

Title

Cutaneous lymphangitis carcinomatosa: Dermoscopic and reflectance confocal microscopy features.

Keywords: Reflectance confocal microscopy, cutaneous lymphangitis carcinomatosa, cancer, dermoscopy.

Main text:

Cutaneous lymphangitis carcinomatosa (CLC) lesions can be polymorphous, often mimicking infections, inflammatory or tumoral processes. Dermoscopic features of CLC have been scarcely described and the diagnostic usefulness of other non-invasive techniques, such as reflectance confocal microscopy (RCM) for the management of CLC has not been reported.

A 70 year-old woman was referred for evaluation of several lesions on the chest that had progressively appeared for the last two months. Past medical history included left breast ductal carcinoma, pT3 pN2 M0, triple negative, treated with mastectomy, standard chemotherapy and radiotherapy six years before. Physical examination revealed multiple erythematous to violaceous patches, papules and plaques, arranged in a reticular distribution with diffuse telangiectasia (Figure 1a). Dermoscopy showed reddish to purple structureless areas with a patchy distribution and the presence of diffuse serpentine vessels and focal thin arborizing vessels (Figure 1b).

The differential diagnosis could be established between CLC and radiotherapy induced angiosarcoma (RIA). A hand-held RCM examination with Vivascope® 3000 (Caliber I.D., Rochester, NY, USA) was performed, showing a thinned epidermis and flattening of dermal-epidermal junction. Besides, in the upper dermis, multiple dark, round to tubular spaces filled with aggregates of round atypical reflective cells were observed (Figure 1c). These findings supported the diagnosis of CLC, and helped to select an optimal area to perform a biopsy. Histopathological examination showed superficial dermal congestive blood vessels, and several groups of atypical pleomorphic cells inside

dilated lymphatic vessels in the superficial and reticular dermis (Figure 1d-e). Immunohistochemical stains (Figure 1f) revealed CKAE1-3, GATA-3, GCDFP15 positive cells corresponding to a breast cancer origin located inside lymphatics vessels (podoplanin / D2-40 positive). A close structural correlation between RCM images and histology was observed. The patient was diagnosed with a skin recurrence of breast cancer.

CLC is a unusual form of CM characterized by an occlusion of dermal lymphatic vessels by neoplastic cells. It can often mimic a wide range of benign cutaneous inflammatory conditions such as erysipelas or cellulitis, herpes zoster or even eczema ^{1,2}. Our patient had a previous diagnosis of breast carcinoma treated with radiation therapy, that raised the differential diagnosis with RIA. Dermoscopically, RIA can show homogeneous structureless purple-pink-whitish areas in different arrangements ^{3,4}. Dermoscopy of CLC has not been reported so far. In our case, diffuse serpentine vessels and some focal thin arborizing vessels were evident overlying reddish to purple structureless areas with a patchy distribution. These well-defined vessels could be a hallmark in the demoscopical differentiation between CLC and RIA in breast cancer patients previously treated with radiotherapy, since many authors have highlighted the absence of well-defined vascular dermoscopic structures, such as lacunae and vessels, in cases of cutaneous angiosarcoma⁵. Our case, shows clinical, dermoscopic, RCM and histopathological features of CLC, highlighting a high correlation between RCM images and the histopathology. We suggest that RCM can be a useful tool in the diagnosis of CLC confirming clinical and dermoscopic suspicion. Further studies are necessary to widely describe RCM features of CLC and to correlate RCM findings with histopathologic features.

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LEGENDS

Figure 1. Clinical, dermoscopic, RCM and histopathological findings of CLC.

a) Clinical features on the areas previously treated with radiotherapy: multiple erythematous to violaceous patches, papules and plaques with diffuse telangiectasia.

b) Dermoscopic findings: reddish to purple structureless areas with a patchy distribution along with well-defined diffuse serpentine vessels and focal thin arborizing vessels.

c) RCM features: round to tubular dark spaces in the dermis, filled with aggregates of round atypical reflective cells.

d) Histopathological findings: flattened epidermis, multiple dilated lymphatic vessels in the superficial and reticular dermis filled with aggregates of atypical pleomorphic cells along with congestive superficial blood vessels (Haematoxylin and eosin x100).

e) Higher magnification section: pleomorphic atypical aggregates of cells inside lymphatic vessels (Haematoxylin and eosin x400).

f) Immunohistochemical studies: CKAE1-3 positive cells, that were also positive for GATA-3 and GCDFP15 (x400), corresponding to breast cancer cells inside of podoplanin/D2-40 positive lymphatics (inset).

