

SHORT COMMUNICATION

Zosteriform Metastases of Eccrine Porocarcinoma Mimicking Eruptive Seborrhoeic Keratoses

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Eccrine porocarcinoma is a rare malignant tumour originating in the eccrine sweat gland acrosyringium. Clinical and histomorphological overlap between a wide range of benign and malignant cutaneous neoplasms, including primary adnexal tumours, squamous cell carcinoma (SCC), cutaneous metastases and rarely seborrhoeic keratosis (SK), pose diagnostic challenges. We report on a unique case of cutaneous metastases of eccrine porocarcinoma clinically presenting with a zoster-like, clustered pattern of brownish, hyperkeratotic, confluent papules and plaques clinically mimicking eruptive SK.

CASE REPORT

A 79-year-old woman presented to our department with a zoster-like, clustered pattern of brownish, hyperkeratotic, confluent papules and plaques over her right back, adjacent to a tender 5 cm scar (Fig. 1a). She first recognised lesions 6 months ago which thereafter rapidly increased in numbers. Further clinical examination revealed a palpable suspicious lymph node in the right axilla. The patient had a history of colorectal cancer that had been excised completely in 2000. The scar on her back was reported to result from the histologically incomplete excision of a highly differentiated cutaneous SCC in 2004. A recommended re-excision had not been performed. In 2009 a lymph node metastasis of a moderately differentiated uncornified SCC in the right axilla had been surgically removed. No further treatment or appropriate oncological aftercare had been administered.

A recent biopsy of the current lesions on the patient's back performed at another institution classified the tumours as epidermotropic metastases of an adenocarcinoma, histologically

presenting as superficial porocarcinoma. Differential diagnosis of metastases of the former rectal carcinoma was dismissed with all relevant immunohistochemical markers being negative (CDX2, PAX 2, PAX 8, Cytokeratin 7, Cytokeratin 20).

Histopathological examination of another skin biopsy at our department revealed typical epidermal characteristics of SK such as papillomatosis, acanthosis and hyperkeratosis with pseudocornoid cysts. Widespread nests of pleomorphic epithelial cells with partially vacuolated cytoplasm and focal acantholysis as well as multiple atypical mitoses were found in the epidermis and predominantly subepidermal layers. Deeper dermal layers revealed separated cell clusters, partly within dilated lymphatic vessels (Fig. S1¹). Immunohistochemistry showed strong expression of epithelial membrane antigen (EMA) but not carcinoembryonic antigen (CEA). Concomitant histopathological reevaluation of the skin biopsy in 2004 revealed similar poroid, pleomorphic cell formations, comparable to our current findings and consistent with primary porocarcinoma. Based on our dermatopathological examination and the clinical history we diagnosed epidermotropic metastases of a porocarcinoma not fully excised in 2004, clinical presenting as SK in a zosteriform arrangement.

To evaluate local tumour spread 11 mapping biopsies were performed, 9 of them revealing tumour infiltration. Additional circular mapping biopsies in more peripheral clinically healthy-appearing skin regions revealed further singular nests of tumour cells in subepidermal lymphatic vessels in 2 biopsy specimens (Fig. 1b).

Due to widespread local tumour infiltration a complete surgical curative therapy was disregarded. CT and MRI scans of the patient revealed lymph node metastasis in the right axilla and no evidence of further organ involvement or primary visceral origin. Pursuant to the recommendations of an interdisciplinary tumour-board at our skin cancer centre fractional radiation therapy (total-dose 54 Gy) of the right axilla and the dorsal thoracic region was conducted, followed by a sequential boost of the thoracic region with 12 Gy. Subsequent staging showed regression of the lymph node- and skin-metastases. Adjuvant therapy with cetuximab was discussed but declined by the patient.

DISCUSSION

Eccrine porocarcinoma was first described by Pinkus & Mehregan in 1963 (1). It represents between 0.005 and 0.01% of all skin tumours (2). It may invade the papillary dermis and dermal lymphatics, spread within them, and then reinvade the epidermis, giving rise to cutaneous metastases (3). This invasion pattern may explain the propensity for local recurrences (20%) and lymph node or organ metastasis (10%). This malig-



Fig. 1. Multiple brownish, hyperkeratotic papules coalesce in a zosteriform pattern to form plaques with ill-defined margins on the right back (a). Nearby, on the right flank a bright 5 cm long scar is visible (arrow). Mapping-biopsies taken on clinically unaffected skin (b). Singular nests of tumour cells were detected in subepidermal lymphatic vessels in specimen 2 and 8.

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nancy most commonly affects patients over 50 years without gender preference (4). The clinical appearance of porocarcinoma is remarkably variable with differentials including SK, pyogenic granuloma, melanoma, SCC and basal cell carcinoma (BCC) (5).

In most cases porocarcinoma is a histological rather than a clinical diagnosis. Current immune histological markers reported to be helpful include CEA and EMA as the most sensitive ones and cytokeratin 19 as the most specific one (6). Differentiation of squamous variants of eccrine porocarcinoma from SCC is particularly challenging (7), but essential because porocarcinomas have a greater propensity for developing lymph node metastases and a poorer survival (4, 6). Lymphatic metastasis occurs in 10–20% of cases regardless of the tumour thickness (3, 6). While visceral metastases are rare, the case fatality rate in patients with lymph node metastases is approximately 67% (8). There is no established standard for therapy of porocarcinoma, especially in cases of metastasis. With a local recurrence rate of 20% (3) micrographic excision is the widely accepted treatment modality (5). Additionally, lymph node clearance should be performed if regional lymph nodes are involved (5). The response to radiotherapy and chemotherapy (e.g. MTX, Bleomycin, Cisplatin) and other drugs (e.g. interferon-alpha, isotretinoin) seems to be low (1).

It has been suggested that porocarcinoma may arise from benign eccrine poroma (4). However in the largest series of 69 patients this was reported in only 18% of cases (4). Our case highlights the diagnostic challenges associated with this rare tumour and reveals several extraordinary features. To the best of our knowledge this is the first reported case with a zosteriform, verrucous growth pattern of epidermotropic metastases of eccrine porocarcinoma. This metastatic pattern has only been reported sporadically in adenocarcinoma of the ovary (9) and a few other cancers (10). Zosteriform dissemination has been attributed to direct lymphatic infiltration of cancer cells (9, 11), which also was observed in our case.

Another unusual aspect of the present case are the epidermal structures within the epidermotropic metastases, which are clinically and histologically indistinguishable from SK.

Although the association between SK and malignant skin tumours within one lesion has been sporadically reported since 1932 (12), this is generally considered a rare combination. Most tumours reported to occur within SK are known to be BCCs (13).

To the best of our knowledge, there are only 3 previously reported cases of eccrine porocarcinoma arising on an SK. One occurred synchronously with Bowen's disease, forming a single lesion on a preexisting SK of the abdomen (14). In the 2 other reported cases eccrine porocarcinoma arose within a preexisting SK on the

abdomen (14). In our patient, a reverse mechanism may be suspected since seborrheic lesions coincided with the epidermotropic metastasis of an eccrine porocarcinoma in the absence of preexisting SK in the tumour area. Altered expression of several proteins associated with cell-cycle regulation and cell-proliferation have been reported in SK (15) and such altered patterns of expression have been related to the occurrence of malignant tumours in SK lesions.

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