

INCIDENCE OF MALIGNANCY IN FEMALES PRESENTING WITH BREAST LUMPS IN OPD: a study of 277 cases

Ishtiaq Ahmed Chaudhary,¹ Salma Kafeel Qureshi² & Shahid Rasul³

ABSTRACT

Objective: To find the incidence of malignancy in females presenting with breast lumps in surgical out patient and to find out the age related incidence of benign and malignant diseases in these patients.

Study: A prospective study.

Place and duration of study: The study was conducted from January 1999 to December 2000 at Fauji Foundation Hospital, Rawalpindi.

Patients and Methods: All cases reporting to surgical outdoor with breast lumps were included and underwent investigation for the breast lumps to determine the histopathological diagnosis.

Results: A total of 277 cases were studied. 24.2% breast lumps were malignant and 75.8% were benign. The incidence of malignancy increases from 0% in 2nd decade to 38.9% in 5th and 100% in 9th decade of life. The probability of diagnosing a breast lump as a malignant is one in three in 4th decade, two in five in 5th decade and more than one in two thereafter. Fibrocystic disease (33.8%) and Fibro adenoma (27.1%) was the commonest finding among the benign lumps. Among malignant lumps infiltrating duct carcinoma (68.7%) is the commonest finding.

Conclusion: There is a significantly high incidence of malignant breast lumps after the 3rd decade of life and it increases subsequently. It is recommended that the surgeon managing a case of breast lump in a patient above 30 years should be highly suspicious and cautious so that early detection and management of malignant lumps be carried out.

KEY WORDS: Breast lump, Incidence, Benign, Malignant, Pakistan.

Pak J Med Sci October-December 2003 Vol. 19 No. 4 287-294 www.pjms.com.pk

1. Dr. Ishtiaq Ahmed Chaudhary FCPS
Assistant Professor of Surgery
Foundation Medical College,
Rawalpindi, Pakistan
2. Dr. Salma Kafeel Qureshi FRCOG
Consultant Gynaecologist
3. Dr. Shahid Rasul FCPS

Correspondence:

Dr. Ishtiaq Ahmed Chaudhary
Consultant Surgeon,
Bungalow-14, Fauji Foundation Hospital,
Morgah, Rawalpindi, Pakistan
E-mail: surgish2000@yahoo.com

* Received for publication: May 24, 2003

Accepted: August 6, 2003

INTRODUCTION

Breasts—modified sweat glands—are functionally of great importance for the offspring as the benefits of breast-feeding are many folds. For the woman herself breasts are symbol of womanhood and significant component of feminine beauty. However one-fourth women suffer from breast disease in their lifetime after puberty.^{1,2} Worst of all it becomes a cause of death among female population in the form of breast cancer which is the most common cancer and second leading cause of cancer death of women after 30 years of age in USA and western world.^{3,4} In the western world breast cancer accounts for 27% of all female cancer

and one out of fourteen women can expect to develop breast cancer in their life time.⁵ It is also the most frequent female cancer in Pakistan accounting for almost 26.6%.^{6,7} Moreover, a higher incidence in younger age has been observed in our population.^{8,9}

A woman's reaction to any actual or suspected disease of breast may include fear of disfigurement, loss of sexual attractiveness and death. Social and religious factors, cosmetic considerations, false vanity and fear of infertility have hindered early diagnosis and treatment in our setup.³ In spite of the fact that over 80% of breast lumps are benign, every breast lump must be examined and evaluated by a surgeon to rule out malignancy.¹⁰ Early diagnosis is the key to increased survival. Hence, it is important for the surgeon to rule out malignancy with minimal invasive investigations and thereby prevent the patient from undergoing mutilating surgery while, on the other hand not missing the diagnosis of malignancy.

A number of studies have been undertaken on breast diseases in Pakistan as well as other parts of the world. Yet, studies on the incidence of benign and malignant breast lumps in a surgical outpatient department in comparisons to age of the patient are lacking. This study was carried out to determine the incidence of diagnosis of malignancy in cases of breast lumps presenting in a surgical out patient.

