



## Primary Mucinous Carcinoma of the Skin: Report of a Rare Case and Review of the Literature

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### Authors' contributions

*This work was carried out in collaboration between all authors. Author MM involved in reporting pathology and also involved with the revision of article. Author SAS involved with the patient during admission and wrote the first draft of the manuscript. Author MBZ involved with the patient during admission and read through the manuscript and made corrections. Author MBY involved with the writing and revision of the article. Author HM involved with the revision of article and made language corrections. All authors read and approved the final manuscript.*

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Case Study

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### ABSTRACT

Primary mucinous carcinoma (PMC) of the skin is a rare neoplasm derived from the sweat glands. It usually occurs in the head and neck region, in which the eyelids are the most common sites of involvement. Herein, we report a primary mucinous carcinoma of the skin in a 66-year-old female. Mass excisional biopsy confirmed "mucinous carcinoma" of the skin as the diagnosis. A full oncological screening excluded the presence of primary mucinous carcinoma elsewhere and any

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metastatic spread. The final diagnosis was "primary cutaneous mucinous carcinoma". The patient underwent radiation therapy after surgery. This case emphasizes the importance of considering this tumor in scalp lesions and highlights the pathology of this tumor.

*Keywords: Mucinous carcinoma; skin; occipital; case report.*

## 1. INTRODUCTION

Primary mucinous carcinoma (PMC) of the skin is an uncommon neoplasm with sweat gland differentiation [1]. Although distant metastases may occur in rare cases; nonetheless, it has a high recurrence rate and occasional regional lymph node metastasis [2]. Mucinous carcinoma can occur in visceral sites (regardless of the skin) and may metastasize to the skin. Thus, excluding the possibility of a cutaneous metastasis of mucinous carcinoma, it is very important before diagnosing a PMC [1]. Herein, we report a rare case of PMC of the skin in a 66-year-old female who was admitted to the hospital with a swelling in the region of her occipital region.

## 2. CASE REPORT

A 66-year-old female noticed a swelling on the skin of her occipital region during last 3 years. The swelling was gradually increasing in size without any irritation, pruritus, secretion or pain. On examination, a raised, freely mobile, firm cream colored skin of approximately 3.0x1.5x1.5 cm in size was present on the scalp. She had headache for about 20 years which has been worse recently. Excisional biopsy was done while the specimen was sent to pathology laboratory for histopathological examination. Microscopic examination revealed cutaneous infiltration by mucinous carcinoma as well as cribriform pattern in cutaneous mucinous carcinoma (Fig. 1).

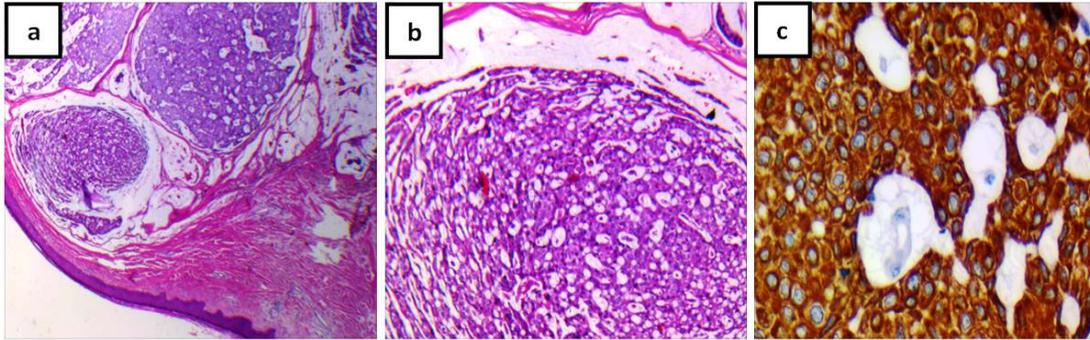
A full oncological screening including colonoscopy, ultrasonographic examination of the abdomen, computerized tomography (CT) scans of the chest, abdomen, and pelvis excluded the presence of primary mucinous carcinoma elsewhere and any metastatic spread. Thus, the lesion was reported to be PMC of the skin (primary cutaneous mucinous carcinoma of the skin). Immunohistochemistry analysis is summarized in Table 1. After 2 months, we cleared the margin of tumor and performed biopsy again which was normal on histopathological examination. The patient received adjuvant radiation therapy for the lesion in the scalp.

