



PURE MUCINOUS CARCINOMA OF MALE BREAST WITH NODAL METASTASIS: A UNUSUAL CASE REPORT

Asish Rath¹., Sourav Panda²., Saurav Banarjee³., Sunil Mahto⁴ and Ravi Hari Phulware^{5*}

¹Department of Laboratory Services, BALCO Medical Centre, Raipur (Ex-JR RIMS, Ranchi),

²Department of Radiology, CMC, Vellore (Ex-JR RIMS, Ranchi),

^{3,4}Department of pathology, RIMS, Ranchi

⁵Department of Pathology, AIIMS, New Delhi (Ex-JR RIMS, Ranchi),

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ABSTRACT

A pure primary mucinous carcinoma of male breast is very rare having incidence of <1% of male breast carcinomas in which axillary nodal metastasis is exceptional. Only few case reports have been described with a mucinous carcinoma in male breast with axillary lymph node metastasis. A pure form of mucinous carcinoma is diagnosed when more than 90% component is mucinous. A 65yr male patient presented with lump in left breast since 1 month. FNAC showed mucinous breast carcinoma with axillary lymph node metastasis. Patient underwent left modified radical mastectomy. Histopathology confirmed pure mucinous carcinoma with axillary lymph node metastasis. Immunohistochemistry showed tumor cells to be positive for ER and PR. Pure mucinous carcinomas are prognostically better than mixed mucinous and invasive carcinomas.

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INTRODUCTION

Male breast cancers constitute less than 1% of all cases of breast cancers. Invasive ductal carcinoma, NOS is the most common histological subtype.¹ Mucinous carcinomas in female breast accounts for 2% of all breast carcinomas.² Mucinous carcinoma in a male breast is very rare.¹

In literature very few cases of mucinous carcinoma in male breast are reported.³ A pure mucinous carcinoma in male breast is extremely unusual account for less than 0.5% of all histologic subtypes.^{4,5} Axillary lymph node metastasis in mucinous carcinoma of breast is even rarer.^{6,7} The association between germline mutations and breast cancer is much less in BRCA1 than in BRCA2 in men.¹

Pure and mixed varieties of mucinous carcinomas are described. Pure mucinous carcinomas have more than 90% mucinous carcinoma component which is again described by the presence of clusters of atypical cells in large pool of extracellular mucin.² We report here a rare case of pure mucinous carcinoma in male breast with nodal metastasis and review its clinic-pathological features.

Case Report

A 65 year male presented with lump in left breast since 1 month. On examination a firm to hard lump of 3cm X 2cm was palpated in outer upper quadrant of left breast. The overlying

skin and chest wall was free. A single axillary lymph node measuring 1 cm X 1cm was palpated on the left side. Fine needle aspiration cytology (FNAC) of breast lump was performed and LG (Leishman-giemsa and Papanicolaou stains) were performed. Smears showed presence of atypical cells in groups and cords having uniform chromatin and one to two prominent nucleoli. Background showed presence of abundant mucin. Few thin walled capillaries with chicken wire appearance were also seen. Aspiration from the lymph node also revealed similar findings.

Ultrasonography showed a hypo echoic lesion with well defined margins. Chest radiograph and routine blood investigations were within normal limit. A modified radical mastectomy was performed. Histopathological features showed nests of cells with low nuclear grade floating in abundant lakes of extracellular mucin. Fibrous septa with capillary blood vessels were noted. Two lymph nodes were positive for metastasis. Immunohistochemistry was performed for ER (estrogen receptor), PR (progesterone receptor) and Her-2 Neu. Tumour cells were positive for ER and PR but were negative for HER-2 Neu. The ki-67 labelling index was low (4-5%) in the highest proliferative area.

DISCUSSION

Male breast cancers account for only 1% of all cancers in males.¹ These present in slightly older age in males compared

*Corresponding author: Ravi Hari Phulware

Department of Pathology, AIIMS, New Delhi (Ex-JR RIMS, Ranchi),

to females.¹ Most common histologic subtype of breast carcinomas in males is invasive ductal carcinoma of no special type. Pure mucinous carcinomas are extremely rare in males.⁴ Cases of mucinous carcinomas with lymph node metastasis have been reported. Which suggest FNA is a useful technique for diagnosing mucinous carcinomas even in cases with lymph node metastasis.^{8,9,10}

