Case Report

# Trigeminal trophic syndrome simulating rodent ulcer basal cell carcinoma: a new clinico-dermoscopic approach*

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**Abstract:** Trigeminal trophic syndrome is an uncommon cause of facial ulcers, that affects the sensitive area of the trigeminal nerve. We present the case of an 84-year-old patient with ulcerated facial trigeminal trophic syndrome, and report the development of a clinico-dermoscopic approach for his clinical examination. The value of this model for the diagnosis of facial ulcers suspected to be a rodent ulcer basal cell carcinoma is suggested.
**Keywords:** Dermoscopy; Skin ulcer; Trigeminal nerve

## INTRODUCTION

Trigeminal trophic syndrome (TTS) is an uncommon cause of facial ulcers, that affects the sensitive area of the trigeminal nerve.[1] We present a patient with ulcerated TTS. We emphasize herein the introduction of a clinico-dermoscopic approach for clinical examination, which is described for the first time in this setting.

## CASE REPORT

An 84-year-old male, with a history of hypertension, dyslipidaemia, stroke and myocardial infarction, was referred to us with a diagnosis of rodent ulcer basal cell carcinoma. He had had two progressive facial ulcers for several months in the past. Physical examination revealed two deep facial ulcers unilaterally located on the left supraorbital and paranasal area of 4x2 cm and 4x5 cm in diameter, respectively. The ulcerations had well-defined borders, with a geometric shape in some areas (Figure 1). The polarized dermoscopic examination revealed a polygonal ulceration devoid of specific signs suggestive of the processes that could make the differential diagnosis of the lesions. Dermoscopic observation of the ulcerations were as follows: **a**) border: flat, well demarcated, or sloping, angulated, polygonal, erythematous outline with scattered short linear vessels. Negative criteria: absence of structures suggestive of basal cell carcinoma; **b**) base: irregularly raised, homogeneously reddish, with some peripheral homogeneous whitish areas, and scarce chrysalis structures and vessels; Negative criteria: absence of structures suggestive of lupus vulgaris; **c**) exudation and oozing but not bleeding; brown or haemorrhagic crusts covered some areas (Figure 2). In addition, the neurological examination showed a loss of sensitivity to pain and temperature surrounding the affected area. Histological examination showed epidermal loss and fibrin-leukocyte deposit material on a dermis with areas of fibrosis and capillary proliferation but devoid of granulomatous lesions, tumour proliferation, signs of vasculitis or signs of infectious processes (Figure 3). All further microbiological studies were negative. Magnetic resonance imaging (MRI) was also performed, objectifying images of chronic vascular pathology at the level of the brain stem (Figure 4A). It was found also that the left trigeminal nerve, in its pre-ganglionic pathway, was in close contact with the left anterior inferior cerebellar artery (Figure 4B). The diagnosis of trigeminal trophic syndrome (TTS) was made. Local dressings with hydrogel and occlusive hydrocolloid dressings; protection, strict avoidance of handling the ulcers and use of protective gloves at night was recommended. The subsequent evolution was favourable, with complete re-epithelialization of lesions.

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## DISCUSSION

TTS is characterized by the appearance of one or more facial, strictly unilateral, ulcerations. Its characteristic location is the nasal wing, but it can also affect the frontal region, scalp, mouth, and other areas. TTS occurs after damage to the branches of the sensory nucleus of the trigeminal nerve, often after ablative procedures used in treating trigeminal neuralgia or after a cerebrovascular accident.[1] TTS are self-induced ulcers, secondary to traumatic manipulation of an area with altered sensation.[2] The latency period between the damage of the sensory nerve fibers and the appearance of the lesions is variable, ranging from weeks to decades.[3] Treatment mainly consists of patient education to prevent manipulation of the lesions and local measures. Gabapentin, carbamazepine, amitriptyline and alginate emulsions are some of the medical treatments used in TTS. Reconstructive surgery has also been done.[4]

