Eccrine cell tumor with natural evolution

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Abstract

Eccrine cell carcinoma constitutes a group of rare skin malignancies which are slow-growing but highly invasive. A case of multiple skin lesions with multifocal involvement, concluding with the histopathological documentation of this condition, is presented. **(Acta Med Colomb 2019; 44. DOI: https://doi.org/ 10.36104/amc.2019.1203).**

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Introduction

Eccrine cell carcinomas are a group of rare, potentially destructive skin malignancies, belonging to the group of sweat gland tumors (1). They are, in particular, slow-growing invasive tumors predominantly involving the genital area, trunk, head and neck (2,3). We present an illustrative case of an advanced eccrine cell tumor.

Case presentation

A 46-year-old woman with no significant medical history was referred from primary care due to a two-month clinical picture which began with a dry cough, elevated temperatures (not quantified), weight loss (approximately 10 kg) and constitutional symptoms, along with painful nodular lesions beginning on the right thigh and progressively spreading to the extremities, face, neck and thoracoabdominal region. She received multiple courses of antibiotics without improvement. She was admitted in fair general condition, hemodynamically stable, without systemic inflammatory signs, in significant pain, with generalized mucocutaneous pallor, dyspnea at rest associated with a diminished vesicular murmur in the left basal region, and grade II pitting edema of the lower extremities. Of note, she had multiple, painful violaceous nodules of varying diameters, with an erythematous base (some with a tendency to central ulceration), on the scalp, left upper eyelid, chest and anterior abdominal wall, and upper and lower extremities (Figures A and B). The largest was on the anterior surface of the right thigh.

Lab tests showed leukocytosis with neutrophilia; heterogenous microcytic, hypochromic anemia; mild thrombocytosis (possibly reactive), elevated PCR (Table 1), hypoalbuminemia, prolonged coagulation times, elevated alkaline phosphatase, normal transaminases and hypercalcemia (Table 3). A soft tissue ultrasound showed multiple solid, hypervascular nodules with mixed echogenicity in the muscle on the anterior surface of the right thigh; the largest measured 38 x 34 mm. Empiric antibiotic treatment was begun with vancomycin and piperacillin-tazobactam. The chest computed tomography showed a tumor with heterogenous density involving the basal segment of the lower lobe of the right lung, which was enhanced with the contrast medium. In addition, there were soft-tissue density subpleural and thoracic wall lesions with similar characteristics (Figure 2A). Abdominal computed tomography showed a tumor-like lesion extrinsically compressing the inferior vena cava and right ureter (Figure 2B). A skin lesion biopsy was taken, with the following histopathological finding: dermis infiltrated by a malignancy made up of large cells with an oval nucleus, with eosinophilic cytoplasm and clumped chromatin, well-defined borders, and an associated moderate desmoplastic reaction. Immunohistochemistry confirmed reactivity for S100, CK, CK7, EMA and CEA, with a Ki-67 calculated proliferation of 20%, whose immunophenotype and histopathological characteristics favored a diagnosis of eccrine cell carcinoma (Figure 3). She was seen by the oncology service who ordered ambulatory palliative care. The patient died two weeks after discharge.

Discussion

Eccrine cell carcinoma is a heterogenous and rare group of malignancies derived from the skin annexes, subdivided into two types: eccrine and apocrine. Most are not pure

