

Clinicopathological study of mastectomy specimens in tertiary hospital

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Abstract

Introduction: Breast cancer is by far the most frequent cancer in females and is second overall next only to lung.

Aims and Objectives: To study the breast lesions in simple mastectomy and MRM specimens. To classify the breast lesions and study them with age, clinical presentation and various pathological parameters.

Methodology: A 3 years retrospective cross-sectional study of all the mastectomy specimens received in the department of pathology from Jan 2012 to Dec 2015. The sections were retrieved and diagnosis were confirmed. The necessary clinical data was collected from the record sections.

Results: Out of 73 mastectomy specimens studied 63 cases of Malignant lesions were found in MRM, 07 cases of malignant lesions in simple mastectomy and only 03 benign lesions were found. 52% cases were in the age group of 41-50 yrs and 54.80% lesions involving the left breast. Only 23.70% cases were fixed to the underlying structures and only 41% cases with lymphnode involvement. 70.72% cases were of IDC and 73.74% were Grade II lesions.

Conclusion: In our study maximum number of cases were diagnosed and treated at an earlier stage of malignancy that indicates the early awareness of breast lumps.

Key Words: Breast, Mastectomy, Infiltrating duct carcinoma

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Introduction

Breast cancer is by far the most frequent cancer in female, both in developed and developing regions and is second overall next only lung^(1,2). It is also a second leading cause of cancer death among women.⁽³⁾

Globally, it was estimated there were 1,150,000 new cases with 410,000 deaths in 2002.⁽¹⁾

Every year 75,000 new cases of breast cancer are diagnosed in Indian women.⁽³⁾

The pathogenesis of breast cancer is complex. Genetic susceptibility –specific chromosomal alterations associated with mutations in BRCA -1 gene on long arm of chromosome 17 and BRCA 2 gene on chromosome 13 are identified. MRI and PET scanning have greater sensitivity and specificity for detection of carcinoma in BRCA mutation carriers or high risk women. Chemoprevention of breast carcinoma has been effective in prospective trials of women at high risk.⁽⁵⁾

Although there is a rising trend of breast cancer across Asia, Singapore has the highest age adjusted breast cancer incidence of any Asian nation or city. The incidence has tripled since 1968.⁽⁶⁾

In Pakistan breast carcinoma is the most common malignant tumour and accounts for approximately 25% of all malignant tumours in female populations.⁽⁷⁾

There are various studies on breast cancer in various parts of the country. These studies have been done using various parameters including patients age, tumour size, tumour stage, grade, location, lymphnode metastasis, mastectomy as a treatment modality and effectiveness of surgical intervention and neoadjuvant therapy or effectiveness of IHC markers for post-surgical chemotherapy etc.

We have carried out this retrospective cross sectional study on the various mastectomy specimens that we received. Few simple mastectomy specimens had infiltrative malignancies, when we had informed the surgeons immediately. We had felt MRM would have been the correct surgery expected. So we feel this study may help the surgeons to have a good preoperative workup before they plan the surgery.

Though hormone receptor analysis is a prerequisite in this era, for management and prognosis, still histopathological grading can be taken up as an important variable for predicting prognosis. Carcinomas with ER/PR positivity have a good prognosis as compared to carcinomas with ER/PR negativity. Also histological grading has a bearing on the prognosis, as high grade have poor prognosis and vice versa.⁽⁵⁾

Aims and Objectives

1. To study the breast lesions in simple mastectomy and MRM specimens
2. To classify the breast lesions as benign and malignant and to identify the common lesions

3. To study the correlation of breast lesions with age and clinical presentation
4. To study the IHC hormone receptor in breast carcinoma wherever possible

Materials and Methods

Its a retrospective cross sectional study conducted in department of Pathology from January 2012 to December 2015.

We studied all the mastectomy specimens received in this period. Specimens were received in 10%

formalin; analysed in detail for the parameters like size, external surface. Paraffin embedded sections were studied routine H & E. Special stains and IHC was done wherever necessary. The malignant tumours were graded by Nottingham modification of Bloom Richardson's method, lymphovascular invasion and lymphnode involvement was evaluated.