TTS is a diagnosis of exclusion. Histology is not diagnostic, showing signs of an unspecific chronic ulcer, with no evidence of tumour proliferation, granulomas, vasculitis or infectious processes.[1] The broad differential diagnosis includes neoplasms, cutaneous vasculitis, infectious processes, pyoderma gangrenosum and factitial dermatitis.[3,5] Most of these must be ruled out by biopsy and microbiological studies. Both TTS and factitious dermatitis (FD) are secondary to manipulation of the lesions, but unlike FD, TTS is unilateral and always presents with underlying neurological damage. This nerve damage is absent in pure FD, where psychiatric symptoms are predominant.[5]

Dermoscopy (DC) is a non-invasive diagnostic technique which facilitates diagnosis of different skin tumours and inflammatory dermatoses.[6] Dermoscopic investigation of the ulceration of this patient did not reveal positive, specific dermoscopic signs to be

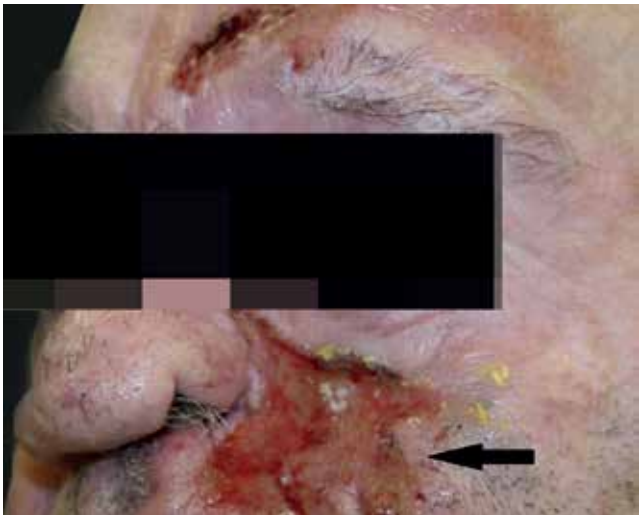

**Figure 1:** Deep facial ulcers unilaterally located on the left supraorbital and paranasal area. Well-circumscribed, polygonal, paranasal ulceration, with haemorrhagic crusts covering some areas (arrow)

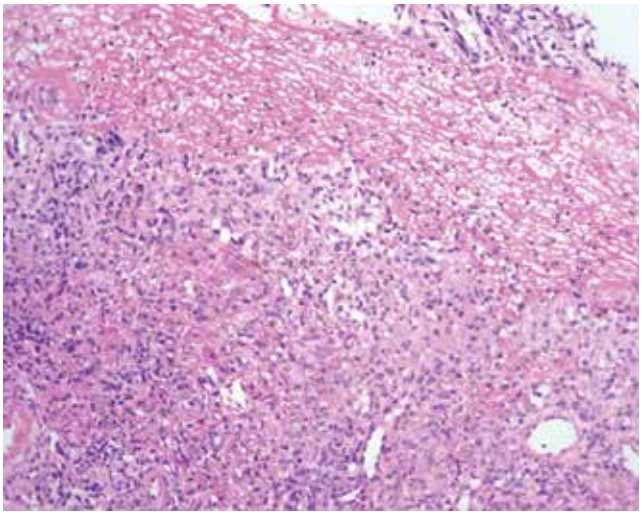

**Figure 3:** Histological examination showed a non-specific ulceration, devoid of granulomas, tumour proliferation, or other signs. Hematoxylin & eosin, X20

