Pure medullary cancer Vs IDC with medullary like features of Breast

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Abstract

Pure medullary cancer of the breast is uncommon subtype of infiltrating duct carcinoma (IDC) comprising 3-5% of all breast neoplasms. Newer and specific nomenclature of medullary carcinoma is basal-like breast carcinoma or associated with genetic BRCA1 mutation.

We discuss a case of 45 year old female with huge lump in her right breast with characteristic features of pure medullary cancer. In this article, we highlight the distinction between the pure that is typical medullary cancer from atypical and IDC with medullary like features.

Keywords: IDC, medullary cancer, MRM, Breast cancer.

Introduction

In view of gross appearance of tumor as encephaloid, soft, fleshy mass with pushing borders and circumscription like part of brain i.e. medulla called as medullary carcinoma.(1) Now a days it has well known gross and microscopic features with molecular expression of HMW-CK and EGFR with germline mutation of BRCA1.(2) Medullary cancer of breast is most common in 4th and 5th decade females.(3) The tumor cells in medullary carcinoma(MC) are high grade in appearance but low grade in behavior i.e. nuclear features are of higher grade with favorable in prognosis.(3)

We report and discuss the biological behavior with nuclear grade, molecular diagnosis as triple negative status with comparison of MC with the subtype of IDC with medullary features.

Case Report

A 45-year-old female presented with huge right breast lump since 8 months. All the relevant past, personal and family history was not contributory. On local examination of right breast, large, nodular, firm mass was noted in both the quadrant measuring 14x10 cms. The mass was not fixed to underlying structures. Routine investigations were not significant. FNAC of right breast was done and showed positive for malignant cells. Right modified radical mastectomy (MRM) was performed with axillary dissection. We received MRM specimen measuring 18x16x9 cms with a skin flap of 12x8 cms (Fig. 1). On c/s- well circumscribed grey white, shiny tumor with pushing borders was noted measuring 10x9 cms with necrosis and hemorrhage (Fig. 2). Multiple sections studied revealed pure medullary cancer of breast. The tumor showed characteristic features on microscopy as capsulation, circumscription, pushing margins with arrangement of tumor cells in syncytial sheets and cords (Fig. 3). Individual tumor cells are with high grade round to oval hyperchromatic nuclei, prominent nucleoli and scant cytoplasm (Fig. 4). Intervening stroma showed prominent and dense diffuse lymphoplasmocytic infiltration (Fig. 5). All the margins and lymph nodes were free from tumor. The tumor was triple negative on IHC and has uneventful post operative period.

Fig. 1: Right MRM specimen with globular, nodular mass in both the quadrant

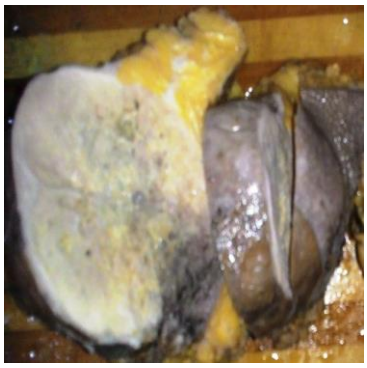

Fig. 2: Cut section showed well circumscribed grey white, shiny tumor with pushing borders and necrosis and hemorrhage

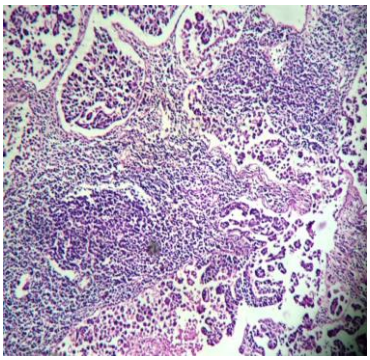

Fig. 3: Photomicrograph showing tumor well circumscription, pushing margins with tumor cells arranged in sheets and cords.(H& E, X100)

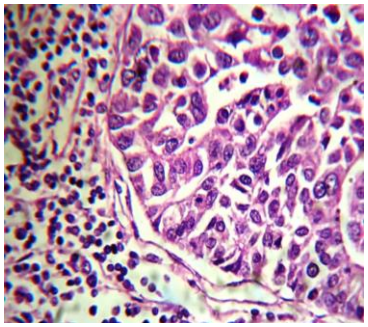

Fig. 4: Tumor cells are with high grade round to oval hyperchromatic nuclei, prominent nucleoli and scant cytoplasm of grade 3 (H& E, X400)

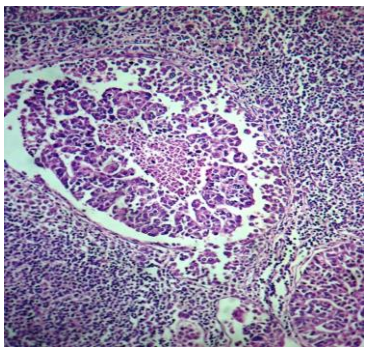

Fig. 5: The intervening stroma showed prominent and dense diffuse lymphoplasmocytic infiltration (H& E, X400)

Discussion

In 2012, World Health Organization (WHO) defines the revised criteria of MC of the breast as well circumscribed soft to firm mass with presence of poorly differentiated cells in sheets with absence of tubule formation.[3,4] Intervening fibrocollagenous stroma is scant with prominent lymphoplasmocytic infiltrate.[4] The characteristic gross features of pure MC is circumscription with pushing borders with shiny, pearly white appearance whereas IDC with medullary features has yellow, gritty appearance with 5th to 6th decade preponderance.[4] High grade of nuclear features with prominent nucleoli, atypical mitosis and necrosis with syncytial arrangement without boundaries with lymphoplasmocytic infiltrate in stroma are the hallmark of diagnosis of MC.[4] Alone core biopsy cannot differentiate pure MC from IDC with medullary features as extensive sampling of the whole tumor is required before final conclusion.[4]

Revised 2012 WHO classification of breast cancers included specific subtypes as-Medullary ca(MC) ICD – O 8510/3, Atypical medullary carcinoma ICD –O 8513/3* and Invasive cancer no specified with medullary features ICD –O 8500/3**.[4]

As per Ridolfi RL et al[4] the basis of differentiation of typical from atypical MC is the presence of intraductular component or microglandular features. Atypical MC has presence of intraductular or microglandular patterns with syncytial growth more than 75% of nuclear grade 3 and scant lymphoplasmocytic infiltrate.[4] Typical MC comprises strict criteria as predominantly syncytial growth pattern more than 75%, completely circumscription on microscopy, nuclear grade of 1/2, no intraductal/ microglandular patterns with marked lymphoplasmocytic infiltrate in the stroma.[4] Our case satisfies all the criteria of typical MC with good and favorable prognosis with triple negative status. IDC with medullary features comprises syncytial growth less than 75% and/presence of 3 or more other atypical features.[4]

Conclusion

We discussed the distinct gross and histomorphology of typical and atypical MC in detail. However in current view of WHO experts it is difficult to apply the strict criteria in view of poor inter observer variability. Hence they recommend that typical MC, atypical MC and IDC with medullary features are grouped together within the category of carcinoma with medullary features.

References

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