PATIENTS AND METHODS

This is a prospective study of a section of surgical patients reporting to Department of General Surgery, Fauji Foundation Hospital, Rawalpindi. The study was carried out from January 1999 to December 2000 for a period of two years. The study was basically designed to assess the incidence pattern of breast diseases presenting as breast lumps in a surgical out patients and to find out the age related incidence of benign and malignant diseases in these cases.

All female patients presenting with breast lumps were included in the study and registered after through clinical examination of the

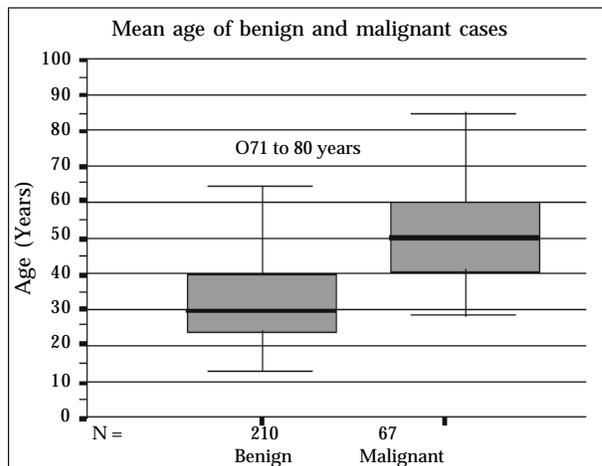
lump. Fine needle aspiration cytology of the lump was carried out in every patient to make the final histopathological diagnosis. Based on clinical examination and Fine Needle Aspiration Cytology results, patients were managed accordingly. Cases with cytology diagnosis of benign lesion but showing any signs or suspicion of malignancy were subjected to core needle or incision biopsy to confirm the diagnosis. Non-diagnostic smears were repeated or subjected to biopsy of the lesion. Cases of suspicious smears also underwent biopsy for histopathological diagnosis. No complication of the diagnostic procedure was noted.

The patients having acute mastitis, acute breast abscess, or with recurrence of malignant or benign lesions were excluded from the study after investigations.

RESULTS

Three hundred and thirty five patients were registered during the study period 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 having a definitive histopathologic diagnosis of the breast lump were managed and included in the study. The patients in the study were aged between 13 and 85 years. The mean age is 37.52

Figure-1



(standard deviation 14.798). Of the total 277 patients majority of them were in 3rd (25.6%), 4th (24.9%) and 5th (19.5%) decade of life. Among them, 210 (75.8%) were diagnosed as benign breast lumps while 67 (24.2%) were diagnosed as having a malignant lump (Table-I).

The distribution of the cases diagnosed as benign and malignant breast lumps, in assorted age groups is shown in Table-I. The incidence of malignancy in breast lumps increases with age i.e. 1.4% in 3rd decade to 38.9% in 5th decade and 100% above the age of 80 years. In

contrary the incidence of benign lumps were decreasing with the age i.e. 100% in second decade to 25% in 8th decade of life.

Mean age at which a diagnosis of benign and malignant breast lump was made in the present study is 32.96 for benign and 51.81 for malignant breast lumps. This along with the standard deviation is depicted in the Figure-1.

The incidence of diagnosis of benign and malignant breast diseases presenting as breast lumps in the study is shown in the Table-II and Table-III, separately. Among the benign lumps

Table-I: Incidence of benign and malignant cases diagnosed in age groups

Age Group	Disease Process		Total
	Benign	Malignant	
11 to 20 years	Count	36	36
	% Within Age Group	100.0%	100.0%
	% Of Total	13.0%	13.0%
21 to 30 years	Count	70	71
	% Within Age Group	98.6%	1.4%
	% Of Total	25.3%	.4%
31 to 40 years	Count	53	69
	% Within Age Group	76.8%	23.2%
	% Of Total	19.1%	5.8%
41 to 50 years	Count	33	54
	% Within Age Group	61.1%	38.9%
	% Of Total	11.9%	7.6%
51 to 60 years	Count	12	25
	% Within Age Group	48.0%	52.0%
	% Of Total	4.3%	4.7%
61 to 70 years	Count	5	17
	% Within Age Group	29.4%	70.6%
	% Of Total	1.8%	4.3%
71 to 80 years	Count	1	4
	% Within Age Group	25.0%	75.0%
	% Of Total	.4%	1.1%
Above 81 years	Count	1	1
	% Within Age Group	100.0%	100.0%
	% Of Total	.4%	.4%
Total	Count	210	277
	% Of Total	75.8%	24.2%

