Original Article

Breast tumors in females: A Review Of 500 Malignant Cases.

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Summary

Background: Breast carcinoma is the most common malignant tumor and the leading cause of carcinoma death in women, with more than 1,000,000 cases occurring worldwide annually.(1) as a matter of fact , the mortality rate for breast carcinoma changed very little from the 1930s to the early 1990s, because of the combined action of earlier diagnosis and improved therapy .

Materials and methods: The prospective study included 500 cases of breast carcinoma who went total mastectomy , between October 2006- April 2007, where taken from private pathology laboratory , sections(4microns) are taken and stained with H&E stain and over-reviewed.

Results: Clinicopathological analysis of the 500 cases of breast carcinoma, including the age, clinical presentation, the site of the tumor, the mammography results, the microscopic morphology, the stage and the grade of the tumor. The age in relation to the morphological classification also analyzed.

Conclusion: The commonest breast carcinoma in women is invasive ductal carcinoma, followed by lobular carcinoma, with mean age 44.5 year, mainly in the left breast, and that mammography approach is so useful in early detection of breast carcinoma.

Key words: breast tumors, breast carcinoma.

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Introduction

Brest tumors are the most important lesions of the female breast. Although they may arise from either connective tissue or epithelial structures, it is the later that give rise to the common breast neoplasm (1&2)

Breast carcinoma is the most common malignant tumor and the leading cause of carcinomas death in women with more than 1000000 cases occurring world wide annually(3) However in some regions of the world breast cancer mortality is finally beginning to fall, presumably because of the combined action of earlier diagnosis using mammography and improved therapy, but this is not true for some Asian and African countries, in which the mortality continues to rise(4) Several risk factors for the development of breast cancers have been established, these factors is strong and/or prolonged estrogen. Stimulation operating on a genetically susceptible background(5,6,7).

Where as many others remain questionable. The common denominator for most of these factors is strong and / or prolonged estrogen stimulation operating on a genetically susceptible background(5,6,7)

Patients and Methods:

The prospective study included 500 cases of breast carcinomas who went total mastectomy, between October 2006- April 2007where taken from private .The specimens were already fixed in 10% formalin, and paraffin embedded. Sections (4microns in laboratory thickness) were cut from the paraffin block and stained with Haematoxylin and Eosin (H&E) stain and over-reviewed.

Clinicopathological analysis of those 500 cases, where we take the age ranging from less than 20 to more than 60 years.

The clinical presentation of the mass, weather it presents as a breast mass, axillary mass or nodule at a previous mastectomy scar i.e. recurrence of the tumor after removal. The site of the tumor, if it is right, left or bilateral, and the site of the mass in the breast itself, where it is divided into five quadrants (upper & lower outer quadrants, upper & lower inner quadrants and the central one) (11).

The mammography results which are divided into positive, negative and suspicious.(12).The microscopic morphology : According to the morphology it includes invasive ductal carcinoma, invasive lobular carcinoma, mucinous carcinoma, medullary carcinoma, invasive papillary carcinoma, squamous cell carcinoma,mixed (ductal and lobular), malignant phylloides tumor, lymphoma(HL & NHL), paget´s disease, metastases tumors.

Staging system of breast carcinoma according to the International Union against Cancer (UICC) and the American Joint Commission on Cancer Staging and End Results Reporting (AJC). It is based on the TNM system (T for tumors, N for lymph nodes, M for metastases). (8).

Grading is according to Bloom-Richardson System.(9,10) which is based on the architectural features (extent of tubular formation). These are usually estimated by visual microscopic examination of routinely stained sections.

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Results:

Age distribution: according to table 1; 0.8%of the cases were below 20 years, 3.2% between (20-30) years, 31.6% between (31-40) years, 33.6% between (41-50) years, 18% between (51-60) years and 12.8% more than 60years.

The highest figure for breast carcinoma for the age was found to be between (41-50) years, was 168 cases (33.6%) and the lowest figure below 20 years of age, 4cases (0.8%).The mean age for breast carcinoma in our study is 44.5 years.

Table 1: age distribution of 500 cases of breast carcinoma.

