



International Journal of Medical Research & Health Sciences

www.ijmrhs.com Volume 2 Issue 3 July - Sep Coden: IJMRHS Copyright ©2013 ISSN: 2319-5886

Received: 14th May 2013 Revised: 5th Jun 2013 Accepted: 10th Jun 2013

Case report

HISTOMORPHOLOGICAL PATTERNS OF BREAST CARCINOMA : CASE REPORTS

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ABSTRACT

Breast carcinoma is the most frequent cancer in women worldwide. Diagnosis is made by triple assessment of clinical, radiological and pathological correlation. Of all the types of breast carcinoma diagnosed, infiltrating duct carcinoma constitutes about 75%, invasive lobular carcinoma 5-15%, medullary carcinoma 1-7%, secretory carcinoma (rare type) <1%.

Keywords : Breast carcinoma, Infiltrating duct carcinoma, Triple assessment

INTRODUCTION

Women worldwide with 1.05 million new cases of Breast Carcinoma every year represent over 20% of all malignancies¹. It has a complex etiology with the interplay of the many causal factors including hormonal, genetic and environmental². Diagnosis is made by triple

assessment which includes clinical, radiological and pathological correlation. According to the study conducted by Saxena et al, the commonest age group of incidence was 45-54 years (31.8%). Nearly 22% of cases were below 40 years while 16% of cases were above the age of 65 years³.

Table 1: CASE REPORTS - Breast Carcinoma

Case No.	Age	Gross findings	Biopsy report	Axillary Lymph node metastasis	Hormone receptor status (ER/PR)
1.	43	7.5×5×3 cm	IDC *	-	Negative
2.	40	6×4×2 cm	IDC	Positive	Weakly positive
3.	70	3×2×1cm	IDC with neuroendocrine focal papillary and cribriform patterns	-	Negative
4.	42	3×2×2cm	IDC with intraductal component	-	ER > 90% PR > 90%
5.	84	2.5×2×1.5cm	IDC with neuroendocrine differentiation	-	ER 75% PR 85%

Case No.	Age	Gross findings	Biopsy report	Axillary Lymph node metastasis	Hormone receptor status (ER/PR)
6.	46	11×4×4cm	IDC with focal papillary pattern	Positive	Negative
7.	52	6×4×3cm	ILC [#]	Positive	Negative
8.	71	3.5×3×2cm	Medullary carcinoma	Positive	Negative
9.	50	5×4.5×3cm	Secretory carcinoma	-	Negative

(*) IDC - Infiltrating Ductal Carcinoma ; () ILC –Infiltrating Lobular Carcinoma ; () ER/PR - Estrogen and Progesterone Receptor

CASE I : 6 case of IDC with similar gross morphology of the irregular firm to hard mass, cut section - gray white was reported. Microscopy showed neoplastic ductal epithelial cells with moderate nuclear pleomorphism arranged in solid sheets, nests, tubules, alveolar and trabecular patterns infiltrating into the fibro

fatty stroma of breast. One case had features of the intense desmoplastic reaction. Neuroendocrine pattern with rosette like formations was seen in 1 case; metastasis to axillary lymph nodes was seen in 2 cases. Tumor grades were 1-2. Two cases were positive for ER/PR receptors. (Figure 1 & 2)