Fibrocystic disease was the commonest (33.8%) followed by Fibroadenoma (27.1%) and Duct ectasia (11.4%). In malignant breast lumps infiltrating duct carcinoma is the commonest finding (68.7%). (Table-III)

The frequencies and incidence of commonest benign and malignant breast diseases, in

the total cases of breast lumps “within” assorted age group is shown in Table-IV. Fibrocystic disease is more common in 4th decade, Fibroadenoma in 2nd and 3rd decade and Duct ectasia in 3rd decade of life. Among the commonest malignant lesions the infiltrating duct carcinoma is more common in 4th and 5th decade of life.

Table-II: Cases of benign breast lumps n= 210

	Frequency	Percent of Total Cases	Percent of Benign Lumps
Fibrocystic Disease	71	25.6	33.8
Fibro adenoma	57	20.6	27.1
Duct Ectasia	24	8.7	11.7
Duct papilloma	5	1.8	2.4
Lipoma	2	.7	1.0
Atypical Duct Hyperplasia	2	.7	1.0
Lactating Adenoma	4	1.4	1.9
Chronic Non-specific Mastitis	9	3.2	4.3
Abscess Wall	4	1.4	1.9
Chronic Granulomatous Mastitis	6	2.2	2.9
Simple Cyst	3	1.1	1.4
Benign Cystosarcoma Phyllodes	1	.4	.4
Tubular Adenoma	4	1.4	1.9
Galactocele	5	1.8	2.4
Fibroadenosis	3	1.1	1.4
Traumatic Fat Necrosis	3	1.1	1.4
Epidermal Inclusion Cyst	2	.7	1.0
Neurofibroma	1	.4	.4
Angiolipoma	2	.7	1.0
Antibioma	2	.7	1.0
Total Benign Lumps	210	75.7	100.0
Missing Malignant Lumps	67	24.3	
Total cases in the study	277	100.0	

Table-III: Cases of Malignant Breast Lumps n= 67

	Frequency	Percent of Total Cases	Percent of Malignant Lumps
Infiltrating Duct Carcinoma (N.O.S.)	46	16.6	68.7
Tubular Carcinoma	1	.4	1.5
Mucinous Carcinoma	2	.7	3.0
Papillary Carcinoma	1	.4	1.5
Medullary Carcinoma	3	1.1	4.4
Metaplastic Carcinoma	2	.7	3.0
Infiltrating Lobular Carcinoma	5	1.8	7.5
Intraductal Carcinoma	2	.7	3.0
Pagets Disease	3	1.1	4.4
Malignant Phyllodes Tumor	1	.4	1.5
Stromal Sarcoma	1	.4	1.5
Total Malignant Lumps	67	24.3	100.0
Benign Lumps	210	75.7	
Total	277	100.0	

Table-IV: The commonest benign & malignant breast lumps in different age groups

Age group	FIBROCYSTIC DISEASE	FIBRO ADENOMA	DUCT ECTASIA	INFIL. DUCT CA.	INFIL. LOBULAR CA.
11-20	10	22			
% within age group	27.8%	61.1%	-	-	-
% of total	3.6%	7.9%			
21-30	17	19	9	1	
% within age group	23.9%	26.8%	12.7%	1.4%	-
% of total	6.1%	6.9%	3.2%	0.4%	
31-40	21	10	6	11	
% within age group	30.4%	14.5%	8.7%	15.9%	-
% of total	7.6%	3.6%	2.2%	4%	
41-50	15	4	6	14	2
% within age group	27.8%	7.4%	11.1%	25.9%	3.7%
% of total	5.4%	1.4%	2.2%	5.1%	0.7%
51-60	5	1	3	10	1
% within age group	20%	4%	12%	40%	4%
% of total	1.8%	0.4%	1.1%	3.6%	0.4%
61-70	3			7	2
% within age group	17.6%	-	-	41.2%	11.8%
% of total	1.1%			2.5%	0.7%
71-80				2	
% within age group	-	-	-	50%	-
% of total				0.7%	
More than 80				1	
% within age group	-	-	-	100%	-
% of total				0.4%	
Total	71	57	24	46	5
% within age group	25.6%	20.6%	8.7%	16.6%	1.8%
% of total	25.6%	20.6%	8.7%	16.6%	1.8%

