Primary Mucinous Eccrine Carcinoma of Axillary Skin: Report of a Rare Case

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Abstract

Primary mucinous eccrine carcinoma is a rare low-grade malignancy of sweat gland. Axilla is an uncommon site of this tumor. Primary mucinous carcinoma mimics metastatic mucinous carcinoma from breast, gastrointestinal tract, lung, and ovary. Histopathology with immunohistochemistry and other ancillary investigations are necessary to confirm the diagnosis and to exclude metastatic mucinous carcinoma. We present a rare case of primary mucinous carcinoma of axillary skin in an elderly male patient, diagnosed by histopathology and immunohistochemistry.

Keywords: Axilla, histology, immunohistochemistry, primary mucinous carcinoma

INTRODUCTION

Primary mucinous eccrine carcinoma is a rare neoplasm of sweat gland origin. This low-grade malignant adnexal tumor was first described by Mendoza et al. as mucinous carcinoma of skin. It mostly affects elderly patients with a male preponderance. The tumor arises at head and neck region, eyelids, scalp, axilla, and trunk. Histology of primary mucinous eccrine carcinoma often mimics metastatic carcinoma of breast or gastrointestinal tract origin. It creates diagnostic confusion, especially when located at axillary area. Here, we report a rare case of primary mucinous eccrine carcinoma of axilla in a 65-year-old male.

CASE REPORT

A 65-year-old male visited surgery department with a painless swelling at the right axilla for the past 4 months. He was a controlled diabetic and hypertensive. He had no history of anorexia and weight loss. Examination revealed a large irregular lobulated mass at the right axilla measuring 10 cm × 9 cm × 8 cm with shiny and glistened smooth appearance of the skin [Figure 1]. The mass was fixed with the overlying skin but was free from the underlying neurovascular bundles. Examination of both breasts and other systems did not reveal any lump. Ultrasound showed a solid hypoechoic irregular mass with some enlarged axillary lymph nodes. Magnetic resonance imaging revealed a lobulated soft tissue mass (10 cm × 9 cm × 8 cm) separated from neuro-vascular bundles and showed peripheral enhancement in contrast administration. Routine hematological and biochemical tests were within normal limit. Chest X-ray did not show any suspicious neoplastic lesion at lung and pleura. Fine-needle aspiration cytology showed hypercellular smears comprising dispersed polygonal and plasmacytoid neoplastic cells and abundant pink mucinous material in the background. Some tubule and cord formation by neoplastic cells were also present. The cells were monomorphic and had moderate amount of pale cytoplasm. The nuclei showed mild nuclear pleomorphism, fine chromatin, and conspicuous nucleoli. Mitotic figures were scanty in the smears. Cytology was diagnosed as mucinous carcinoma, and possibilities of primary mucinous eccrine carcinoma or metastatic mucinous adenocarcinoma were suggested. Further investigations such as ultrasound of abdomen and computed tomography scan of thorax were done, but no evidence of other primary tumor was found.

Wide local excision with axillary lymph node clearance was done. On gross examination, it was a partially skin covered solid irregular mass measuring 10 cm × 9 cm × 6 cm.

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Cut section showed a well-circumscribed tumor mass of 8 cm × 6 cm just beneath the skin. Ten lymph nodes were separated from the specimen. Histopathology showed a tumor mass involving the deep dermis and was composed of polygonal cells in nests, lobules, islands, and cribriform pattern separated by a large pool of mucin [Figure 2]. The neoplastic cells had eosinophilic cytoplasm, round nuclei with mild pleomorphism, and conspicuous nucleoli. The tumor had no necrosis, lymphovascular and perineural invasion. Mitotic figures were scanty, and no atypical mitosis was found. All the surgical margins were free of tumor involvement. None of the lymph nodes were involved by the tumor cells. Immunohistochemically, the tumor tissue showed strong and diffuse positivity for estrogen receptor (ER), progesterone receptor (PR), and cytokeratin 7 (CK-7) [Figure 3] but negative for CK-20 and P63. Final histopathological diagnosis was mucinous eccrine carcinoma of axillary skin. He was further treated with high-dose radiotherapy (radical) with 3.5 Gy for four weeks. At 6 months of follow-up, he is still free from tumor recurrence or metastasis.

Discussion

Primary cutaneous mucinous carcinoma is a rare sweat gland neoplasm of low malignant potential. The first case was described by Mendoza et al. in 1971. Most of the cases involve eyelids (41%), scalp (17%) face (14%), and trunk. Axilla is relatively an uncommon site of this neoplasm. The tumor occurs at elderly age (average age: 62 years) with a male preponderance. Clinical presentation of primary mucinous carcinoma is a slow growing, painless solitary mass. Sometimes, the surface may show superficial ulceration/crusting. In the present case, it was a slow growing lobulated mass at the right axilla. On histopathology, primary mucinous carcinoma is a multilobular mass where the tumor nodules are separated by fibrous septa. Microscopically, it is composed of polygonal cells in clusters and a large pool of extracellular mucin. The cells are arranged in tubular, cribriform, micropapillary, and solid pattern. The cells show moderate cytoplasm, monomorphic nuclei, and conspicuous nucleoli. The tumor cells exhibit mild pleomorphism and very low mitotic activity. The mucin material is sialomucin of epithelial origin. Characteristic histomorphology in light microscopy mimics metastatic mucinous adenocarcinoma of gastrointestinal tract, breast, or lung origin and primary mucinous carcinoma of axillary tail of breast. Metastatic mucinous carcinomas to axillary lymph nodes are more common than primary mucinous eccrine carcinoma at axillary region. Correct diagnosis needs other ancillary investigations to rule out the metastatic mucinous carcinoma. On immunohistochemistry, primary mucinous carcinoma is positive for CK-5, 7, 14, 17, epithelial membrane antigen, carcinoembryonic antigen, ER, and PR but negative for P63, CDX2, and CK20. In the cases of metastatic mucinous carcinoma of breast, the tumor cells may express ER and PR but negative for P63. Metastatic mucinous carcinoma of gastrointestinal tract expresses CK20 and CDX 2, which helps to differentiate from primary cutaneous mucinous carcinoma.
Primary mucinous eccrine carcinoma is a slow growing low-grade malignancy with a risk of local recurrence in 30%–40% of cases. Distant metastasis is very rare and found only in 3% of the cases. Wide local excision and follow-up is the treatment of choice for this malignancy. Primary cutaneous mucinous carcinoma is chemo- and radio-resistant. Prognosis is very good in comparison to secondary mucinous carcinomas. Follow-up of the patients at a regular interval is necessary to detect any recurrence or metastasis.

**Conclusion**

We need to focus on the rarity and uncommon location of this malignant adnexal tumor which is also a mimic of metastatic mucinous carcinoma.

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**Conflicts of interest**

There are no conflicts of interest.

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