

Invasive Lobular Carcinoma of Breast – Study of 6 Cases

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Abstract

Invasive lobular carcinoma of the breast comprises 6.3% of all breast cancers. It is the second most common histological type of breast cancer. This tumour presents in older age group patients. Synchronous and metachronous behaviour is noted. Distinct characteristic features include bland morphology and distant metastasis.

We present 6 cases of Invasive Lobular carcinoma of breast to highlight the pattern of disease, clinical presentation and histopathological findings for early investigation and treatment.

Keywords: Breast, Cancer, Invasive, Lobular.

Introduction

Breast cancer is the most common malignancy in women and accounts for 19% of cancer deaths in women¹. Common histological type is Infiltrating Duct Carcinoma seen in 90% of all invasive breast cancers while lobular carcinoma accounts 6.3% of all breast cancers². The incidence of Invasive Lobular Carcinoma has been increasing which is postulated to be secondary to increased use of combined hormonal replacement therapy³. It differs from Infiltrating Duct Carcinoma by its distinct age group, clinical presentation, microscopic features as well as behavioural pattern.

We present 6 cases of Invasive Lobular Carcinoma to highlight the pattern of disease, clinical presentation and

histopathological findings for early investigation and treatment.

Table 1: Summary of clinicopathological findings.

Sn.	Age	Clinical findings	Radiology findings	FNAC	Gross	Microscopic findings	RB score, IHC.
1.	50/F	Lump in right breast since 1 month. Nipple was retracted.	BIRADS IV C. Ill-defined lump. No calcifications.	Highly suspicious for carcinoma cells.	Multiple, grey, white streaks like lesions measuring 4.1 x 3.8 x 2.5 cm in upper quadrant of right breast at 12o'clock position.	Invasive Lobular Carcinoma (Multifocal) ; both classic and pleomorphic. Total Lymph nodes- 14 Involved – 8/14 lymph nodes.	9 Grade III. ER+ PR+ Her-2 neu -
2.	69/F	4 x4 cm painless, hard, fixed lump in right breast since 4 months.	BIRADS V. Microcalcific-- ations noted.	Positive for carcinoma cells.	3.8 x 2.5 x 2.1 cm located in upper inner quadrant – Hard in consistency	Invasive Lobular Carcinoma (Multifocal) ; both classic and pleomorphic. Total Lymph nodes- 14 Involved – 10/14 lymph nodes.	7 Grade II. ER+ PR+ Her-2 neu -
3.	73/F	Lump in left breast since 6 months.	BIRADS V. Ill-defined lump. No calcifications.	Positive for carcinoma cells.	9 x 7.5 x 4 cm in upper inner quadrant.	Mixed Invasive Ductal and Invasive Lobular Carcinoma- Classic type. Total Lymph nodes- 12 Involved lymph nodes- 0/12	9 Grade III. ER+ PR+ Her-2 neu -
4.	48/F	Lump in left breast since 1 month	BIRADS IV C. Ill-defined lump. Microcalcifications present.	Epithelial proliferative lesion with mild to moderate atypia.	2.9 x 2.3 x 2 cm located in central subareolar region.	Invasive Lobular Carcinoma – Classic variant. Total lymph nodes – 24. involved lymph nodes – 5/24.	5 Grade I. ER+PR+Her-2 neu -
5.	65/F	Lump in left breast since 2 months	Satellite nodules on PET scan	Epithelial proliferative lesion.	0.4 x 0.3 x 0.1 cm.	Invasive Lobular Carcinoma – Classic variant.	5Grade I. ER+ PR+ Her-2 neu -
6.	35/F	Lump in right breast since 4 months	BIRADS V	Positive for carcinoma cells	3.2 x 2.2 x 1.8 cm	Invasive Lobular Carcinoma – Classic and pleomorphic. Total lymph nodes – 35 involved lymph nodes – 23/35	8 Grade III ER+ PR+ Her-2 neu -

Figure 1: Gross image of well-defined lump



Figure 2: Gross image of ill-defined lump



Figure 3: Photomicrograph of invasive Lobular carcinoma showing Indian file pattern. (40 X H&E)

