



MUCINOUS CARCINOMA IN MALE BREAST – A RARE ENTITY WITH CYTOHISTOLOGICAL CORRELATION

Pathology

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ABSTRACT

INTRODUCTION

Carcinomas arising in the male breast is a rare occurrence, with a known incidence of only 0.6% of all the reported cases of breast carcinomas.

CASE HISTORY

A 36 year old male presented with a hard retro-areolar mass in the left breast since 6 months. FNAC smears were cellular and showed atypical cells lying singly as well as in dyscohesive clusters with abundant mucinous material in the background. Cytological diagnosis of Mucinous Carcinoma of breast was suggested and were confirmed on histopathology.

DISCUSSION

Male breast cancers are rare aggressive lesions reported mainly in the older age groups. It is important to recognize these lesions for focused treatment strategies and an overall improved survival.

CONCLUSION

This case is being presented due to uncommon nature of tumour presenting at an early age. FNAC is a useful tool for diagnosis with high sensitivity but histopathology remains gold standard.

KEYWORDS

Carcinoma, Male Breast, Rare entity

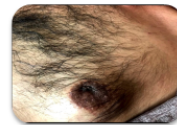
INTRODUCTION

Carcinomas arising in the male breast is a rare occurrence. The existing epidemiological data represents the incidence to be 0.6% of all the breast carcinomas.¹ Among the various histological subtypes infiltrating ductal carcinoma is the most common type of male breast cancer accounting for approximately 90% cases.² Mucinous carcinoma in male breast is an extremely rare entity with incidence varying from 0.5% to 2.38% in different series.^{3,4,5} Mucinous carcinomas are histologically subdivided into two major subtypes: pure and mixed types.⁶ Pure mucinous carcinomas consists of small epithelial islands of solid tumor floating in abundant extracellular mucin which comprises 90% of tumor, while mixed type has both mucinous and conventional invasive carcinoma component.⁶ It has been reported that pure mucinous carcinoma has a more favourable prognosis than mixed type.⁷ It is associated with less chances of nodal involvement and therefore it has been suggested in few studies that axillary node dissection is not necessary.⁸

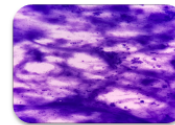
CASE REPORT

A 36 year old male presented to the surgical out patient department with a retro-areolar hard mass measuring 3x3cms in the left breast, fixed to the overlying skin involving nipple areola complex with inverted nipple since 6 months.(figure A) There were no complaints of nipple discharge or any ulceration on overlying skin. Right breast was normal on examination. There was no axillary lymphadenopathy or any organomegaly. Family and past history was non- contributory. A clinical diagnosis of gynaecomastia was given. Ultrasonography breast showed well defined hypoechoic lesion of 2.8x2.3cm with areas of microcalcification and was diagnosed as benign.

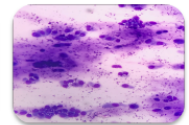
Fine needle aspiration cytology was performed and mucoid sticky material was aspirated. May Grunwald Geimsa and PAP stained smears were moderately cellular and showed abundant mucinous material in the background along with cells lying in dyscohesive clusters, cords as well as scattered singly. The individual cells had moderate cytoplasm, round to oval eccentric nucleus with mild nuclear pleomorphism, regular nuclear membrane and fine chromatin. Chicken wire blood vessels were also seen(figure B,C,D). Diagnosis of mucinous carcinoma breast was rendered and biopsy was advised. The patient underwent PET scan to look for distant metastasis which revealed a hypermetabolic lesion in the left breast tissue extending posteriorly to the chest wall and anteriorly involving the nipple and overlying skin while there was no evidence of distant metastasis.