Age in years	Number of cases	%
<20	4	0.8
20-30	16	3.2
31-40	158	31.6
41-50	168	33.6
51-60	90	18
>60	64	12.8
total	500	100%

clinical presentation: About 470 cases (94%)were presented clinically as a breast mass, 4 cases (0.8%)present as axillary mass and 26 cases (5,2%)present as a nodule at a scar of previous mastectomy i.e recurrence.

site of the tumor: In table2 , 352 cases were on the left breast (70.4%), 140 cases were on the right (28%) and 8 cases (1.6%) were bilateral.Of the 352cases on the left; 156(44.3%) found in upper left outer quadrant (UL) , 48 cases (13.6%) in upper right inner quadrant(UR) , 83cases were central (23.5%) , 39 cases(11.07%) in the lower right (LR) ,and 26 cases (7.4%) in the lower left (LL).Those in the right side 140 cases, 75 cases(53.5%) in upper right(UR) , 15 cases (10.7%) in upper left(UL) , 21cases were central (15%) , 11 cases(7.8%) in the lower right (LR) , and 18cases (12.8%) in the lower left(LL).

So according to the site most of the breast cancers were to be on the left (mainly in the upper left outer quadrant, 44.3%).In the right breast most of the cases found in the upper right outer quadrent(53.5%).

Table 2: the site of the tumor of breast carcinoma of 500 cases

Tumor site		UL(outer)	UR(inner)	central	LR(outer)	LL(inner)
Left	352(70.4%)	156(44.3%)	48(13.6%)	83(23.5%)	39(11.07%)	26(7.4%)
Right	140(28%)	15(10.7%)	75(53.5%)	21(15%)	11(7.8%)	18(12.8%)
Bilateral	8(1.6%)					
Total	500(100%)					

classification in relation to the morphology: According to table 3 ; out of 500 cases of breast carcinoma , 326(65.2%) were invasive ductal carcinoma , invasive lobular carcinoma108(21.6%) ,mucinous carcinoma 8cases(1.6%),medullary carcinoma 24 cases(4.8%) squamous cell carcinoma 2cases(0.4%).

mixed(ductal and lobular)carcinoma 4cases(0.8%), malignant phylloides tumor 4cases (0.8%), lymphoma 6cases(Hodghkin's lymphoma;HL; 2cases & non- Hodghkin's lymphoma;NHL; 4cases),metastatic tumor 4cases(0.8%), Paget's disease 2cases(0.4%).

Table 3: the morphology of 500cases of breast cancers

Morphology of the tumor	Type of the tumor	Number of cses(%)
	Invasive ductal carcinoma	326(65.2%)
	Invasive lobular =	108(21.6%)
	Mucinous carcinoma	8(1.6%)
	Medullary carcinoma	)4.8%24 (
	Squamous cell carcinoma	2(0.4%)
	Mixed(ductal&lobular)	4(0.8%)
	Malignant phylloides tumor	4(0.8%)
	Lymphoma: HL NHL	6(1.2%) 2(0.4%) 4(0.8%)
	Metastatic tumor Paget's disease	4(0.8%) 2(0.4%)
total		(100%)500

stage of the tumor:Most of the cases of breast carcinoma were stage III , 272(54.4%), while 281(43.6%) were stage II, 10 cases (2%) were stage IV , and no case was diagnosed at stage I

tumor grade: About 204 (40.8%)cases of breast carcinoma were grade II, 296cases (59.2%) were grade III, and no cases seen in grade I.

mammography findings About 304 cases(60.8%) of breast carcinoma were showing positive micro calcification on mammography exam , 168cases (33.6%) showing no micro calcification i.e negative , and 28cases (5.6%) were suspicious , and all were stage II .

Age classification in relation to the morphology:According to table 4; the four cases found below age of 20 years, 2were diagnosed as Hodgkin's lymphoma, and 2 were diagnosed as ductal carcinoma.

Between 20-30 years, 12cases were diagnosed as ductal carcinoma, 2were lobular carcinoma, and 2were medullary carcinoma.

Between 31-40 years ; 109cases were diagnosed as ductal carcinoma, 30cases were lobular , 3cases mixed(ductal& lobular) carcinoma, 2were mucinous carcinoma, 5cases were medullary carcinoma, 4cases were NHL, 2cases were squamous cell carcinoma , and 3cases were diagnosed as metastatic carcinoma.