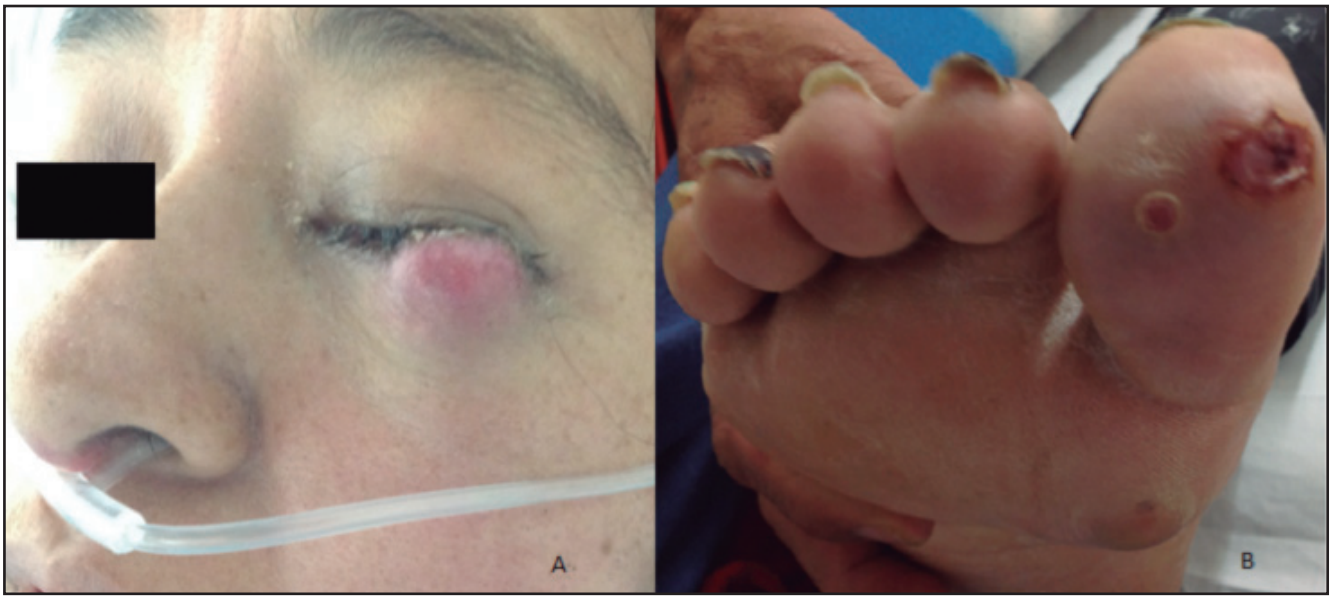

Figure 1. *A. Metastatic nodular lesion on the left lower eyelid. B. Multiple metastatic nodular lesions, most of them ulcerated, on the sole of the right foot.*

and may at times have pilosebaceous components. They are subdivided according to their degree of differentiation into low or high malignancy, although some, according to their type, may be purely malignant or even have a benign counterpart (4,5).

In general, they present as a single, slow-growing tumor which is locally invasive, nodular (unilocular), small, painless, and purplish red; or, on the contrary, as a multilocular, firm or cystic mass with a tendency to ulcerate (3, 7). They affect the genitals and perineum most frequently (34.5%), followed by the trunk (26.4%), head and neck (18.3%) and, in a much smaller proportion, the extremities (13.9%) (2, 3). Their prevalence is approximately one in every 13,000 samples evaluated in dermatological laboratories. Their reported incidence is 0.005% of all malignant epithelial neoplasms (1, 2, 6, 7). They affect adult patients between the fifth and sixth decade of life with no preference for sex

Table 1. *Blood cell counts and acute phase reactants.*

Paraclinical test	Result	Unit of measurement
Leukocytes	23.3	X103/ul
Neutrophils	21.4	X103/ul
Lymphocytes	1.1	X103/ul
Monocytes	0.6	X103/ul
Eosinophils	0.1	X103/ul
Basophils	0.1	X103/ul
Hemoglobin	10.1	g/dL
Hematocrit	32.2	%
Mean corpuscular volume (MCV)	75.1	fL
Mean corpuscular hemoglobin (MCH)	25.5	pg
Platelets	464	X103/ul
C-reactive protein (CRP)	23.7	mg/dL

Table 2. *Liver injury and function tests.*

Paraclinical exam	Result	Unit of measurement
Aspartate aminotransferase (AAT)	20	U/L
Alanine aminotransferase (ALT)	25	U/L
Total bilirubin	0.2	mg/dL
Direct bilirubin	0.1	mg/dL
Total protein	7	g/dL
Albumin	2.1	g/dL
Prothrombin time (PT)	13.2	Seconds
PT control	9.8	
INR	1.35	
Partial thromboplastin time (PTT)	41.5	Seconds
PTT control	28	

Table 3. *Tumor lysis markers.*

Paraclinical test	Result	Unit of measurement
Uric acid	3.6	mg/dL
Calcium	12.7	mg/dL
Alkaline phosphatase	137	U/dL