**Table 1. Immunohistochemistry analysis of specimen**

Marker	Status
PR	Negative
ER	Negative
CK20	Negative
CK7	Positive

## 3. DISCUSSION

Primary mucinous carcinoma (PMC) of the skin which is a rare neoplasm, was first described by Lennox et al in 1952 [3]. Recently, literature described roughly 200 cases of PMC of the skin. During the period 1978 to 2003, the mean annual age standardized incidence of skin PMC was 0.07 per million person-years [4]. Generally, men are affected slightly more than women. It usually affects 50 to 70 year-old people [5]. The large majorities of PMCs occur on the face, particularly on the eyelids and scalp. In rare cases, mucinous carcinoma may originate from the skin while in fact, the majority of examples in the skin are metastatic to it [6]. The breast, salivary glands, gastrointestinal tract, nose, paranasal sinuses, lacrimal glands, bronchi, renal pelvis, and ovary are common sites of origin of mucinous carcinomas [6]. Our case was a primary cutaneous mucinous carcinoma since CT scan of the neck, salivary glands, paranasal sinus, abdomen, thorax, and a PET scan of the whole body indicated no significant abnormalities. Differentiating primary mucinous carcinoma from metastatic tumors can be difficult. The absence of expression of CK20 by immunohistochemical staining may omit the diagnosis of metastatic colorectal mucinous carcinoma [7]. In this report, CK20 was absent while CK7 was positive (Fig. 1). Cases of PMCs have been found to be progesterone receptor (PR), estrogen receptor (ER), and GCDFFP-15 positive. Qureshi et al suggested that finding an in-situ component of a tumor that stains for myoepithelial cells (positive stains for p63 and CK5/6 among others) can help to omit metastatic mucinous breast carcinoma [8]. In many breast cancers, ER-PR is positive, while it was negative in our case. Carcinomas comprising at least 60% mucus are referred to as mucinous. Scientists



**Fig. 1. (a) Cutaneous infiltration by mucinous carcinoma. (x2.5); (b) Cribriform pattern in cutaneous mucinous carcinoma. (x10); (c) Immunohistochemistry staining for CK7 in cutaneous mucinous carcinoma (x40)**

think that the mucus presence allows cancer cells to spread faster. Consequently, mucinous carcinoma is considered more aggressive than regular carcinoma and is also harder to successfully treat [5,9,10].

Differential diagnoses of primary mucinous carcinoma of the skin include epidermoid cyst, neuroma, cutaneous epithelial cysts, sebaceous cyst, lipoma, sebaceous carcinoma, cystic basal cell carcinoma, squamous cell carcinoma, melanoma, Kaposi's sarcoma, and adenoid cystic carcinoma [4].

We presented this rare report of a primary tumor which was growing very slowly without metastasis (it was primary). Radiation was recommended to the patient. In general, for management of these tumors, other treatments, such as radiation and chemotherapy are not employed. Therefore, to evaluate the local tumor recurrence or development of regional lymphadenopathy, the patients should be counseled about the importance of frequent follow-up [11].

#### 4. CONCLUSION

Primary mucinous carcinoma arising from the skin is rare and usually follows an indolent course. We reported a rare occurrence of a mucinous carcinoma of the scalp. This case report emphasizes the importance of considering this tumor in occipital lesions and highlights the pathology of this tumor. Histopathological examination and immunohistochemistry analysis help in diagnosis.

#### CONSENT

It is not applicable.

#### ETHICAL APPROVAL

It is not applicable.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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