Eccrine Porocarcinoma: A Clinical and Histologic Description of a Series of 11 Cases Treated at the University Hospital Complex in Leon, Spain[☆]

Porocarcinoma ecrino: estudio clínico-histológico de una serie de 11 casos del Complejo Asistencial Universitario de León

To the Editor:

Eccrine porocarcinoma (EPC) is the most common malignant neoplasm of the eccrine gland and originates in the ductal portion of the gland.[1] It was described by Pinkus and Mehregan in 1963.[2] It is a rare tumor that accounts for 0.005% to 0.01% of all skin tumors.[3] While most arise de novo, in 18% to 50% of published cases EPC developed in parallel with a pre-existing eccrine poroma.[4] EPC usually occurs in individuals over 50 years of age and affects males and females equally.[5] It most frequently develops in the lower extremities, head, and neck. The clinical presentation of EPC is varied, and can simulate that of other skin tumors. Chronic sun exposure, exposure to chemical agents, and immune suppression have been proposed as predisposing factors.[5] The local recurrence rate after surgical treatment is 20%, the regional lymph node metastasis rate is 20%, and the distant metastasis rate is 11%.[6]

A retrospective, descriptive study of EPC cases diagnosed between 2014 and 2018 was carried out at the University Hospital Complex in León, Spain. For each patient, clinical histories and biopsy sheets were reviewed to characterize epidemiology, clinical course, poor histological prognostic factors, and immunohistochemistry findings. Descriptive statistics were used to present the data. Eleven cases of EPC were identified (5 men and 6 women). The corresponding clinical and histological characteristics are shown in Table 1. The median (range) age of presentation was 83 (53–91) years.

There was a history of skin tumors in 81% of patients, as follows: actinic keratosis, n = 9; basal cell carcinoma, n = 2; squamous cell carcinoma (SCC), n = 3; melanoma, n = 1. The most commonly affected locations were the lower extremities and the head. The median (range) time since onset was 17.2 (2–48) months. Clinical presentation varied (Fig. 1A–D), although the most common presentation was a hyperkeratotic erythematous plaque.

The most frequent suspected diagnosis was SCC. Differential diagnoses included pyogenic granuloma, melanoma, and basal cell carcinoma.

Histopathology revealed a clear infiltrative pattern in 3 cases. Median tumor thickness was 4.68 mm. In 1 case, more than 14 mitoses per high-power field were detected. Additional immunohistochemical tests (carcinoembryonic antigen [CEA], epithelial membrane antigen [EMA], and cytokeratin [AE1/AE3]) were required in 8 cases (Table 1, Fig. 2A–D).

Four patients met the criteria for high-risk EPC (Patients 1, 4, 9, and 10 in Table 1). At the moment of consultation in our center, Patient 1 had extensive skin metastases (Fig. 1B) adjacent to the scar left after excision of an EPC 1 month earlier in another center. Due to her age and comorbidities, the patient refused an analysis of tumor extension and additional treatment, and died in less than 1 week due to decompensation of comorbidities. Patient 9 presented a large ulcerated tumor on the pubis (Fig. 1A). An initial biopsy was compatible with SCC. The patient underwent wide tumor excision and bilateral inguinal lymphadenectomy. Two months later, he presented with metastasis of EPC on the surgical scar, subsequently developed lung metastases and, despite treatment, died. Patient 10 underwent Mohs surgery and had a negative sentinel lymph node biopsy (SLNB). Patient 4 was treated with conventional surgery, and has had no recurrences to date.

Patients with localized tumors were treated with conventional surgery. No recurrences were recorded after a median (range) follow-up of 22.6 (3–53) months.

