Adenosquamous Variant of Metaplastic Carcinoma of Breast: A case report

Metaplastic carcinoma of breast refers to a heterogeneous group of neoplasms characterized by an intimate admixture of adenocarcinoma with a dominant area of spindle cell, squamous cell and/or mesenchymal differentiation. They constitute the rarest histological variant of invasive ductal carcinoma. Adenosquamous carcinoma of the breast is rare tumors included in the last edition of WHO classification of breast cancers, as a subtype of metaplastic carcinoma. It constitutes 0.3% of all breast cancers. Here, we report a case of an adenosquamous variant of metaplastic carcinoma of the breast in a 61 years old female who presented with a lump in the right breast. The present case highlights that although metaplastic carcinoma of the breast is rare, we should be aware of this possibility and include it in the differential diagnosis whenever appropriate.

Metaplastic carcinoma refers to a heterogeneous group of neoplasm characterized by an intimate admixture of adenocarcinoma with dominant areas of spindle, squamous and/or mesenchymal differentiation, accounting for less than 1% of all invasive carcinomas.

Adenosquamous carcinoma of the breast is a rare tumor included in WHO classification of breast cancer, as a subtype of metaplastic carcinoma, constituting 0.3% of all breast carcinomas. 2, 3 Adenosquamous carcinomas are characterized by areas of well-developed tubule/gland formation intimately admixed with widely dispersed solid nests of squamous differentiation4.

Adenosquamous carcinoma is divided into low grade and high grade. Low-grade adenosquamous carcinoma has less nuclear anaplasia, do not metastasize and have an overall good prognosis3. In contrast, high grade adenosquamous are quite aggressive and show lymph node metastasis at the time of diagnosis.

A 61 years old female, presented with a lump in the right breast for 8 months. Physical examination revealed a lump which was hard, measured 6x5 cm with nipple retraction and palpable ipsilateral axillary lymph nodes. The contralateral breast and axillary nodes were normal.

Sonomammography revealed an ill-defined lesion in the upper right quadrant with axillary lymphadenopathy (figure 1). Trucut biopsy confirmed the diagnosis of invasive ductal carcinoma NOS following which she underwent modified radical mastectomy and the specimen was sent

for histopathological examination.

On gross examination, radical mastectomy specimen measured 15x13x4 cm. Cut surface revealed a pearly white lesion in upper outer quadrant (figure2). Microscopic examination showed foci of the architecturally confluent glandular formation with an adjacent desmoplastic stroma (figure 3). Also seen were tumor composed of nests, jagged islands of mild to moderately pleomorphic cells with a squamoid appearance (figure 4). There were foci of keratin pearl formation with a few dyskeratotic cells. Ductal carcinoma in situ with solid and cribriform growth pattern was also seen. The diagnosis of adenosquamous carcinoma was given.

The immunohistochemical staining showed triple negative for ER, PR, and Her2 neu expression and showed strong positive for cytokeratin.

Adenosquamous breast carcinoma was first described by Rosen in 1987 and later in a follow-up study by Van Hoeven in1993. 5 Adenosquamous carcinoma presents as a palpable mass and has been found in women whose age ranges from 31 to 87 years.

Adenosquamous carcinoma is difficult to diagnose from other benign and invasive tumors on noninvasive investigations. On imaging, only the benign nature of the lesion is observed. These tumors do not exhibit much cytological atypia, despite the infiltrative nature of these tumors, so making it difficult to diagnose on cytology.

On trucut biopsy, the infiltrative nature of the tumor cannot be observed. So, diagnosis is usually made histologically on excision biopsy specimen6. At gross examination, adenosquamous carcinoma tends to display a stellate or infiltrative configuration, with poorly defined borders. Microscopically, the carcinomatous component is characterized by small glandular structures, with rounded rather than angulated contours, and solid cords of epithelial cells, which may contain squamous cells, squamous pearls or squamous nests formation. The invasive neoplastic component typically shows long, slender, extensions at the periphery and infiltrate in between the normal breast structures, features which have been associated with inadequate local excision and high incidence of recurrence.

Adenosquamous carcinoma is consistently negative for ER, PR Her2-neu expression hence may be a useful diagnostic tool. Myoepithelial and cytokeratin stains are positive, but the extent of staining is highly variable. SMA, p63, calponin and CD10 show variable degree of positivity.

The study conducted by Khatib et al., who reviewed one case of low-grade adenosquamous carcinoma of the breast, showed triple negative for ER, PR, Her2 neu expression. SMA and calponin were positive and highlighted the myoepithelial cells, but p63 showed focal positivity. 8 Similarly, our case showed triple negative for ER, PR, Her2 neu expression but showed strong

positivity for cytokeratin expression.

The study conducted by Geyer et al., who observed five cases of adenosquamous carcinoma of the breast, all of them belonged to 54 to 76 years of age. 2 Similarly, our case was 61 years old.

The overall prognosis of adenosquamous carcinoma is good but it has a tendency to locally recur depending on the adequacy of local excision. So, complete local excision or mastectomy is usually recommended. Adenosquamous carcinoma should always be differentiated from tubular carcinoma, infiltrating syringomatous adenoma of the nipple and adenomyoepithelioma.

Adenosquamous carcinoma is a rare entity, has a risk of local recurrence after incomplete excision and has low metastatic potential. In conclusion, adenosquamous carcinoma should always be kept in the differential diagnosis whenever appropriate.