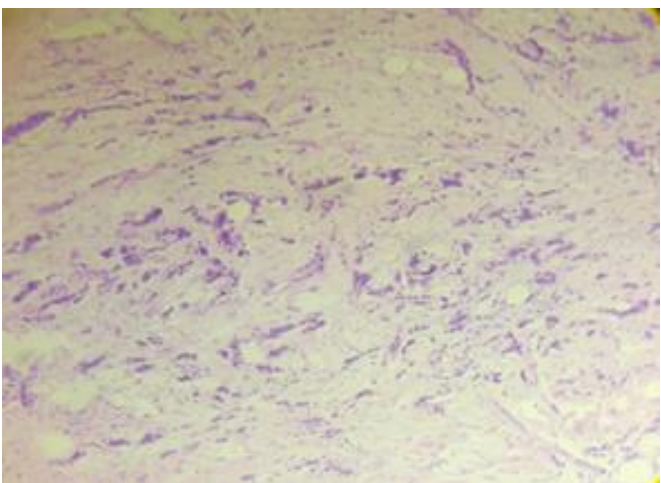


Figure 4: Pleomorphic variant of Invasive Lobular Carcinoma. Tumor cells arranged in small (100 X H&E)

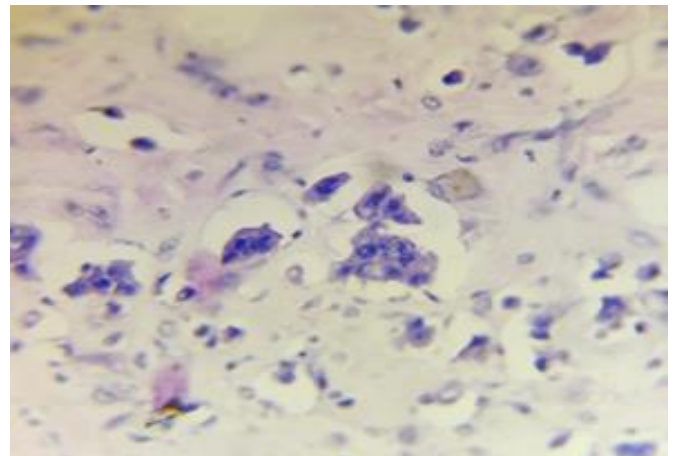


Figure 5 : Perineural invasion (100 X H&E)

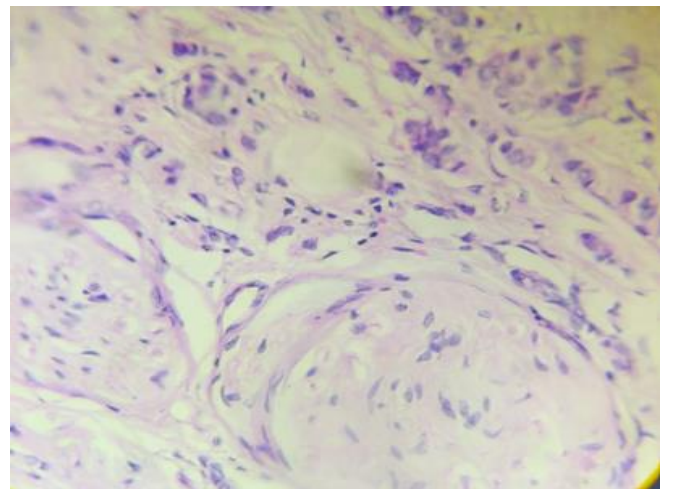


Figure 6: Classic Variant of Invasive Lobular Carcinoma, targetoid pattern (40 H&E)

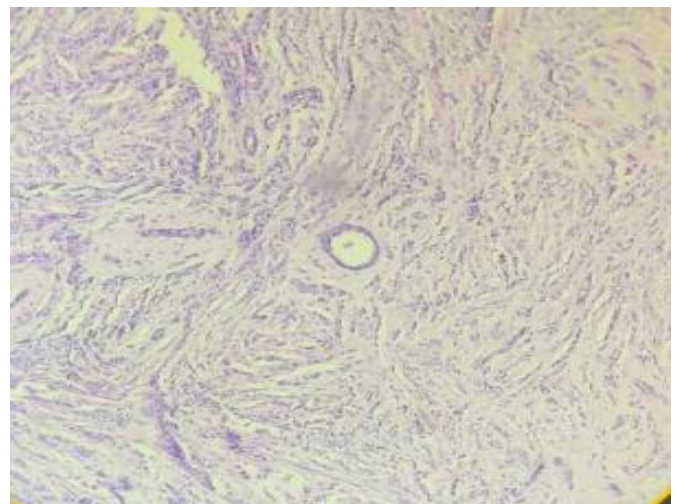


Figure 7: Tumour Emboli (100 X H&E)