DISCUSSION

Female patients with breast diseases present in a surgical clinic with various symptoms including breast lumps, nodularity, pain, skin ulceration, nipple discharge etc. Amongst these, a lump in breast is the commonest presentation. Almost 77 to 78% of the patients diagnosed as breast cancer present with breast lumps⁴. Workers in developed countries have carried out studies related to malignancy in females presenting with breast pathologies. There is very little data from local studies which shows the incidence of benign and malignant breast lumps in various age groups. This study shows that almost one fourth of the females presenting with breast lump in a surgical OPD have malignancy. The overall incidence 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 incidence for malignancy in the present work are lower but comparable to those reported in studies in our geographical region i.e. 26% reported by Usmani¹¹ in Pakistan and 24.8% by Chaudhury¹² in India. These figure are higher than those observed in the western and developed countries, i.e. 19.6% observed at Australia by Fleming *et al.*¹³ The higher incidence in the study compared to the Western world suggests a greater incidence of breast cancer in the population of patients presenting to our surgical OPDs. A significant patient's 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 keeps hiding the lesion and only present to the surgeon, when it is giving them significant symptoms such as pain, discomfort, skin changes, or an increase in size of the lump³. These reasons could be the basis of higher incidence of malignancy observed in our country as compared to the west.

In our study, the youngest patient recorded with a breast lump was 13 years old with diagnosis of Fibroadenoma and the youngest patient diagnosed to have a malignant breast lump was 29 years old with a histopathology

of infiltrating duct carcinoma. In the present work, the incidence of malignancy increases gradually with the age, 00% in the 2nd decade to 52% in the 6th and 100% in 9th decade of life. On the other hand, the incidence of benign lesions is decreasing with the advancing age i.e. 100% in the 2nd decade to 48 % in the 6th and 0% in the 9th decade of life. This finding is coherent with study at United States by West¹⁴ and El Tamer¹⁵, in which no case of malignancy was reported in 2nd decade of life. Only one case (1.4%) of malignancy was diagnosed in 3rd decade. The incidence of 1.4% in the present study falls between 2.5% observed by Palmar¹⁶, 2% by Donegan¹⁷ and 1% by Raju¹⁸ in their studies. The incidence of malignancy was 23.2% and 38.9% in 4th and 5th decade respectively which is also observed by Shahina¹⁹ and Usmani¹¹ at Lahore. The incidence of malignancy as observed by Donegan¹⁷ and Bennette²⁰ in UK is 21% and 15% respectively in 4th decade and 30% in 5th decade as reported by Donegan¹⁷. The peak incidence of malignancy observed by Usmani¹¹ is in 4th decade as compared to 5th decade in our study. The peak incidence reported by Wilson³ in western population and Gaudette²¹ in Canadian women is in the 6th decade. This indicates that malignancy in breast lumps is more common at an early age in our set up. So the surgeons and clinicians should be more cautious in managing the breast lump in early age group. The incidence of malignant lumps in 6th decade is 52.0% which is again higher i.e. 44% as observed by Donegan¹⁷. This augments the observation that female in our set up present to the surgeon with symptomatic malignant lumps and ignore the asymptomatic breast lumps until a late stage when they become symptomatic and started causing problems³. After 6th decade incidence of malignancy is almost same in our study and as well as reported in international literature¹⁷.

In the present study, the observed incidence of a lump being diagnosed as a malignant in 4th and 5th decade are one in four and two in five respectively in our population. After the age of 50, the chances of diagnosis of a benign

lump are less than 50% and it further decrease with age. Hence the surgeon should be on guard when dealing with cases of breast lumps in these age groups. In the present study the mean age at diagnosis of benign and malignant disease was 32.942 years and 51.8060 years (standard deviation 12.2547 and 12.8809), respectively. This figure was 34.7 and 48 years respectively as observed by Shah²² at Karachi. The mean age for the diagnosis of malignant breast lump stated by Shahina¹⁹ at Lahore is 47 years, a decade earlier compared to the west 57 years. Menon²³ made same observation in Asian women in Singapore.

