



LOW GRADE ADENOSQUAMOUS CARCINOMA OF BREAST- CASE REPORT

Histopathology

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ABSTRACT

Low grade adenosquamous breast carcinoma (LGASBC) is rare variant of metaplastic breast cancer (MBC) with both-glandular as well as squamous differentiation. Histo-pathological characteristics (HPC) are overlapping with other benign lesions (like syringomatous adenoma) and other variants of MBC that pose a diagnostic challenge. Most forms of MBC have poor prognosis except low grade adenosquamous breast carcinoma (LGABC) which has favourable prognosis. We report one case of LGABC in a 85 years old elderly female who presented with suspicious malignant mass in the right breast. On histopathology and immunohistochemistry, a favoured diagnosis of LGABC was given. LGABC needs excision of the lesion but has good prognosis.

KEYWORDS

Low grade adenosquamous breast carcinoma (LGABC), Adenosquamous breast carcinoma (ASBC), metaplastic breast cancer (MBC), immunohistochemistry (IHC), Histo-pathological examination (HPE), Histopathological characteristics (HPC)

INTRODUCTION

Adenosquamous breast carcinoma (ASBC) is a rare and unique form of invasive mammary carcinoma that occurs in less than 0.2% of all cases of breast cancer [10]. To date there are only 155 cases reported in literature including small case series and case reports[15]. Unlike the aggressive tumour behaviour and poor clinical outcomes seen in other forms of metaplastic mammary carcinomas, LGAC tends to run an indolent course with a low potential to metastasize and has a favourable overall prognosis[16].

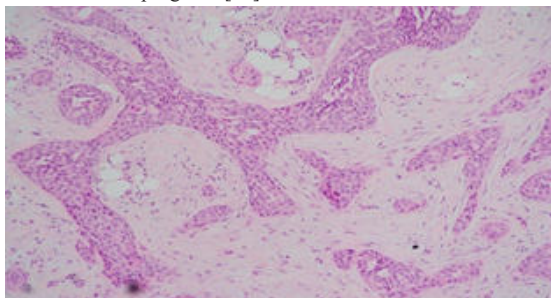


Figure 1: H and E ; Jagged nests of malignant squamoid cells amidst desmoplastic stroma IHC:

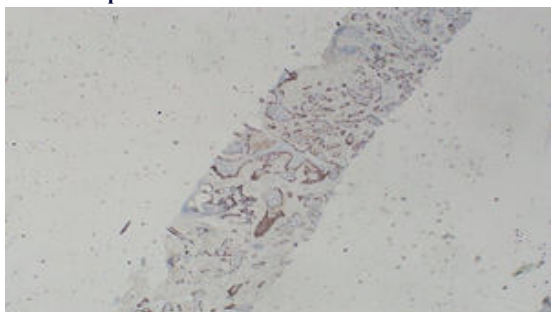


Figure 2: p63 IHC; There is peripheral staining for p63 and the squamoid looking cells in the nests too express p63

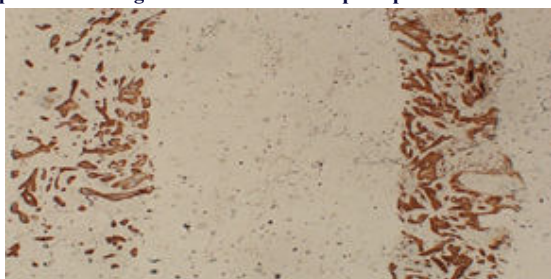


Figure 3:CK5-6 IHC; Lesional cells express CK5-6

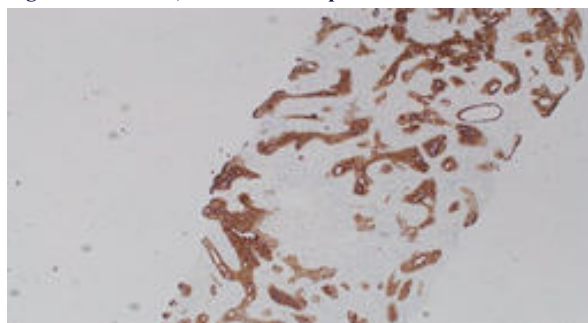


Figure 4: CK7 IHC; Lesional cells express Ck7

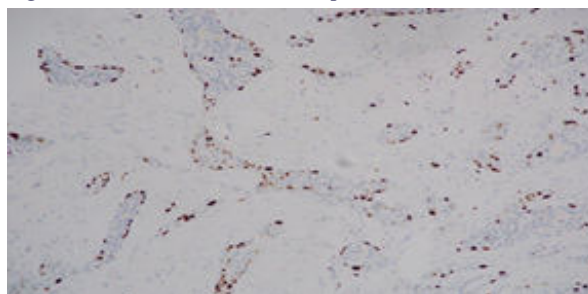


Figure 5: Ki67 IHC; Ki67 proliferation index is low

CASE PRESENTATION:

Clinical history - 85 year old female presented with lump in right breast. Standard breast imaging including bilateral mammograms revealed that the patient had spiculated large mass in right breast located at 1 o'clock, 2cm from nipple. A core biopsy was performed and specimen sent to us.