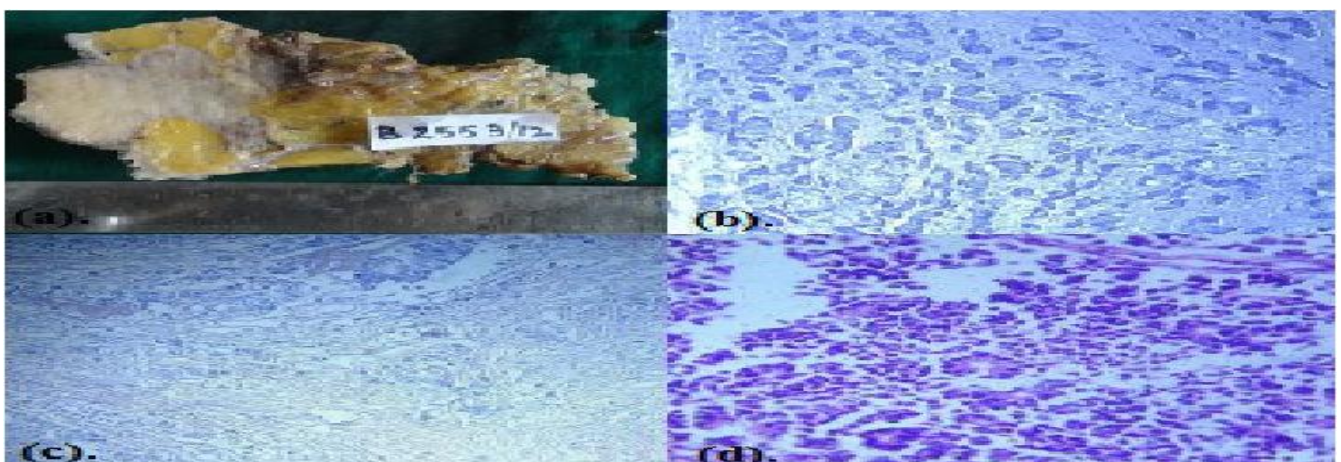


Figure. 1: (a) Gross appearance of Infiltrating Duct Carcinoma –c/s : infiltrative grayish white mass(b) Low power view (10 X,H&E) of Infiltrating Duct Carcinoma (c) Low power view(10X,H&E) of Scirrhous carcinoma showing intense desmoplasia. (d) High power view(40XH&E) of Infiltrating Duct Carcinoma with neuroendocrine differentiation.

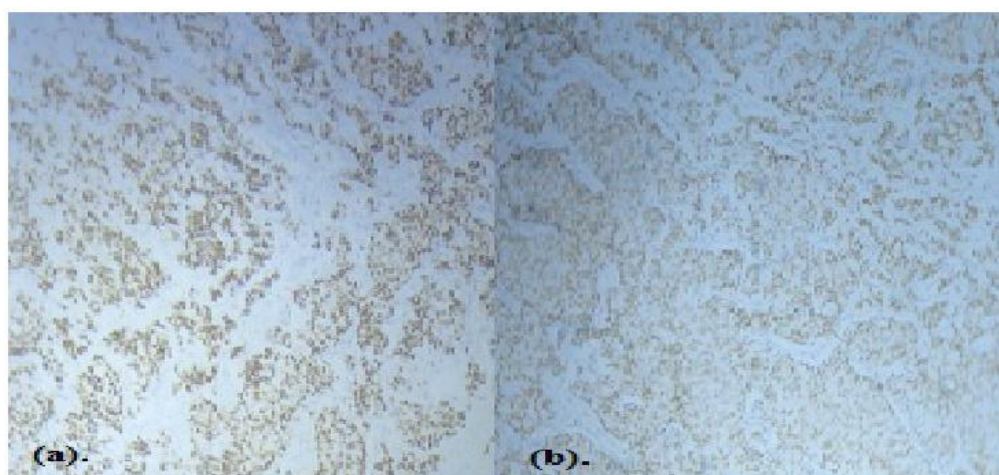


Figure. 2: (a) Estrogen and (b) Progesterone Receptor strong positivity in Infiltrating Duct Carcinoma

CASE 2 : ILC presented as an irregular gray white mass 2 cm away from the surgical margin. Sections of the tumor shows dyscohesive malignant cells with relatively uniform round

nuclei. Neoplastic cells were seen infiltrating in single file pattern. 3 lymph node were positive for metastatic deposits . Surgical margins were free from tumor infiltration.(Figure 3)