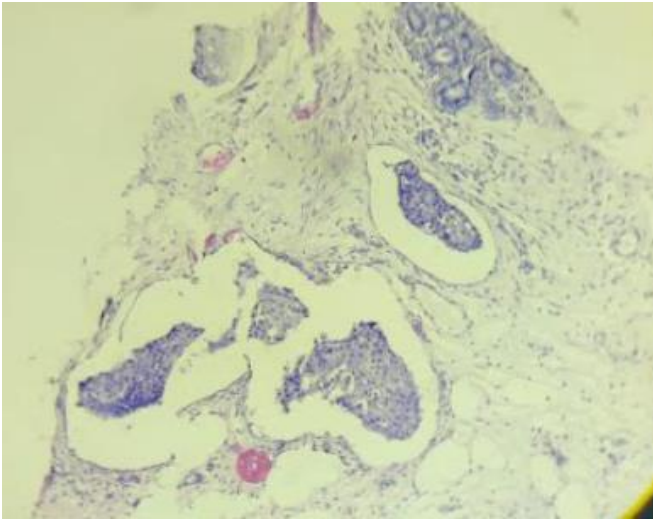


Figure 8: Invasive Ductal Carcinoma (100 X H&E)

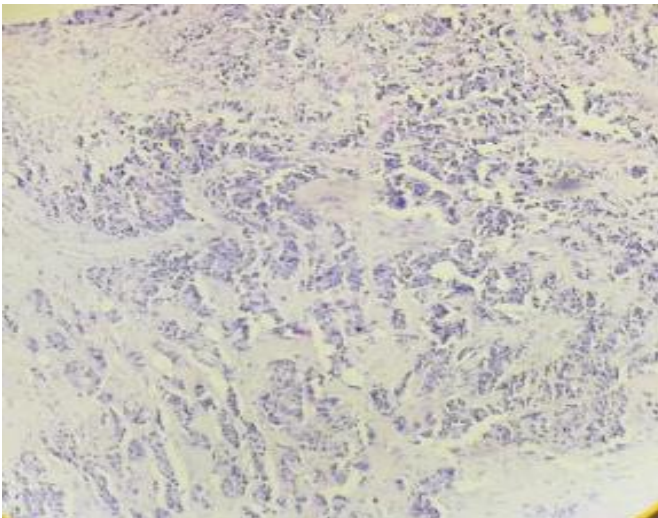


Figure 9: Lymph node metastasis (40 X H&E)

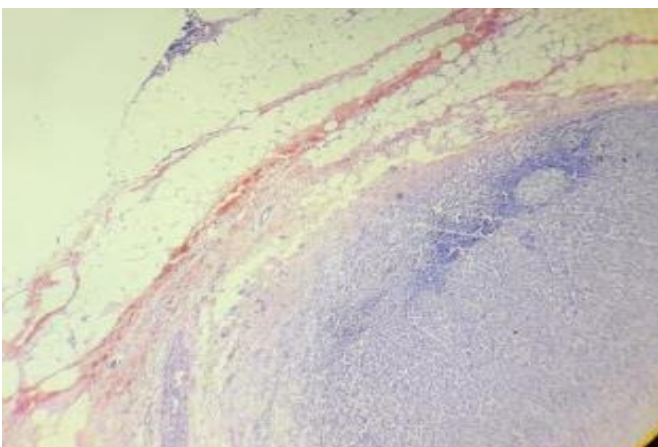
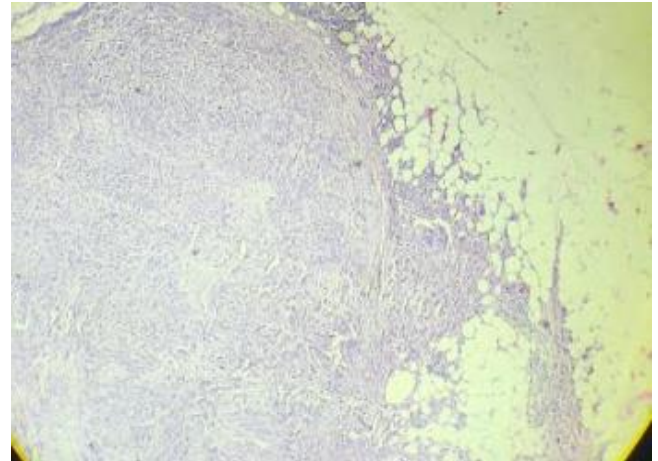


Figure 10: Lymph node metastasis (40 X H&E)



