

A Review of Triple Negative Marker of IHC in Medullary Carcinoma Breast –An Uncommon Subtype with Good Prognosis

Swati Sahay, Aarushi Bansal* and Aditya Singh

Dept of Pathology , SNMC , Bagalkot, Karnataka , India

ABSTRACT

Medullary carcinoma of breast is an uncommon variant of invasive ductal carcinoma, which constitutes nearly 5% of all breast cancers in men and women . These tumours are often associated with favourable prognosis despite showing aggressive behaviour. In this study a patient presented with history of breast lump aged 48 years in left breast since one year .In mammography it was described as BIRADS II and fine needle aspiration cytology showed suspicious for malignancy .Histopathology report showed medullary carcinoma breast lesion .Immunochemistry was also done for ER , PR and Her-2neu and it showed negative for ER ,PR and HER 2 Neu.

Keywords: Medullary Carcinoma Breast , BIRADS II , Triple Negative IHC Markers

Introduction-

There are several frequent histological types of breast carcinomas: ductal carcinoma *in situ*, lobular carcinoma *in situ*, in one hand, and rarely, medullary carcinoma, mucinous carcinoma and tubular carcinoma. Ductal carcinoma *in situ* (DCIS) is a noninvasive neoplasm originating in the duct, which in some cases can become invasive.¹

Medullary carcinomas has both typical (MBC) and atypical (AMBC) and are rare breast tumours that comprise of <5% of invasive breast carcinomas . The diagnosis of medullary carcinoma is usually defined by histologic diagnostic criteria proposed by Ridolfi et al.¹¹ . These histomorphological features which include: syncytial growth pattern (>75%), absence of glandular structures, diffuse lympho-plasmacytic infiltrate, highly pleomorphic and enlarged nucleus and complete histological circumscribed . Atypical MBC has an infiltrative margin, mild to moderate mononuclear infiltration, a low nuclear grade ,and presence of an intra-ductal constituent. ²

Case Report

A 48 year old female presented with a lump on her left side of breast present in medial upper outer quadrant measuring 3x2 cms non- mobile, non- tender, firm in consistency and not fixed to chest wall and skin with no other swelling and no lymph nodes are palpable . No swelling was present in contralateral breast and no lymph palpable nodes were palpable . There was no similar history in her family and she is a known case of hypertension.. Routine investigations was done and biochemistry investigation such as uric

acid , LDH and creatinine was normal . Her Hb1c , postprandial blood sugar and fasting blood sugar was raised . Mammography examination showed an ill-defined homogenous lesion approximately 2cm s in left breast with few macrolobulations suggestive of BIRADS II in her left breast and BIRADS 1 in her right breast . Ultrasound shows well defined hypo echoic lesion measuring 1.3x1x 1.4 cms . Lesion is wider than taller and shows few macro lobulation. Margins are smooth and. No calcification is noted . Fine needle aspiration was done and shows a highly cellular smear and malignant ductal epithelial cells arranged in sheets , singles and in clusters having irregular nuclear membrane and prominent nucleoli. Wide local excision was done. The excised specimen was received in department of pathology in 10% buffered formalin and tissue bits were given from the grey white area along with normal breast tissue and IHC was done with ER PR and HER2 neu antibody (triple negative) with high Ki 67 index

Discussion

Medullary breast carcinoma is a rare breast tumours that account for <5% of invasive carcinoma . The diagnosis of medullary carcinoma is usually defined by histologic diagnostic criteria proposed by Ridolfi et al . These histopathological features includes lymphoplasmacytic infiltration , non- invasive microscopic circumscribed and syncytial growth pattern >75% . and grade 2 or 3 nuclei .²

In a study done by Sunil Jagtap³ in a 49 year old female having single , large well circumscribed mass in right breast since 6 months .Sunil et al ³ have seen tumour cells arranged in syncytial pattern having pleomorphic nucleus

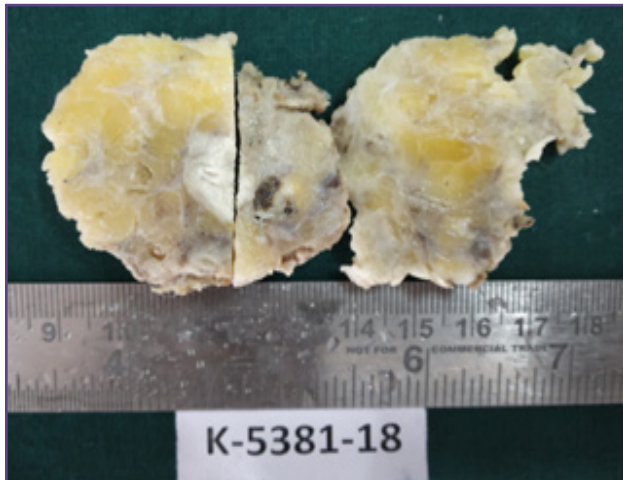


Fig. 1: shows well circumscribed soft grey white to grey yellow areas with cystic degeneration.