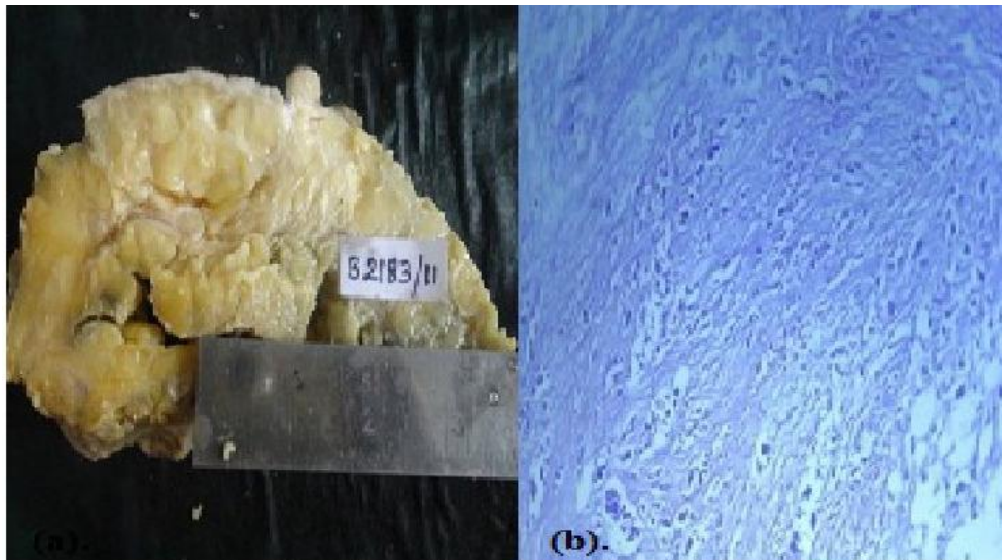


Figure.3: (a) Gross appearance of Infiltrating Lobular Carcinoma of breast -ill defined gray white mass. (b) Low power (10X,H&E) view of Lobular Carcinoma with Indian file pattern

CASE 3 : Secretory carcinoma presented as gray white to solid mass in a thick walled 5×4.5cm cyst, the wall of which was reddish brown , granular and contained blood clots and necrotic material. Microscopy showed infiltrating sheets and clusters of tumor cells with mild nuclear pleomorphism, surrounding microcystic spaces

filled with eosinophilic secretions. The tumor cells also formed tubular and papillary pattern with fibrovascular core in sclerotic stroma. Margins were infiltrated by the tumor cells. The tumor was negative for hormone receptors (Figure 4)

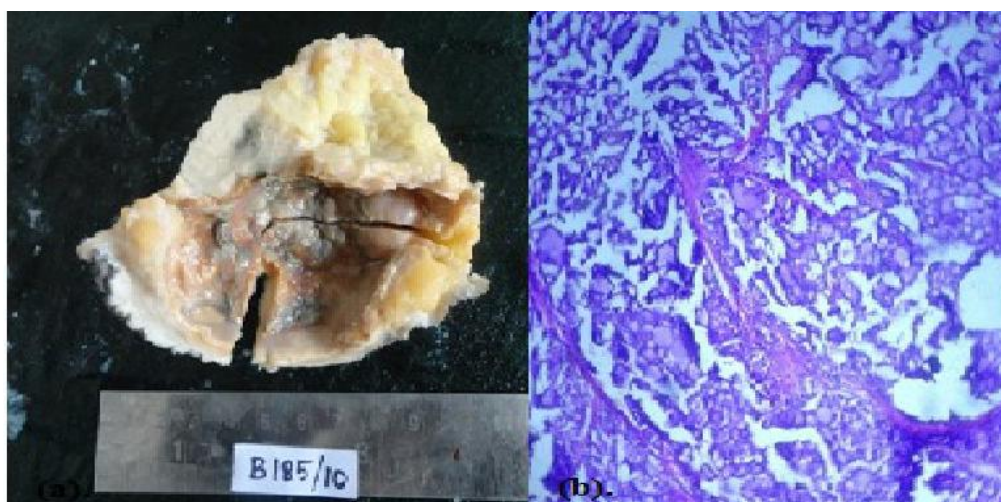


Figure. 4: (a) Gross appearance of Secretory Carcinoma with cystic cavity. (b) Low power (10X, H&E) view of Secretory Carcinoma with microcystic spaces filled with eosinophilic secretions, papillary pattern and solid sheets.

CASE 4 : Grossly Medullary carcinoma was a gray brown mass with haemorrhagic and necrotic cut surface. Microscopy showed pleomorphic cells with hyperchromatic and vesicular nuclei with prominent nucleoli, tumor cells arranged in sheets, syncytial masses and compact nests separated by fibrous stroma showing intense

lympho-plasmacytic infiltration. Extensive tumor necrosis, atypical mitoses and numerous giant cells were present. Surgical margins were free of infiltration. Metastasis to 6 axillary lymph nodes was positive. The tumor was negative for ER/PR. **(figure 5)**