The clinical and histological characteristics in our series are similar to those previously reported,[7] except for median age, which was higher in our study and outside the range reported in the literature (median [range], 65 [50–80] y). A definitive diagnosis was established by standard histology and compatible immunohistochemical staining[8] (Fig. 2A–D). In addition to helping establish a definitive diagnosis, histology provides prognostic information that can facilitate patient management. Robson et al reported that infiltrative and/or pagetoid growth patterns were associated with an increased risk of local recurrence. Tumors thicker than 7 mm, an elevated mitosis count (>14 mitoses per high-power field), and the presence of lymphovascular invasion have been associated with an increased risk of distant metastasis.[9] Some authors, including Belin et al, propose Mohs surgery for tumors with infiltrative and/or pagetoid patterns.[10] Others propose SLNB for high-risk tumors.[6] However, there is little evidence of the value of this approach owing to the paucity of documented cases.

Although a rare tumor, an increase in the incidence of EPC is likely given the growing elderly population. Early diagnosis and treatment of EPC is important owing to this tumor's tendency to recur locally and its metastatic potential. When proposing treatment protocols, it may be necessary to establish a series of clinical and histological prognostic factors that define high-risk EPC, similar to those that exist for other tumors such as SCC.

Table 1 Eccrine Porocarcinoma Cases: Clinical and Histological Characteristics, Treatment, and Course

Case No.	Age, y	Sex	Location	Clinical Characteristics	Initial Lesion Size, cm	Time Since Onset, m	History of Diseases of Interest	Immunohistochemistry	Growth Pattern	Tumor Thickness, mm	Lympho-vascular Invasion	Mitoses per High-Power Field	Presumptive Diagnosis	Treatment	Course (Follow-up)
1	91	F	Right pectoral	Erythematous infiltrated plaque	4	ND	AK	CEA, EMA, CK19 (+)	Infiltrative–pagetoid	**3.4**	**Yes**	5	SCC	Biopsy of previously excised lesions	Died after 5 days due to decompensation of comorbidities
2	77	F	Right leg	Grayish hyperkeratotic erythematous plaque	1	ND	SCC	Not performed	Expansive with pagetoid foci	2.13	None	2	SCC	Conventional surgery	No recurrence (4 y 6 m)
3	83	M	Left thumb	Brownish hyperkeratotic excrescent plaque	2.1	12	SCC	CEA, EMA (+)	Expansive with foci of infiltration	2.78	None	2	SCC	Conventional surgery	No recurrence (3 y 10 m)
4	72	F	Interparietal	Grayish hyperkeratotic plaque	5	6	Melanoma in situ, AK, BCC	CEA, EMA, CK AE1/AE3 (+)	Expansive	**7.5**	**Yes**	**23**	SCC	Conventional surgery	No recurrence (1 y 7 m)
5	87	F	Right cheek	Erythematous plaque	3.5	48	BCC, SCC	Not performed	Expansive with foci of infiltration	3.13	No	3	SCC, Bowen	Conventional surgery	No recurrence (1 y)
6	89	F	Right thigh	Erythematous–violaceous keratotic plaque	1	4	AK	EMA, CK19, CK AE1/AE3 (+)	Minimally infiltrative with pagetoid permeation	2.5	No	2	SCC	Conventional surgery	No recurrence (8 m)
7	75	F	Left thigh	Eroded keratotic plaque	1	2	AK	CEA, EMA, CK19 (+)	Focally infiltrative with some pagetoid permeation	3.88	No	5	Porocarcinoma, SCC, BCC, melanoma	Conventional surgery + widening .5 cm + inguinal ultrasound and FNA of ganglion (-)	No recurrence (6 m)
8	85	M	Interparietal	Crusted ulcer	1.5	48	AK	Not performed	Expansive with pagetoid foci	1.75	None	1	SCC	Conventional surgery	No recurrence (3 m)
9	76	M	Pubis	Ulcerated papillary plaque	5	ND	Non-Hodgkin lymphoma	CEA, EMA, CK19 (+)	**Infiltrative**	**10.38**	**Yes**	3	SCC	Conventional surgery + bilateral inguinal lymphadenectomy + chemotherapy + radiotherapy	Died after 10 m due to pulmonary metastases from EPC
10	83	M	Fourth finger	Reddish excrescent polyp	3	6	None	CEA, EMA, CK19 (+)	**Infiltrative**	**8.15**	**Yes**	2	Pyogenic granuloma, melanoma, SCC, Merkel cell	Mohs surgery + axillary ultrasound-)	No recurrence (6 m)
11	53	M	Left cheek	Erythematous violaceous ulcer with pearly borders	1.5	12	AK	CEA, EMA, CK19 (+)	Expansive with pagetoid foci	3.83	None	1	BCC	Conventional surgery	No recurrence (4 y 6 m)