Among the benign lumps fibrocystic disease is the commonest, 25.6% of all cases (33.8% among benign lumps). Maximum cases (29.6%) were diagnosed in 4th decade. The frequency among benign lumps 33.8% is falling in between values observed in other studies, 29.2% in Nigeria by the Ihekwa²⁴, 25.5% in India by Chaudhury¹², 47% in USA by Donegan¹⁷ and 43.2% in Italy by Ciatto²⁵. These values are closer to those observed in the third world countries than in the western population. An explanation for this difference can be that fibrocystic disease lumps are often not very distinct and painless and the females of our population take them to be normal breast consistency and only report to the surgeon when they become symptomatic. This could however, also be a geographical difference, or related to the different social practices between the two populations with multiparity, difference of breast-feeding practices and early age at first birth in our population.

Fibroadenoma is the 2nd most common diagnosis i.e. 20.6% of total cases (27.1% of benign lesions) in our study. Majority of the cases (38.6%) were in the 11 to 20 years of age and majority (71.9%) were diagnosed in 2nd and 3rd decade of life. Higher incidence between 11 to 20 years was also reported by Donegan¹⁷. The incidence among the benign lumps (27.1%) fell in the middle of most studies in the literature i.e. 34.5% Ciatto²⁵, 25% by Donegan¹⁷ and 23.1% Lacquement²⁶. Raju²⁷ has also same observation that fibro adenoma was the most

frequent diagnosis under 30 years of age. No significant difference was observed in the epidemiology of fibro adenoma compared with figures in the literature. This could be because it presents as a discrete lump in the breast and occur in young ladies, a generation which today is probably more informed and educated.

Duct ectasia is the 3rd most frequent diagnosis, 8.7% of the total cases (11.4% among benign lumps). Majority of them (37.5%) were in the 3rd decade of life. Duct ectasia was observed in only 2% cases in a western population series as reported by Donegan¹⁷. The lesion is more common in our population perhaps due to multiparity and greater inclination towards breast-feeding as compared to the western population.

Infiltrating Duct Carcinoma was found in 16.6% of the total breast lumps (68.7% among the malignant lumps) and it is the 3rd frequent histopathology diagnosis in breast lumps in our study. The frequency among malignant lumps, 68.7% falls in the centre of figures reported in literature. 67.9% at US by Berg et al⁴, 74.6% by Cotran²⁸ and 65-80% by Harries²⁹. Infiltrating Lobular Carcinoma was the second most frequent (8.1%) among the malignant breast lumps and the cases were scattered from 41 to 70 years with no specific predilection for any age group. The incidence of 8.1% among malignant tumors is comparable with international studies i.e. 4.9% from Cotran²⁸, 6.3% by Berg⁴ and 10-14% by Harries²⁹.

In the present study the incidence 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 fibro adenomas and fibrocystic disease have been reported to regress with age. 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 ages 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.

CONCLUSION

Incidence 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. The incidence of diagnosing a malignant breast lump increased with age in each subsequent age group. 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 in managing breast lumps especially in the younger age groups between 30-50 years. Breast should be examined by the female medical officer and gynecologist on all patients reporting to out patient department. Females with breast lumps should be encouraged to report for management as soon as a breast lump is detected.