HPE and IHC work up

Three yellow tan cores ranging from 10 to 17mm in size were received and all processed for HPE. Multiple levels with standard Hematoxylin and Eosin stained sections were examined initially. This showed infiltrative jagged nests of cells with squamoid appearance[Figure 1]. These nests invaded the adipose tissue and were surrounded by desmoplastic stroma. An immunohistochemical panel comprising of ER, PR, Her 2, Ki67, SMM, CK7, CK20, CK 5-6, GATA3 and CK20 was performed. On IHC, the lesional cells showed peripheral staining for p63 [Figure 2] and absent staining for SMM. They revealed strong staining for CK7 and CK5/6 [Figure 3 & 4]. Focal weak staining for GATA3. There was no staining for CK20. The cells were triple negative(ER, PR, Her 2- negative). Ki67 proliferation index was low approximately 5-10% [Figure 5]. Following HPE and IHC, a

diagnosis of 'Low grade adenosquamous carcinoma' was offered. Subsequently, patient underwent wide local excision and has remained disease-free during the follow-up period so far.

DISCUSSION:

The earliest example of a breast tumor with adenosquamous features was reported in 1912 by Konjenty. It was only in 1987, when Rosen and Ernsberger consolidated and described 11 such cases, that the term 'ASBC' was established and entrenched [11]. World Health Organization (WHO) breast cancer classification (2019), ASBC was characterized as a variant of metaplastic mammary carcinoma, and other subtypes of metaplastic breast cancer were fibromatosis-like metaplastic carcinoma, squamous cell carcinoma, spindle cell carcinoma, metaplastic breast cancer with mesenchymal differentiation [6]. Under normal conditions, squamous carcinoma (SCC) of the breast must be considered in the differential diagnosis as many reports have included tumors with varying proportions of squamous carcinoma and adenocarcinoma, very few are completely pure without other kind of glandular cell differentiation [10]. Microscopically, LGASC is characterized by the following features [11,12,13,18]: a) Infiltrative small, round, oval, or compressed glands, or solid cords/nests, often with comma shapes, arranged in a haphazard pattern; b) The well-formed glands or solid nests have variable squamous differentiation; c) The glands or nests are typically surrounded by abundant stroma with bland spindle cells, varying from loose and mildly edematous to dense, eosinophilic and fibrous; d) Low-grade cytologic features with no or rare mitotic activity in both the epithelial and stromal components; e) Lymphocytic aggregates may be present at the periphery. The neoplastic glands tend to infiltrate in between and around normal breast tissue at the periphery. However, any sarcomatous spindle cell or heterologous component in a metaplastic carcinoma excludes the diagnosis of LGASC by definition. The absence of expression of hormone receptors coupled with variable expression of myoepithelial markers and cytokeratin in the lesional glands is considered a typical immunophenotype for LGASC [7,8,17].

Most studies of ASBC of the breast had been small series or single case reports because of its rarity [8]. Therefore, clinicopathological features and outcomes of this entity remained unclear. HPC and IHC clinch the diagnosis. LGAC breast tumors were triple negative tumours [1,2,4,8,18]. The p63 gene product which is expressed in squamous epithelial cells as well as in basal cells of breast ducts has been reported to be 86.7% sensitive and 99.4% specific for the squamous component of metaplastic carcinomas [12].

There are no particular distinguishing features of LGAC on imaging with most appearing as spiculated densities on mammography or irregular hypoechoic masses on ultrasonography [1,3,8,9,14]

CONCLUSION:

LGAC is a rare and distinct form of MBC. Diagnosis on imaging, fine needle aspiration [8] and even core needle biopsy can be difficult to achieve unless high index of suspicion is kept in mind about LGASC. These tumours are many a times incidental findings on histological examination of excisional biopsy or mastectomy specimens.

There have been reports of association of LGABC with sclerosing lesions and inflammatory cells and it is possible that LGABC may elicit an inflammatory lymphoid reaction. LGABC have an overall favourable prognosis and the risk of nodal or distant metastasis is remote and very low. They are however locally aggressive and wide excision with gross margins of at least 1 cm is advised.

Summary

Purpose of reporting this rare case

LGABC is rare variant of MBC. Unlike most other variants of MBC, LGABC has a good prognosis. Thus, this needs to be suspected accurately by surgical pathologists if clinical presentation, imaging features, HPC and immunohistochemistry (IHC) are effectively correlated.

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