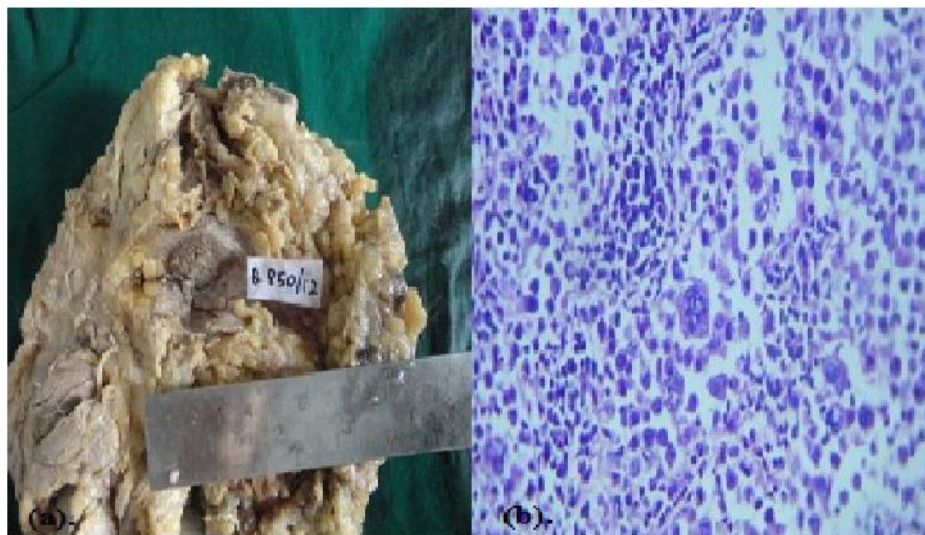


Figure. 5: (a) Gross appearance of Medullary Carcinoma - gray brown tumor mass. (b) High power view (40X,H&E) of Medullary Carcinoma with lymphoplasmacytic infiltrate, tumor giant cells and mitotic figures.

DISCUSSION

IDC constitutes about 75% of breast carcinoma⁴. There is general agreement that patients with ISC have significantly better prognosis than those with IDC or ILC⁵. According to the Nottingham modification of Scarff Bloom Richardson grading scheme, score is assessed : scores 3,4,5-low grade tumors , scores 6,7-intermediate grade and scores 8 & 9 are high grade tumors⁶. Assessment of histological grade is an important determinant of breast cancer prognostication and should be incorporated in algorithms to define therapy for patients with breast carcinoma⁷. ILC represents 5-15% of all breast carcinomas⁴. Tumor mass being ill defined, lobular carcinomas are difficult to detect clinically and by diagnostic mammography. The tumor has a characteristic dyscohesive cell population of low nuclear grade arranged in a single file pattern. Metastasis can occur to retroperitoneum,

gastrointestinal tract, orbit, leptomeninges and genitourinary tract⁸.

Medullary carcinoma comprises 1-7% of all invasive breast carcinomas⁴. Most are hormone receptor negative and Her 2 negative⁴. ER/PR status did not appear to be related to the relative risk of mortality among women with medullary carcinoma⁹. Their prognosis is more favourable than that of other invasive breast carcinomas⁹. It has been found that the extensive presence of plasma cells and lymphocytes helps to keep the medullary carcinoma in check preventing it from growing and spreading early¹⁰. A division of medullary carcinoma into typical and atypical subtypes has prognostic significance and doesn't modify treatment options¹¹. A cancer can be termed as classic medullary only if all five features of syncytial growth pattern in 75% of the areas examined , microscopic circumscription , high nuclear grade , lympho-plasmacytic

infiltrate and absence of tubular differentiation and intraductal component^{12,13}.

Secretory carcinoma, being reported in a 50 year old lady who presented as a case of breast abscess is one of the rare types and accounts for <1% of all breast cancers¹⁴. Our case had a mixed architectural pattern of solid, cribriform, tubular and papillary patterns with intra and extracellular secretory material showing PAS positivity. Favourable prognostic features are: tumor size <2cm, age <20 years at the time of diagnosis and tumor with circumscribed margins¹⁵.

Metastasis to axillary lymph node is the single most predictive of treatment failure and recurrence in patients with breast carcinoma¹⁶. ER/PR positivity has a better prognosis because of responding to hormone therapy¹⁷. Women with tumors lacking ER / PR expression have an estimated 1.5-2 fold higher risk of death¹⁸.

CONCLUSION

A series of 9 consecutive breast carcinoma cases are reported. Triple assessment comprising of clinical, radiological and pathological assessment should be made mandatory in high risk groups after self examination in view of the increasing incidence of carcinoma of the breast. The morphologic spectrum of carcinoma is wide with invasive ductal carcinoma constituting the majority in our study. ER/PR studies must be done in all cases as it has prognostic implication.

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