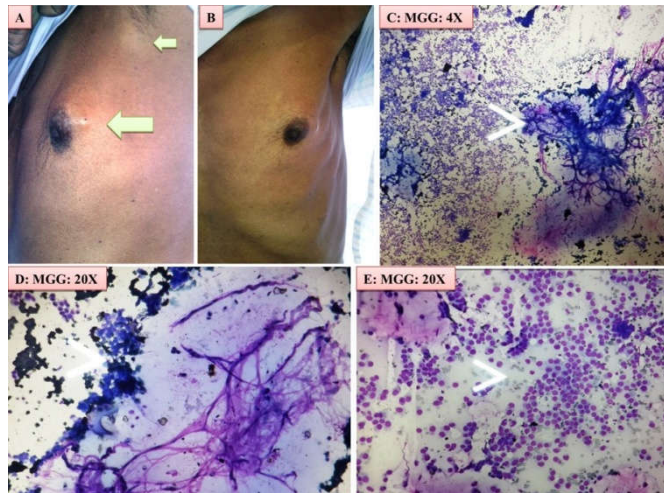


Figure 1

A&B- Image depicting male patient with lump in the left breast along with palpable left axillary lymph node,
 C- Fine needle aspiration on lower magnification shows numerous freely scattered and occasional small cohesive clusters of cells dispersed in a mucinous background with many branching capillary structures,
 D- Shows "Chicken wire" blood vessels with a background of stringy mucin pool,
 E- Higher magnification shows scattered population of single cells with small, uniform, round nuclei, smooth nuclear outline, bland, granular, chromatin with inconspicuous nucleoli.

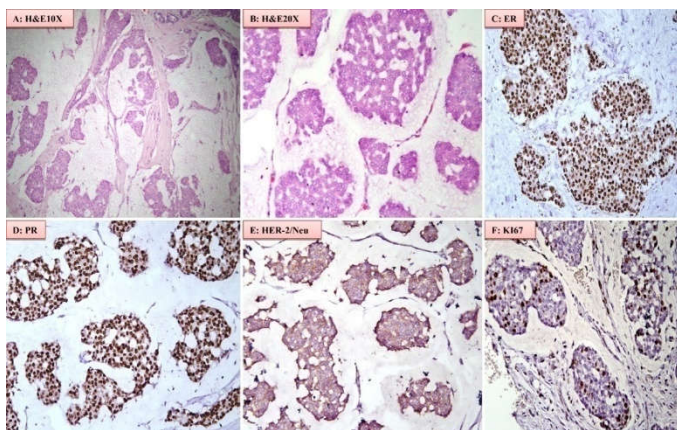


Figure: 2

A- Histopathology showing the tumor consist of small islands or clusters of uniform, round epithelial cells within extensive large lakes of extracellular mucin and these lakes divided by delicate fibrous septae containing capillary blood vessels,
 B- Higher magnification showing uniform population of cells with regular darkly staining nuclei with scant eosinophilic cytoplasm, minimum nuclear pleomorphism and indistinct nucleoli,
 C- The tumor cells are immunopositive for Estrogen receptor (ER) 8/8, D- Progesteron receptor (PR) 8/8,
 E- While the tumor cells are immunonegative for HER-2/Neu,
 F- The Ki-67 labelling index is low (4-5%) in the highest proliferative area.

Histologically pure and mixed forms of mucinous carcinomas are described.² Pure types are diagnosed when more than 90% are mucinous components. Mixed type has both mucinous and conventional invasive carcinoma components.² Our patient had no invasive carcinoma component.

Differential diagnosis of mucinous carcinomas include Infiltrating lobular carcinomas with signet ring differentiation and mucocele like lesions.^{1,11} Lobular carcinomas in males is very rare as no significant lobule formation is there in male breast. Mucocele like lesions have ducts distended with mucin and have adhered myoepithelial cells to strip of cells floating in mucin.¹ Our patients had no histological evidence of presence of myoepithelial cells.

Surgery is the treatment of choice in male breast cancers and so is for mucinous carcinomas. Like other breast cancers the standard treatment option is modified radical mastectomy with axillary lymph node dissection.¹¹ However in mucinous carcinomas the axillary lymph node metastasis and local recurrence are rare. Pure mucinous carcinoma in females is associated with a low incidence of nodal metastasis when compared to mixed types and invasive carcinomas.¹ 10-year overall survival ranges from 80 to 100%.¹ Few researchers have suggested sentinel lymph node biopsy instead of axillary lymph node dissection in view of low incidence of nodal metastasis in mucinous carcinomas.⁷ However, cases of pure mucinous carcinoma with axillary lymph node metastasis in the male breast have also been reported.^{8,9}

Male breast cancers are positive for ER and PR for more than 90% and 80% cases respectively however HER-2 Neu positivity frequency is low. To evaluate for adjuvant hormonal therapy status of ER, PR and HER-2 Neu should be performed in similar manner as in females.^{1,9,12,13} Ki 67 index in mucinous carcinomas are low. High Ki67 index in breast carcinomas is a marker for poor prognosis and early recurrence.^{14,15} Prognosis of male and female cancers are similar when stage matched disease is considered. Approximately 40% male patients die due to causes other than their cancer.¹

CONCLUSION

Pure mucinous carcinoma of male breast is an extremely rare entity. FNAC can help in making an early diagnosis but histopathology is the gold standard to differentiate with close histopathologic mimickers. Lymph node spread is unlikely in a mucinous carcinoma. Immunohistochemistry is useful in establishing adjuvant hormonal therapy. We present this case due the rarity of mucinous carcinoma in male breast and a presence of axillary lymph node metastasis makes it an extremely unusual case.

Conflicts Of Interest- None

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