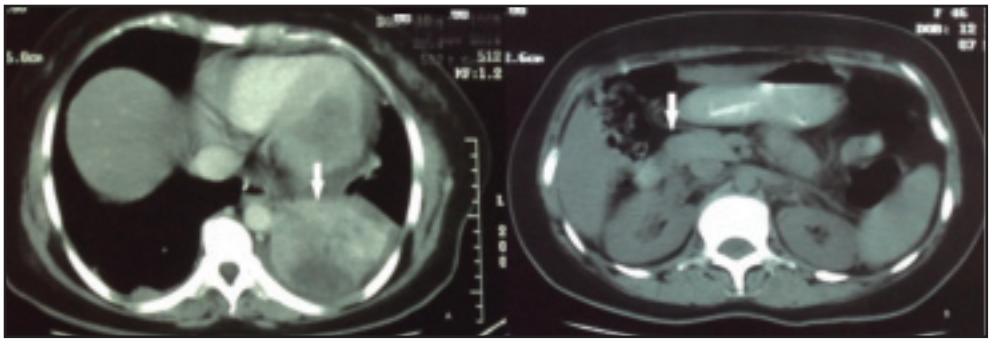

Figure 2. *A. Simple chest computed tomography showing a tumor lesion with heterogenous density involving the basal segment of the lower lobe of the right lung, and soft-tissue density subpleural and thoracic wall lesions (white arrow). B. Simple abdominal computed tomography showing a tumor lesion extrinsically compressing the inferior vena cava and right ureter (white arrow). B.*

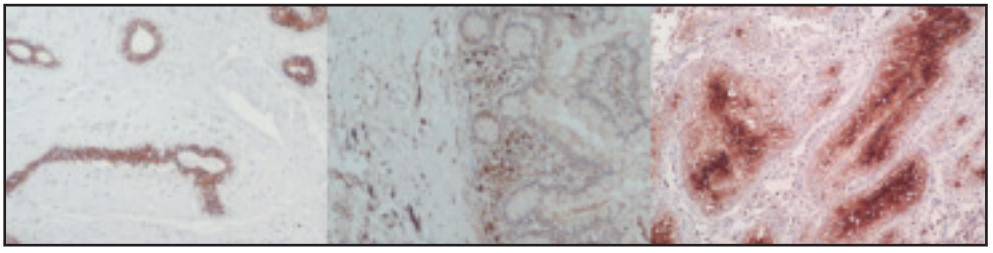

Figure 3. *Tissue extracted from an elbow lesion for immunohistochemistry A) Tumor cells with strong reactivity for CK-7. B) Tumor cells reactive for S100. C) Tumor cell population strongly positive for CEA.*

or race (4, 5, 8), which is compatible with this patient´s characteristics.

Their diagnosis is complex, since their clinical and histopathological characteristics are nonspecific and it is not easy to differentiate a primary lesion of the skin annexes from other metastatic lesions derived from visceral adenocarcinomas. These tumors have a variety of histopathological characteristics. Their growth patterns may be tubular, solid or tubulopapillary, with various degrees of differentiation which, along with the presence of lymphovascular and perineural invasion, have an important prognostic value, (4, 5, 9).

Although it is a nonspecific finding, PAS staining is useful for the initial approach, given the high amount of glucogen, although the diagnosis should always be confirmed with immunohistochemistry (2). In this regard, 100% of eccrine tumors express cytokeratin 7 (CK7). In addition, most of these tumors are positive for carcinoembryonic antigen (CEA) and S100 (8, 10, 11). It has also been found that epithelial membrane antigen (EMA) and cytokeratin positivity differentiate these tumors from those of epidermal origin (12).

The main treatment option in cases of nodular involvement is extensive surgical resection including recurrent or highly undifferentiated lesions, even without metastases to other levels (2, 13, 14). Other alternatives include Mohs microsurgery, with promising results and low local recurrence rates between 2 and 5% (15). El-Domeiri et al.´s reports on 83 patients treated with radiation therapy concluded that, in general, these lesions are resistant to that intervention, although some authors consider that its usefulness lies in the management of recurrent lesions or those that are inoperable due to their extension (16, 18).

The prognosis depends on the size of the lesion, the histological type, local lymphatic involvement and the presence of distant metastasis (2). The estimated five-year survival rate is 38%, only with early resection of the lesion (13). Ten-year survival is estimated at 9% in cases with multifocal nodular involvement, which contrasts with the 56% survival of those with local nodular involvement.

Conclusion

Eccrine cell carcinoma is a rare entity, which is associated with high mortality and difficult to diagnose due to its nonspecific characteristics. Despite its slow growth, it has a high potential for local and distant dissemination (14, 19).

With regard to the case presented, the lesion characteristics were similar to those described in the literature. However, most of the lesions were on the extremities, with the primary lesion located on the right thigh and having secondary ulceration. This case illustrates the natural evolution of this rare condition, with metastatic involvement of the skin, lung and retroperitoneum. The findings described in the immunohistochemistry carried out on the patient correlate with the few reported cases in the literature. The importance of an early diagnostic approach based on immunohistochemistry is emphasized to avoid an adverse clinical outcome.

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