

Clear cell carcinoma of breast – A case report

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Abstract; clear cell carcinomas of breast is rare entity. We report a case of clear cell carcinoma of breast in a 30 Y old female , which was clinically diagnosed as fibroadenoma of breast. Less than 150 cases have been reported in the world literature so far.

Key words; Fibroadenoma , Clear cell carcinoma of breast. Glycogen rich carcinoma of breast.

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I. Introduction ;

clear cell carcinoma of breast or Glycogen rich clear cell carcinoma(GRCC) of the breast makes up 1.4–3% of all breast malignancies. First case was reported in 1981 by Hull et al. ⁽¹⁾ Less than 150 cases have been reported since its first description, thus, making its prognosis unclear and vary from one literature to another. GRCC of the breast is a rare subtype of breast cancer in which the tumor cells contain abundant glycogen. These tumors in most of the patients usually present either as ductal carcinomas in situ (DCIS) or DCIS with invasive component.

II. Case Report ;

Gross – globular mass covered with fat measuring 7x6x5 cms. On c/s showed a non capsulated , homogeneous grey white tumor infiltrating into fat . there is no evidence of necrosis or hemorrhage.(fig 1).

Microscopy : Sections studied from the tumor shows pleomorphic cells arranged in ducts,tubules and clusters. More than 90% of the cells show clear cytoplasm. Tumor is infiltrating into fat and one resected margin is infiltrated by tumor.(fig2) We graded the tumor according to Nottingham modification of Bloom Richardson score; tubule formation –score3, nuclear pleomorphism–score1, mitotic count–score1, Total score 5, grade 1 tumor cells showed intense positivity with PAS which is diastase sensitive.

III. Discussion ;

Clear cell carcinoma of the breast is a subtype of invasive duct cell carcinoma of breast.

Diagnostic Criteria are

- **At least 90% of the neoplastic cells have abundant clear cytoplasm due to glycogen**
- PAS positive, diastase sensitive in most cases
- Processing may remove glycogen
- Minor component of eosinophilic granular cytoplasm may be present
- May suggest apocrine differentiation
- Scant amounts of intracellular mucin may be seen in some cases
- Growth pattern is usually that of usual infiltrating ductal carcinoma
- Other patterns reported include lobular, tubular and medullary
- Intraductal clear cell component may be present

Clinical presentation is similar to ductal not otherwise specified (NOS) carcinoma, mostly discovered as a breast lump ranging from 1 to 10 cm in size. Grossly, GRCCC has either circumscribed or irregular borders, associated with Papillary intraductal / intracystic features .⁽²⁾

The differential diagnosis of GRCCC of the breast includes primary benign tumors (adenomyoepithelioma and clear cell hidradenoma), as well as primary malignant tumors (signet-ring cell carcinoma, histiocytoid lobular carcinoma, lipid-rich carcinoma, secretory carcinoma apocrine carcinoma) and metastatic tumors with clear cell features (clear cell carcinoma of the kidney, adrenal gland, lung, and other organs).Cytochemistry and immunohistochemistry are useful in differentiation of this neoplasms. ER,PR, HER2 expression is variable.

Clear cell breast carcinoma can be easily missed or misdiagnosed in a breast core biopsy specimen because it tends to show a papillary pattern with clear cell and pseudolactating changes, especially in young

female patients. Normal breast tissue may include clear cells as a consequence of physiological changes during pregnancy, and a clear cytoplasm may be found in myoepithelial cells and/or apocrine metaplasia.⁽³⁾

The prognosis of glycogen-rich clear cell carcinoma of the breast is reported to be not particularly favourable and may be similar to or worse than that of ordinary invasive ductal carcinoma, when compared on a stage-matched basis.⁽⁴⁾

The expression of CK7, CK8/18, CK18, and CK19 can be detected in both breast carcinoma and RCC. HMWCK 34 β 12E is a panepithelial CK including CK1, CK5, CK10, and CK14, which is expressed by all epithelial layers of the mammary ducts. In addition, HMWCK 34 β 12E expression has been reported in invasive breast carcinomas. In RCC, HMWCK 34 β 12E immunoreactivity has been reported to be negative or rarely positive.⁽⁵⁾

IV. Conclusion :

In the present case , no other primary is detected and the cells showed intense positivity for PAS, hence it is diagnosed as clear cell carcinoma of breast.