The neoplastic lesions were studied according to WHO classification 2002. Relevant clinical details of the patient like age, clinical presentation, was obtained from case sheets.

Results

Table 1: Number of benign and malignant cases

Type of lesion	No. of cases	Percentage
Benign	03	4.08
Malignant	60	81.6
No residual tumour	08	10.88
Phylloides with borderline malignancy	02	2.72
Total	73	100

Table 2: Spectrum of various breast lesions in Simple mastectomy And MRM specimens

Simple Mastectomy	Benign	03	4.08
Simple Mastectomy	Malignant	07	9.52
MRM	Benign	00	00.00
MRM	Malignant	63	85.68

Table 3: Age wise distribution of cases

Age in years	Benign	Benign %	Malignant	Malignant %
30 -39	01	33.33	02	2.84
40 -49	02	66.67	36	51.12
50- 59	00	-	18	25.56
60	00	-	14	19.88
Total	3	100	70	100

Table 4: Side of mastectomy

Side	No. of cases	Percentage
Right	33	45.20
Left	40	54.80

Table 5: Mode of presentation

Mode of presentation	No. of cases	%
Lump	55	74.8
Lump + Pain	04	5.44
Lump + Nipple Discharge	09	12.96
Lump + Skin Changes	05	6.80

Table 6: Types of Neoplasms: WHO classification

Sr. No	Types	No. of cases	%
I	Epithelial Tumours		
1	Invasive ductal carcinoma: NOS	52	70.72
2	Invasive Lobular carcinoma	02	2.72
3	Tubular Carcinoma	00	00.00
4	Mucinous Carcinoma	02	2.72
5	Medullary Carcinoma	00	00
6	Invasive Papillary	01	1.36

7	Apocrine Carcinoma	00	00
8	Metaplastic Carcinoma	00	00
9	Mixed IDC + Mucinous	02	2.72
II	Mesenchymal Tumours	00	00
III	Myoepithelial Tumours	00	00
IV	Fibroepithelial tumours		
1	Fibroadenoma	00	00
2	Benign Phylloides Tumour	03	4.08
3	Borderline Phylloides Tumour	01	1.36
4	Malignant Phylloides Tumour	03	4.08
V	Pagets disease of Nipple	00	00
VI	Lymphoma	00	00
VII	Metastatic Tumours	00	00
Total		66	100

07 (9.52%) case of no residual tumour reported.

Table 7: Histological grading of breast carcinoma

Grade	No. of cases	Percentage
Grade I	11	15.62
Grade II	52	73.84
Grade III	07	9.94

Table 8: Lymphovascular invasion in malignancy

Lymphovascular invasion	No. of cases	Percentage
Present	27	38.34
Absent	43	61.06

Table 9: Lymphnode involvement

	No. of cases	Percentage
Involved	29	41.18%
Not involved	41	58.22%

Discussion

Worldwide a number of studies have been published regarding breast cancer statistics. To be of maximum value to the clinician in estimating prognosis and planning adjuvant therapy, the prognostically important variables have been included in our study like patients age, side of breast involved, mode of presentation, histological grade, stage, lymphovascular invasion, lymphnode involvement and hormone receptor status in few cases. We have also included the type of mastectomies and the lesions found accordingly.

We have considered the studies carried in Pakistan, Singapore and Malaysia for comparison of the variables of our study as well as the western countries.

We studied 73 cases of mastectomy specimens. We found 03 benign breast lesion and 07 malignant lesion in the 9.52% simple mastectomy specimens. Total 70 malignant lesions and no benign lesion were found in the MRM specimens. Of these 07 (9.52%) MRM showed no evidence of residual tumour. Maximum number of cases i.e. 38 were noted in the age group of 41 -50 yrs with the mean age of 44.6 yrs. Of these 36 were malignant and 02 were benign lesions. 40 cases of

malignant lesions were noted in the left breast (54.80%) and 33 (45.20%) in the right breast.