Between 41-50 years, 110 cases were dignosed as ductal carcinoma, 37were lobular carcinoma, 1case was mixed carcinoma, 2cases were Paget's disease, 11 cases were medullary carcinoma 7cases were papillary carcinoma.

Between 51-60 years, 60 cases were ductal carcinoma, 20 cases were lobular carcinoma, 4cases

were malignant phylloides tumor, 2were papillary carcinoma, 1case was metastatic tumor, 3 were medullary carcinoma.
Above 60 years, 33cases were ductal carcinoma, 19cases were lobular carcinoma, 6cases were mucinous carcinoma, 3cases were papillary carcinoma, and 3cases were medullary carcinoma.
So from these results we can see that ductal carcinoma can be seen in any age, while lobular carcinoma is rarely seen below 20 years.

Table 4: age classification in relation to the morphology of 500 cases of breast carcinoma:

The morphology	Age in years					
	Age<20	Age 20-30	Age 31-40	Age 41-50	Age 51-60	Age>60
Invasive ductal ca	2	12	109	110	60	33
Invasive lobular ca		2	30	37	20	19
Mucinousca			2			6
Medullaryca		2	5	11	3	3
Invasive papillary ca				7	2	3
Squamous cell ca			2			
Mixed ca			3	1		
Malignant phylloides tumor					4	
lymphoma	2(HL)		4(NHL)			
Metastatic tumor			3		1	
Paget's disease				2		
total	4	16	158	168	90	64

Conclusion:
In our study the invasive ductal carcinoma represent 65.2% , while a study by Berg JW, Hutter RV(13), it represent approximately 75% of all cases.
A study by IARC (14) , showed that the highest figures of breast carcinoma mainly seen in postmenopausal women , in our study the main age group for breast carcinoma seen in between (41-50 years) ; 168cases(33.6%) i.e mainly in perimenopausal women , and this earlier presentation may be due to the air pollution and the tensioned life style.
The current study show that about 352cases (70.4%) are located in the left breast and about, 44.3% in the upper outer quadrant and ; 13.6% in the upper inner quadrant , 23.5% are central , 11.07% in the lower outer quadrant and 7.4% in the lower inner quadrant.
A study by Tulinius H et al (11)[] showed that the breast carcinoma is slightly more frequent in the left breast than the right and approximately 50% are in the upper outer quadrant; 15% in the upper inner quadrant; 17% in the central region (within 1 cm of the areola), and 3% in the lower part of the breast.
About 8 cases (1.6%) are bilateral, and all are lobular carcinoma. A study by Heron DE et al (15) showed that the chance that a patient with invasive breast carcinoma, will develop a carcinoma in the contra lateral breast is about five times that of the general population, and it is even higher if there is a family history of breast carcinoma; in cases of lobular carcinoma the figure can be as high as 25% to 50%.
The widespread use of mammography has radically changed the diagnostic approach to breast cancer. Extremely small tumors (1-2cm) can be detected with technique, which relies primarily on the presence of microcalcification. the incidence of calcification in breast carcinoma is approximately 50%-60%.this was proved by a study by Millis RR et al.[16] in our study the positive findings represent 60.8% which is in agreement with Millis RR et al.
The negative results are 33.6% in our study; where it should be kept in mind a negative mammography does not rule out the possibility of the presence of carcinoma, since 20% of palpable tumors are not detected with this technique.[1] Millis RR et al (16) showed that only 20% of the lesions labeled "suspicious" mammographicaly are malignant, while our study showed that 5.6% of the cases are suspicious mammographicaly. The relationship between the age and the morphology as shown in table 4 ; where our study showed that most of the cases of ductal carcinoma are seen in the age between (41-50)years, lobular carcinoma mainly seen between the age (41-50), and papillary carcinoma, medullary carcinoma, Paget's disease are all seen mainly between (41-50) years.
Most cases of medullary carcinoma appear under the age of 50 years this is shown by a study by Shousha S.(17)
Papillary carcinoma occur more frequently among white , postmenopausal women , this is shown by a study by Fisher ER et al (18)

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