

About a quarter (19 cases) were found to have already developed metastasis or recurrent disease during the period of review. Of these, nearly all (18/19) were from Stage II and III and one case from Stage I. Eight (42%) had recurrence locally and 10 (53%) had homolateral axillary node recurrence. Five (26%) developed metastasis in the lungs, 6 (32%) to the liver and 7 (37%) to bones. About half the cases developed distant metastasis alone while a quarter had local and node recurrence as well as distant metastasis. About a sixth of the patients developed recurrence within a period of three months, a third within 3 to 12 months and about half after one year. Sixty percent of recurrences were in Stage III. Analysis of the data showed increased frequency of metastic disease with more advanced stages of the disease, the incidence being 28% (11/39) for Stage III compared to 23% (7/31) for Stage II disease.

TREATMENT AND RECURRENCE

Thirty patients in Stage I and II were treated by 'curative' procedures either radical mastectomy or simple mastectomy combined with irradiation. In this group, 6/30 (20%) developed recurrence or metastatic disease. The remaining 48 patients were treated with palliative procedures and in this group, the recurrence rate 13/48 (27%) was higher by 7%. About half the patients experienced some form of complications during treatment, including radiation burns, lymphoedema, wound infection, wound breakdown and gastrointestinal upsets. During the period of review, 14 patients were confirmed to have died from this disease (18%).

DISCUSSION

Although the incidence of breast cancer is still low in Singaporeans compared to western populations, it is the commonest cancer occurring in females in Singapore at present and therefore of considerable importance. It is also probable that with rising affluence and changing dietary habits an increase in incidence of this cancer may be expected.

In this study a higher incidence amongst Indians compared to Chinese and Malays was not observed as was reported previously (Shanmugaratnam 1973). However, the trend in age incidence is similar. While this study shows a slightly younger range of maximal age incidence of 40 - 60 years, in most other series (Haagensen 1956, Smithers et al, 1952) the maximal age incidence is higher with a mean and median age of 60 - 61. Bloom and others (1962) have noted 30% of breast cancer cases above 60 years of age and 51% in the 40 - 60 age group compared to our finding of only 14% above 60 years. The younger age incidence is further reflected in our study as two-thirds of the affected women were in the premenopausal age group in contrast to Fischerman et al (1969) series in whom two-thirds were post-menopausal. This has prognostic implications as poor prognosis and increased malignancy has been recorded in menstruating women compared to post-menopausal women (Kleinfield et al 1963, Brightmore et al 1970). The low incidence of previous benign disease in the affected breast is similar but the association of nipple discharge in our series is lower than other reports (Fischerman et al 1969, Amaaki 1974).

In recent years, the duration of symptoms at the time medical advice is sought for cancer of the breast has been gradually getting shorter. Thirty years ago in U.K. nearly 65% had symptoms for six months and 85% presented within one year (Bloom et al 1962). Recently increasing number of patients are seen within six weeks of detection of the lump. In our series, inspite of 50% presenting with symptoms less than three months, the advanced stage of tumour at first presentation reflects a lack of awareness to lump growing in the breast and the absence of the practice of breast self examination.

Various studies have indicated that the size of primary tumour may be regarded as a discriminant of import for prognosis (Johnstone 1972, Egger et al 1941). The smaller the tumour the better the prognosis. Those less than 5mm size has been designated as minimal cancer with almost 100% 5-year survivals. Eggers and others (1941) observed 73% 5-year survival for patients with tumours less than 2cm, 24% 5-year survival for those between 3 and 6cm and only 15% when the tumour was over 7cm. The great majority of tumours in our series (94%) were larger than 2cm and nearly half of them over 5cm in size. This finding is again in marked contrast to reports from western countries where around 80% of tumours are less than 5cm at presentation (Fischerman 1969, Fisher et al 1969).

The relationship between the size of the tumour and nodal metastases and prognosis have also been confirmed by recent studies. Johnstone (1972) reported that when the size of the tumour was over 5 cm, nearly three fourths of patients had nodal secondaries and Fisher and Colleagues (1969) found that nearly half of the patients with nodal secondaries had distant metastases. They also observed poor survival with large tumours when more than three axillary nodes were involved compared to those with no nodes positive or less than three positive nodes. In our series the frequency of axillary node involvement both microscopically and clinically was higher due to a higher proportion of larger tumours.

One of the main differences in the recorded histological types as compared with other series is the rarity of non-invasive or early carcinomas such as intraductal, insitu, lobular and Paget's disease. There was only one case of intraductal carcinoma and not a single case of lobular carcinoma although the latter is being increasingly reported (Newman 1966, Fisher et al 1977).

The overall staging of breast cancer in this series has shown marked differences from other studies indicating a high proportion of advanced cases. Only 6% in this series were Stage I while 90% in Stage II and III. Further more, over half (60%) the patients had incurable lesions (III and IV). This is worse than the stage of patients in USA twenty years ago when less than a quarter of the patients were in Stages III and IV (Cutler et al 1970, Zippin 1966). Recently, Cady (1972) had noted a decrease in mean size of primary tumour and a concomittent decrease in the incidence of axillary nodes as compared to earlier decades. The higher incidence and earlier appearance of recurrences with advanced stages of the disease is also confirmed by our study.

This retrospective study has revealed that there were marked deficiencies in the clinical assessment and recording of basic data. Only 12% recorded age at full term childbirth, 23% mentioned about breast feeding and very few enquired into family history of breast cancer or oral contraceptives. Very often the size of the tumour was recorded from visual impressions rather than accurate measurements. There has also been no uniformity in placing the site of tumours according to quadrant for large and centrally located tumours. It may be emphasised that without

accurate data, recording and staging the results of different methods of treatment cannot be assessed or compared.

CONCLUSION

Breast cancer in Singapore is diagnosed at advanced stages of the disease. For the last many years the mean size of tumour detected in many advanced countries is around 3cm with history of only six weeks. The 'short' history of symptoms in local women presenting with large size tumour does not indicate a high degree of malignancy but rather a lack of awareness of the presence of a growing lump in the breast. It would seem that a step up in public education with emphasis on regular breast self examination could improve the stage of presentation in at least half of our cases.

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