Abbreviations: AK, actinic keratosis; BCC, basal cell carcinoma; EPC, eccrine porocarcinoma; F, female; FNA, fine-needle aspiration; M, male; ND, not determined; SCC, squamous cell carcinoma.
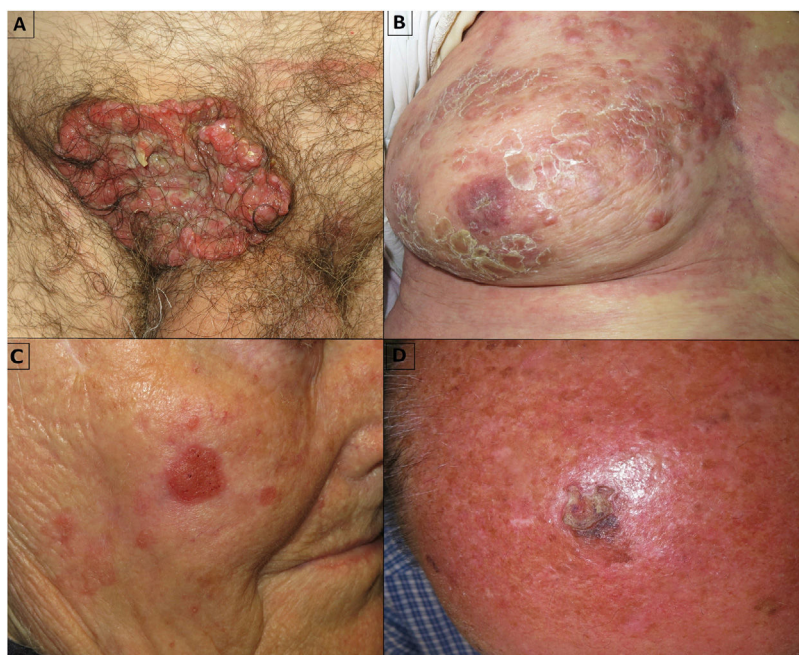
High-risk data are highlighted in bold.

Figure 1 Various clinical presentations of eccrine porocarcinoma.
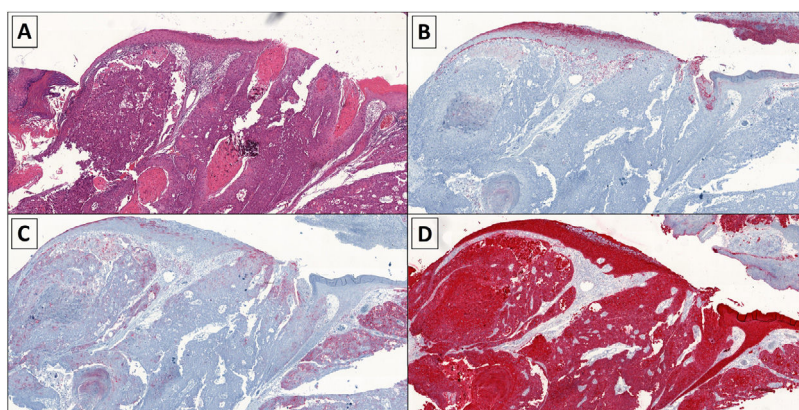

Figure 2 A, Histology image showing large cells with vesicular nuclei, a visible nucleolus and ample cytoplasm, cellular atypia, and numerous atypical mitoses (hematoxylin-eosin, original magnification ×4). The cells are arranged in trabeculae, cords, and nests and areas of tumor necrosis are visible. B, Immunohistochemistry image showing weak positivity (carcinoembryonic antigen, original magnification ×4). C, Immunohistochemistry image showing positive epithelial membrane antigen staining (original magnification ×4). D, Immunohistochemistry image showing positive cytokeratin (AE1/AE3) staining (original magnification ×4).