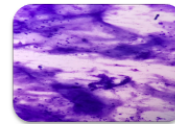
A. patient with retroareolar mass involving the nipple areola complex



B. Abundant mucinous material in background(MGG 100X)

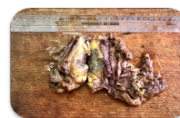


C. Cells in dyscohesive clusters with mild degree of pleomorphism (MGG 400X)

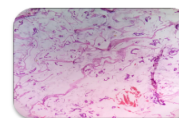


D. Chicken wire blood vessels (mgg 100x)

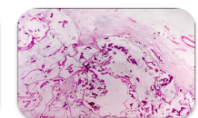
The patient underwent a modified radical mastectomy. On giving serial cuts, gross specimen revealed a circumscribed tumor measuring 8x5x2cm with characteristic bluish glistening appearance and gelatinous soft consistency. Haematoxylin & Eosin stained sections showed groups of tumor cells within pools of extracellular mucin. On histopathology no component of invasive ductal carcinoma or carcinoma in situ was identified on extensive sectioning. Therefore it was pure type of mucinous carcinoma (Figure E,F,G). The lymph nodes were uninvolved. On immunohistochemistry tumor was positive for ER/PR and negative for Her2 neu. Hence diagnosis of pure mucinous carcinoma was confirmed.



E. Gross appearance: Gelatinous cut surface



F. Pools of extracellular mucin(H&E 100X)



G. Groups of tumor cells on mucoid background(H&E 400X)

DISCUSSION

Carcinoma in male breast is much less frequent than female breast (66.7% in females vs 0.4% in males).⁹ Incidence of male breast carcinoma increases with increasing age, mean age being 67 years at diagnosis.¹⁰ On the contrary our patient presented at a much younger age of 36 yrs.

High risk factors which are linked to increased incidence of male

carcinoma are hormonal imbalance, testicular dysgenesis, radiation exposure, chronic liver disease, schistosomiasis and Klinefelter's syndrome. There are varied reports of association with gynecomastia. Men with BRCA-2 gene mutation are genetically predisposed to carcinoma.^{11,12}

Pure mucinous carcinoma overall is a rare entity with lower incidence in female as well as male breast (female breast 2-4% vs male breast 0.5to 2.38%)^{3,4,5}.

This case of mucinous carcinoma was diagnosed preoperatively on FNAC. Few case reports of mucinous carcinoma of male breast diagnosed by FNAC have been documented.³ Main differential diagnosis to be considered on FNAC are infiltrating lobular carcinoma and mucocele like lesions. Bhagat et al reported one case of mucinous carcinoma misinterpreted as lobular carcinoma due to lack of mucoid background, linear arrangement of cells and minimal nuclear pleomorphism.¹³

Histopathologically our case was pure mucinous carcinoma with no nodal involvement. This variety has overall good prognosis with low chances of nodal involvement and distant metastasis. Therefore sentinel lymph node biopsy may help to identify the patient who require axillary node dissection.¹⁴ On immunoprofiling our case was ER/PR positive and Her2 neu was not amplified. As in female counterparts more than 90% of male breast mucinous carcinomas are positive for ER/PR.^{15,16,17} However Muir et al reported higher positivity for ER than females(81% males vs 69% females) without a significant difference in PR positivity(63% vs 56%).¹⁸ This high rate of hormone receptor positivity is similar to positivity in postmenopausal females.¹⁸ Although as seen in female breast carcinomas hormone receptor status is not related to prognosis in males but few studies have shown improved survival in hormone receptor positive patients.

Overall male breast carcinomas have poor prognosis due to smaller volume which increases the chances of infiltration in surrounding structures.¹⁹ Prognosis depends on tumor stage and nodal involvement.¹¹ Thus as the case was detected early on FNAC, so timely management could be initiated. Also on histopathology the tumor was of pure subtype and ER/PR positive implying better response to treatment and overall prognosis

CONCLUSION

Although mucinous carcinoma is a variant with good prognosis, but male breast carcinomas behave in a more aggressive manner. Therefore early diagnosis and timely management are important, for which FNAC can play an important role due to its high sensitivity and specificity. But histopathology remains gold standard. This case is being reported due to uncommon tumor in male breast presenting at an early age.

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