In the study of Shahid Siddiqui et al the mean age of the patients was 48 yrs.⁽⁷⁾ In Zubair Ahmads⁽⁸⁾ study it was 47yrs. In Benjamin Dale⁽⁹⁾ study it was 47 yrs. Similar was the age group in other studies by Sunita Saxena⁽¹⁰⁾, DS Sandhu⁽¹¹⁾ Mohapatra.⁽¹²⁾ In the study by Temidayo⁽¹³⁾ the age group was slightly less 43 yr and also in Saha's⁽¹⁴⁾ Study it was 42 yr.

Similar to other studies in Asia the mean age group in our study was also 44.6 yr. In majority of the studies the right breast was commonly involved in malignancy. In studies of Benjamin Dale⁽⁹⁾ right breast was commonly involved 51.6%; Temidya⁽¹³⁾ 52.2%; and Saha⁽¹⁴⁾ 51.7%. But like the findings of D S Sandhu⁽¹¹⁾ who found 51.6% left breast common involvement in our study too we found left breast to be involved as 54.80%.

Lump in breast is the common symptom even in our case(74.8%) followed by associated nipple changes (12.96%), Mohapatra⁽¹²⁾ found 97.2%, DS Sandhu⁽¹¹⁾ 87.9%, Benjamin Dale⁽⁹⁾ found in 78% cases lump as the commonest presenting symptom.

Unlike Benjamin Dale⁽⁹⁾ Mohapatra⁽¹²⁾ who found upper outer quadrant as a commonest location in 53.8% and 65% cases, in our study central was the commonest location in 53.4% cases.

In the study by Sunita Saxena⁽¹⁰⁾ 88.2% of the malignant tumours were fixed to the underlying structures. Saha⁽¹⁴⁾ found only 56.7% tumour fixed to underlying structures. But in our study we found only 23.70% tumours fixed to underlying structures. This indicates that in our study the patients were aware about the breast lumps and approached the doctors at an early stage.

Like most of the other studies by Shahid Siddiqui⁽⁷⁾(81.99%), Zubair Ahmad⁽⁸⁾(90%); DS Sandhu⁽¹¹⁾ 96.9%, Mohapatra⁽¹²⁾ 95.5%, Temidayo⁽¹³⁾ 70.3% and Saha⁽¹⁴⁾ 90.8% even in our study IDC was the most common 70.72% histological type of malignant tumour.

Mohapatra⁽¹²⁾ found 59.5% cases of Grade II tumours, Shahid Siddiqui⁽⁷⁾ 65%, Saha⁽¹⁴⁾ 51.7% cases of malignant tumours in Grade III, Benjamin⁽⁹⁾ 59.1% in Grade II. But in our study 73.84% cases were of Grade II malignancy.

Most of the studies show almost 60 -90 % cases showing lymphnode involvement in the studied cases of mastectomies. Zubair Ahmad⁽⁸⁾ 90%, Shahid Siddiqui⁽⁷⁾ 85% Sunita Saxena⁽¹⁰⁾ 80.2%, Mohapatra⁽¹²⁾ 58.9%. In our study we found only 41% cases with lymphnode involvement which is similar to the study of DS Sandhu who has only 39% cases showing lymphnode involvement. This also supports the suggestion of the increased awareness of the breast lump and early detection of breast malignancies in our area.

IHC was obtained in only 23 cases in our study of which 09 cases were ER positive and 06 cases were PR positive. Only 01 case was triple positive and 09 cases were triple negative. As in our study majority of cases were diagnosed in earlier stage.

The presence of axillary nodal metastasis and size of the primary tumour are the most widely accepted prognostic factors for operable breast cancer.⁽¹⁵⁾

Women with breast carcinoma have a threefold to fourfold increased risk of developing a new primary cancer in opposite breast. In addition radiotherapy for primary breast carcinoma may also contribute to the development of carcinoma in the contralateral breast.⁽¹⁶⁾

We did not find a single case of bilateral breast carcinoma.

Conclusion

In our study maximum number of cases were diagnosed and treated at an earlier stage of malignancy that indicates the early awareness of breast lumps.

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