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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An Efficacy of Cantharidin Treatment in Facial Molluscum Contagiosum in Younger Children: A Prospective Interventional Study in 67 Children[☆]

Eficacia del tratamiento con cantaridina del molusco contagioso facial en niños pequeños: un estudio prospectivo intervencionista en 67 niños

Dear Editor:

Molluscum contagiosum (MC) is a cutaneous viral infection caused by the molluscum contagiosum virus which is commonly observed in children and immunocompromised patients. It presents as single or multiple, discrete white or flesh-colored papules of sizes 1-5 mm in diameter and with typical central umbilication.[1] Various treatment modalities available to treat MC include curettage, cryotherapy, extraction by a needle, and topical vesicants such as cantharidin, potassium hydroxide, salicylic acid, retinoids, silver nitrate and phenols. Immunotherapy with imiquimod, nitric oxide, and cimetidine have also been used with variable efficacy.[1,2]

Cantharidin is a terpenoid derived from the bodies of blister beetle which induces blistering through acantholysis and heals without scarring; hence its efficacy in MC lesions.[2] However, there is a paucity of data on its use for facial MC because current convention discourages use of cantharidin on the face.[3]

We performed a prospective open-labeled uncontrolled interventional study to evaluate the efficacy of cantharidin in treatment naive facial MC in children of ≤10 years. Patients with secondary bacterial infections, underlying immunodeficiencies and known hypersensitivity to cantharidin were excluded. Investigations performed in all patients included complete blood count, blood sugar, urine analysis and HIV antibodies. Parents were counseled and written consent was obtained.

Each lesion was treated with cantharidin 0.7% solution (CANTHACUR® Paladin labs Inc.) with a cotton-tipped applicator. Patients were instructed to wash the treated areas only after 4 hours. Levocetirizine syrup and mupirocin ointment were prescribed for 5 days. Repeat application was performed every 2 weeks of interval for a maximum of 5 doses. Participants and/or their parents were advised about hand hygiene, avoidance of shared personal clothing or items and cessation of scratching.

At each visit, the clinical response and adverse events were assessed. The number of lesions at the beginning and at the end of the treatment was counted. The response at the end of the treatment was classified as complete (complete clearing-off lesion and appearance of no new lesions), moderate (clearing-off all treated lesions but persistence or occurrence of new lesions), mild (clearing of few but not all of the treated lesions and persistence of new lesions), and none (no response).

Differences between means of the lesions before and after the treatment were compared by student paired t test. Statistical analysis was done using Graphpad Prism 7 software.

During the six recruiting months, 71 patients attending our care fulfilled the inclusion criteria and did not exhibit any of the exclusion criteria. Sixty-seven patients consented to participate in the study, out of which four were lost to follow-up. Upon telephonic conversation with each of them, it was confirmed that their drop-outs from the study were unrelated to adverse events caused by a cantharidin. Therefore, the studied population comprised a total of 63 patients, 45 males and 18 (24%) females, with a median age of 6 years (range 1-10). The median duration of disease was 4 months (range 1-10 months). Sixty (95%) patients, showed a complete response. In these patients the lesions completely healed with the formation of crusts, which then shaded off within one week (Fig. 1 and 2). One patient each showed a moderate response, and a mild response; whereas 1 patient did not respond. The mean lesion count at a baseline was 11.7 ± 4.3 and after 5 doses (5 weeks) was 1.9 ± 0.7 ($p < 0.001$).

As expected, 56 (90%) of the treated children experienced blistering in the treated areas which ruptured within 3-4 days and healed with uneventful recovery. Ten patients complained of mild to moderate degree of pain. Three patients developed secondary bacterial