Age group ranged from 35 – 73 years with mean age of 56 years. All cases were female patients. In 50% (3) cases, tumour was seen in left breast while in remaining 50% (3) cases, tumour was seen in right breast. Duration of complaints range was from 1-12 months. 50% (3) cases presented with lump in left breast, out of which in 2 cases, lump was ill defined and hardly palpable. In the remaining 1 case, lump was seen since 2 months measuring 2.7 x 2.6 x 1 cm but after gross dissection, tumour was only of 0.4 cm in size while remaining tissue was showing fibrocystic change. Nipple retraction was noted in 33% (2) cases. Mammography was done in 5 cases and PET-CT scan of body was done in 1 case. 3 out of 5 cases (60%) revealed BIRADS IV while 2 cases were BIRADS V. The lump was ill defined in 4 out of 5 cases (80%). Calcification was noted in 2 out of 5 cases (40%). PET CT scan of body was done in 1 case which showed hypermetabolic soft tissue mass lesion with satellite nodules in left breast and showed involvement of left axillary, deep pectoral and supraclavicular lymph nodes. FNAC was done in all 6 cases out of which in 4 cases (66%), definitive diagnosis of malignancy could not be given and in 2 cases, diagnosis was given as positive for carcinoma cells (33%).

Modified Radical Mastectomy (MRM) was done in 5 out of 6 cases and excision biopsy was done in remaining 1

case. Histopathological examination revealed Mixed Invasive Ductal and Invasive Lobular Carcinoma (Classic) in 1 out of 6 cases (16.66%) with no metastasis in axillary lymph nodes. In remaining 5 cases, Invasive Lobular Carcinoma was seen out of which 4 cases (80%) were classic and pleomorphic variant of Invasive Lobular Carcinoma with metastasis in axillary lymph nodes. 2 cases (20%) were classic variant of Invasive Lobular Carcinoma with axillary lymph node metastasis in 1 case. Axillary lymph node dissection was not received in excision biopsy case. Multifocal tumour was seen in 4 out of 6 cases (80%). Richardson-Bloom (RB) score was grade III in 3 out of 6 cases (50%), 1 of which was Mixed Invasive Ductal and Invasive Lobular Carcinoma while remaining 2 were Invasive Lobular Carcinoma - classic and pleomorphic variant. RB score was 7 (grade II) in 1 out of 6 cases diagnosed as Invasive Lobular Carcinoma (classic + pleomorphic) while in 2 out of 6 cases, the score was 5 (Grade I).

Discussion

Invasive Lobular Carcinoma has distinct behavioural pattern. Patients with this carcinoma tend to be slightly older than those with non-lobular invasive carcinoma with mean age of 64 years⁴. In our case, mean age was 56 years. Invasive Lobular Carcinoma in many cases has no symptoms and is diagnosed incidentally as a suspicious screening area on mammogram. In other cases, clinician observes a thick or swollen area in the breast without formation of lump^{5,6}. Similar observation was noted in our 4 out of 6 cases. Invasive Lobular Carcinoma is characterised by multifocality in ipsilateral breast and are often bilateral^{7,8}. Bilaterality was not seen in our cases, however, multifocality was noted in 4 out of 6 cases. On mammography, architectural distortion is commonly seen while microcalcifications are less commonly noted⁹. In 2

out of 6 cases (33.33%), microcalcification was noted. 60% of the patients have lymph node metastasis or distant organ metastasis. In our cases, out of 5 cases where axillary lymph node dissection was received, 4 cases revealed lymph node metastasis while distant organ metastasis was not seen in our cases. One of the distinctive features of Invasive Lobular Carcinoma is spread to bones, peritoneum and retroperitoneum. Late development of distant metastasis is unique feature of Invasive Lobular Carcinoma¹⁰.

Invasive Lobular Carcinoma differs from Invasive Ductal Carcinoma in its morphological appearance. The characteristic histopathological features are discohesive population of neoplastic cells with low nuclear grade, without tubule formation. Discohesive cells are arranged in atypical single file pattern without destruction of breast tissue. Tumour cells are usually seen in concentric pattern around existing ducts and lobular units termed as targetoid pattern. Histological variants of Invasive Lobular Carcinoma are classic, solid, pleomorphic, tubulo-lobular, alveolar, signet ring, mixed type. The pleomorphic variant exhibits significant cytologic atypia. The cells are larger and may also be compared to signet ring cells filled with mucin with eccentric nuclei^{11,12}. The majority of Invasive Lobular Carcinoma are oestrogen and progesterone receptor positive and do not express Her-2 neu¹³. Similar observation was noted in our cases. Absence or reduction of membranous E-cadherin staining is useful but not necessary for diagnosis of Invasive Lobular Carcinoma. Other positive IHC markers are GATA-3, GCDFP, Mucicarmine¹³.

Conclusion

Invasive Lobular Carcinoma has distinct clinical presentation, mammographic features and morphological features on histopathological examination. Non specific

symptomatology can delay the definitive diagnosis and treatment. Knowledge of the spread of disease is necessary for accurate timely diagnosis and early treatment.

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