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Fig1: Gross photo showing a grey white tumor infiltrating in to adjacent fat.

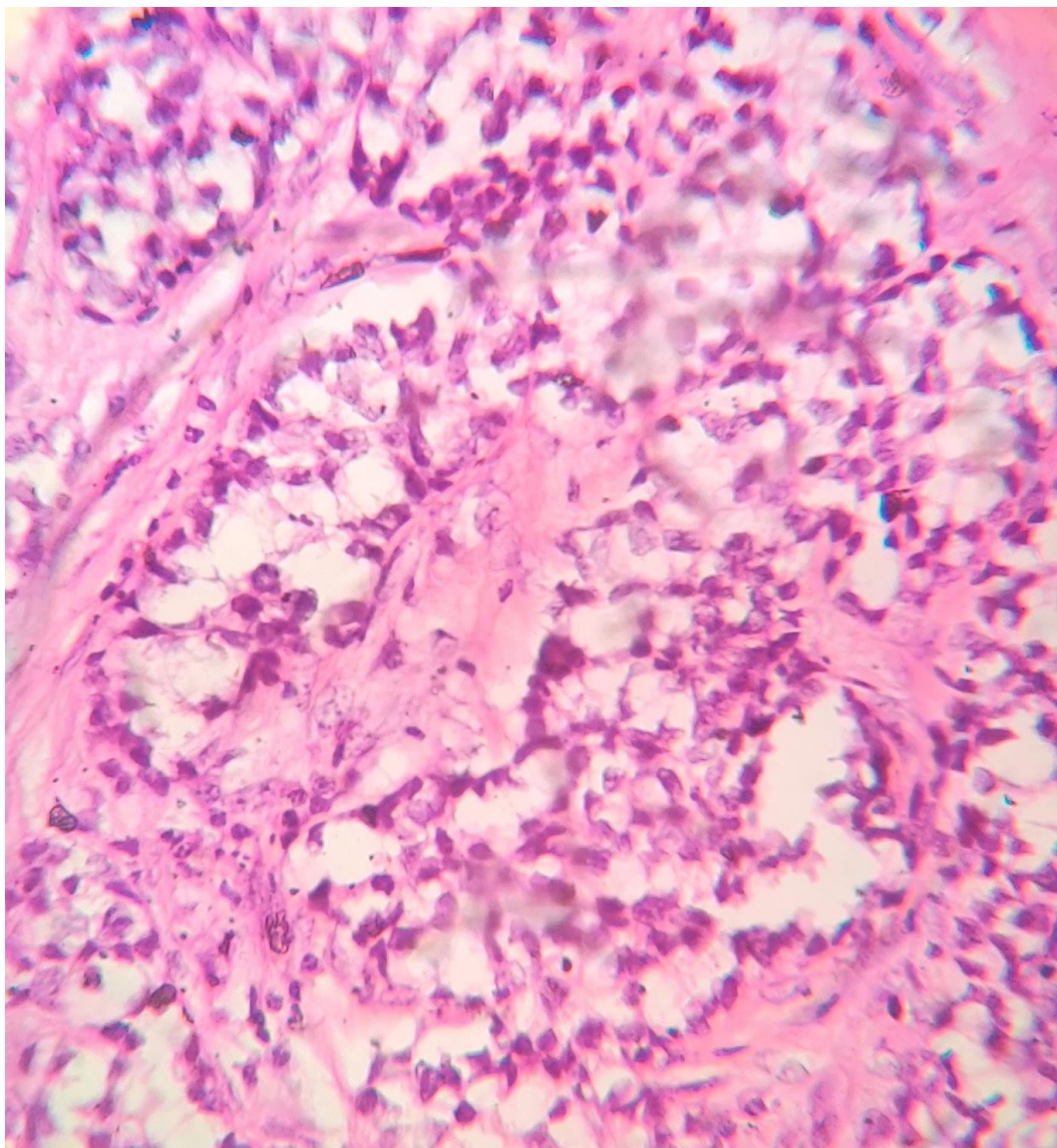


Fig2: H&E, 10x40 showing ducts lined by clear cells.

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