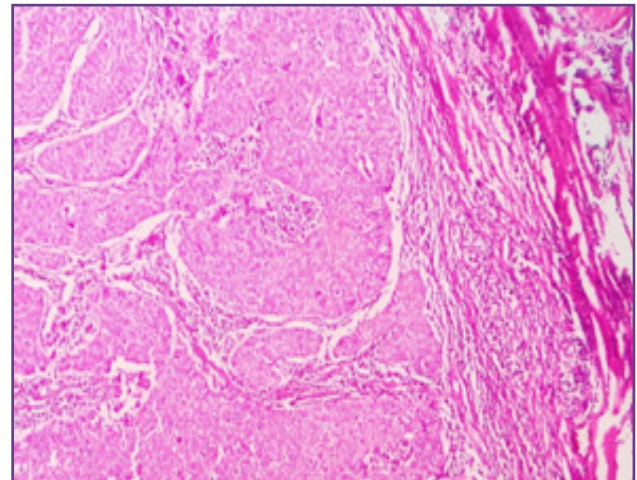


Fig. 2: H & E 10x shows well circumscribed areas of syntitial cells of epithelial cells.

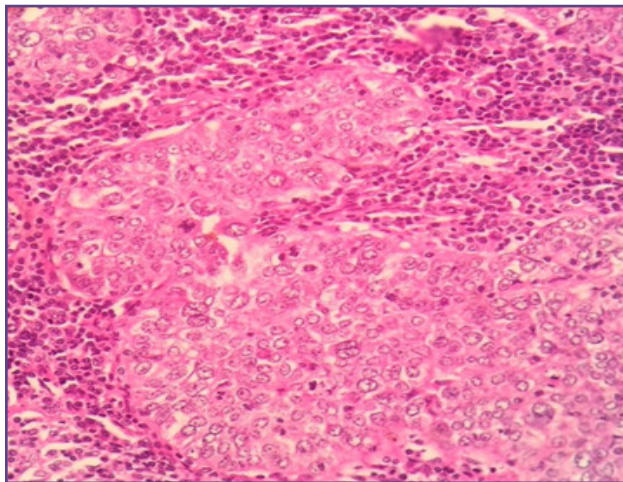


Fig. 3: H& E 40X Showing high grade cytological atypia with nuclear pleomorphism and high grade mitotic activity.

with eosinophilic cytoplasm .It is stated that prominent inflammation comprising of lymphoplasmacytic infiltrate is associated with good prognosis.

Immunohistochemistry showed oestrogen, progesterone and her 2 neu negative .

Another study done by Sajjan et al⁴ on 12 Medullary breast carcinoma and 319 intraductal carcinoma they conducted cytomorphological study of MBC and IDC and compared to each other with the help of chi square test and test ratio . On comparison of various cytological characters such as syntitial growth pattern and lymphoplasmacytic infiltrate , the number of positive category was higher in medullary carcinoma breast that intraductal carcinoma .In contrast parameters like necrosis, three dimensional structure , acinar structure was higher in Intraductal carcinoma breast

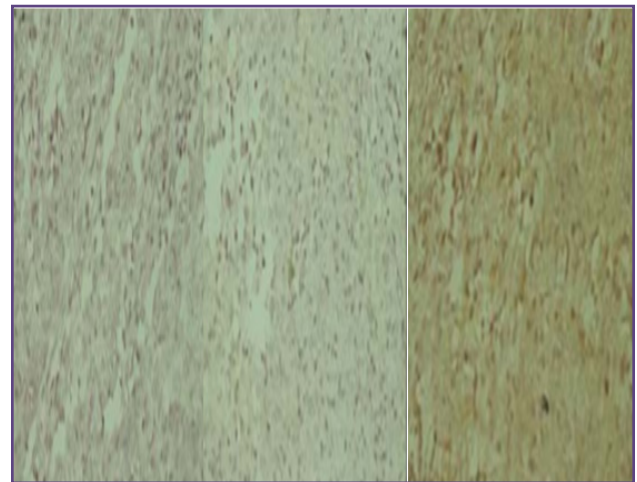


Fig. 4: IHC Triple negative for ER , PR , HER 2 Neu.

with 91% , 67% and 100%.. These values were statistically significant with a p value of < 0.001% .

In the present study we had studied one case in which we had syntitial growth pattern of tumour cells with areas of necrosis and haemorrhage and lymphoplasmacytic infiltrate which is consistent with findings seen by Sajjan et al⁴ and Sunil et al³ although this is one case series study we had seen almost same characteristics features seen by other authors and therefore this is proved that medullary carcinoma a subtype of intraductal carcinoma could have good prognosis based on the assumption of lymphoplasmacytic infiltrate in the medullary carcinoma breast .

From both the studies it is evident that lymphoplasmacytic infiltrate and syntitial growth patterns are significant characteristics features of medullary carcinoma breast

which is also seen in our case . IHC showed triple negative 75% in Medullary carcinoma and 50% with atypical features , whereas it is triple negative in our case .

Conclusion

Differentiating these tumour such as intraductal carcinoma not otherwise specified type from medullary carcinoma breast is necessary as medullary carcinoma breast carries good prognosis when compared to Intraductal carcinoma breast .

Key Message

Constellation of five histological features as described by Ridolfi *et al.* characterizes MBC, one among which is moderate to severe lymphoplasmacytic cellular infiltrate. MBCs on immunohistochemistry (IHC) often displays triple negativity (ER, PR, Her2/neu) with grade 3 Nottingham criteria and exhibits basal phenotype. Though few variants of breast carcinoma contain lymphoplasmacytic infiltrate, the intensity and pattern of distribution of these lymphocytes and plasma cells in relation to tumour cells helps in distinguishing MBC from other breast carcinomas commonly IDC NOS on cytology. Also MBCs have a better prognosis when compared to IDC NOS.

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*Corresponding author:

Dr Aarushi Bansal, Post graduate, Pathology SNMC, Bagalkot, Karnataka, India

Phone: +91 9560305226

Email: 3009aarushi@gmail.com

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