REFERENCES

1. Siddiqi K, Imtiaz RM. Pattern of breast diseases: preliminary report of breast clinic. *J Coll Physician Surg Pak*. 2001; 11: 497-500.
2. Ghumro AA, Khaskheli NM, Memon AA, Ansari AG, Awan MS. Clinical profile of patients with breast cancer. *J Coll Physician Surg Pak*. 2002;12: 28-31.
3. Yusuf A, Khan JS, Bhopal FG, Iqbal M, Minhas S, Mahmood N, et al. Level of awareness about breast cancer among females presenting to a general hospital in Pakistan. *J Coll Physician Surg Pak*. 2001;11:131-5.
4. Berg JW, Hutter RV. Breast cancer. *Cancer* 1995; 75: 257-69.
5. Saunders CM, Baum M. The breast. In: Russell RCG, Williams NS, Bulstrode CJK editors. *Bailey and Love's short practice of surgery*. 23rd ed. London: Arnold, 2000: 749-72.
6. Ahmed M, Khan AH, Mansoor A. The pattern of malignant tumors in Northern Pakistan. *J Pak Med Assoc* 1991;41: 270-3.
7. Malik IA, Khan WA, Khan ZK. Pattern of malignant tumors observed in a University Hospital; a retrospective analysis. *J Pak Med Assoc* 1998; 48: 120-2.
8. Rasool A, Malik MI, Luqman M. A clinicopathological study of carcinoma of breast. *Pak J Med Res* 1987; 26: 135-9.
9. Mehdi I. Breast carcinoma: treat or over treat. (editorial). *J Pak Med Assoc* 1996; 46:142-3.
10. Dunn JM, Lucarotti ME, Wood SJ, Mumford A, Webb AJ. Exfoliative cytology in the diagnosis of breast disease. *Br J Surg*. 1995; 82: 789-91.
11. Usmani K, Khanum A, Afzal H, Ahmed N. Breast carcinoma in Pakistani women. *J Environ Pathol Toxicol Oncol* 1996; 15: 251-3.
12. Chaudhuri M, Sen S, Sengupta J. Breast lumps a study of 10 years. *J Indian Med Assoc* 1995;93: 455-7.
13. Fleming NT, Armstrong BK, Shiner HJ. The comparative epidemiology of benign breast lumps and breast cancer in Western Australia. *Int J Cancer* 1982 ;30:147-52.
14. West KW, Rescoria FJ, Scherer LR. Diagnosis and treatment of symptomatic breast masses in the paediatric populations. *J Paed Surg* 1995;30:182-7.
15. El Tamer MB, Song N, Wait RB. Breast masses in African American teenage girls. *J Pediatr Surg* 1999; 34: 140-4.
16. Palmar ML, Tsangaris TN. Breast biopsy in women 30 years old or less. *Am J Surg* 1993;165: 708-12.
17. Donegan WL. Introduction to the history of breast cancer. In: Donegan WL, Spratt JS, editors. *Cancer of the breast*. 4th edn. Philadelphia: W B Saunders, 1995:1-15.
18. Raju GC, Jankey N, Narynsingh V. Breast diseases in young West Indian women; an analysis of 1051 consecutive cases. *Postgraduate Med J* 1985 ; 61:977-8.
19. Parveen S, Shahid MA. Prognostic factors in stage-I breast cancer: a prospective study. *J Pak Med Assoc* 1997; 47:117-8.
20. Bennett IC, Freitas R Jr, Fentiman IS. Diagnosis of breast cancer in young women. *Aust N Z J Surg* 1991; 61: 284-9.
21. Gaudette LA, Silberger C, Atmayer CA. Trends in breast cancer incidence and mortality. *Health Report* 1996; 8:29-37.
22. Shah SH, Kayani N, Hasan SH. Diagnostic evaluation of needle aspiration cytology in the management of palpable breast lesions. *J Pak Med Assoc* 1998; 48:7-8.
23. Menon M, Teh CH, Chua CL. Clinical and social problems in young women with breast carcinoma. *Aust N Z J Surg* 1992; 62:364-7.
24. Ihekweba FN. Benign breast disease in Nigerian women: a study of 657 patients. *J R Coll Surg. Edinburgh* 1994; 39: 280-3.
25. Ciato S, Bonardi R, Ravaioli A, Canuti D, Foglietta F, Modena S, et al. Benign surgical biopsies: are they always justified? *Tumori* 1998; 84:521-4.
26. Lacquement M, Michell D, Alan BH. Positive predictive value of breast imaging reporting and data system. *J Am Coll Surg* 1999; 189:34-7.
27. Raju GC, Narynsingh V. Benign breast diseases in a West Indian population. *Br J Surg* 1985; 72:17-8.
28. Cotran RS, Kumar V, Robbins SL. *The Breast*. In: Robin's pathologic basis of disease. 4th edn. Philadelphia: W B Saunders. 1989:1181-1204.
29. Harries SA. Prognostic factors in early breast cancer: In: Taylor I, Johnson CD (editors) *Recent advances in surgery* 17. Edinburgh: Churchill Livingstone 1994:105-18.