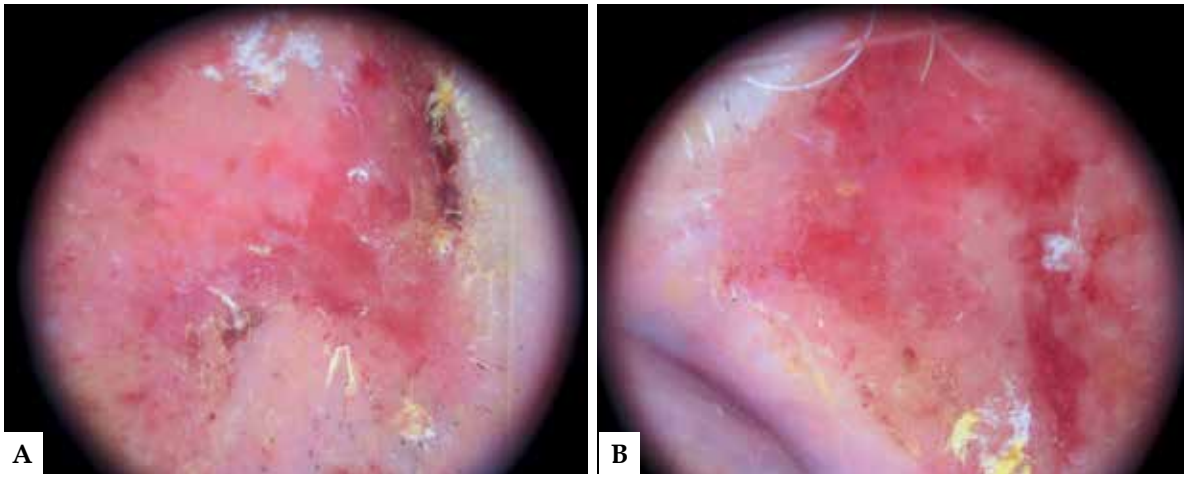


**Figure 2: A.** Polarized dermoscopy of the lesions showed polygonal, angulated ulcerations devoid of dermoscopic signs suggestive of specific diseases. **B.** The base was irregular and reddish, with scattered homogeneous whitish areas, chrysalis structures and vessels; dermoscopic photographs were taken through a glass, in order to prevent contact and nosocomial infections

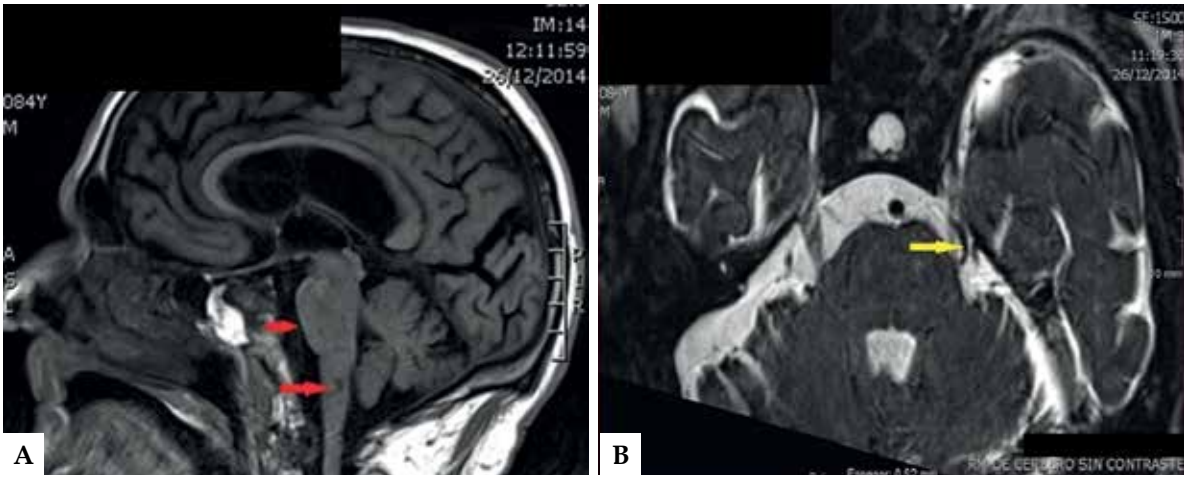


**Figure 4: A.** MRI showing images of chronic vascular pathology (red arrows). **B.** Left trigeminal nerve in close contact with the left anterior inferior cerebellar artery (yellow arrow)

added to the clinical examination but it was of value to prove the absence of dermoscopic criteria suggestive of diseases included in the differential diagnosis.[6,7]

According to the current Consensus terminology, dermoscopic erosions and ulcers are defined as *"absence of epidermis often associated with congealed blood and without recent history of trauma"*.[7-9] Curiously, further morphological descriptors have not yet been applied for dermoscopically describing ulcers, although they appear non-specifically in a large spectrum of inflammatory and tumoural diseases. We suggest that, in order to complete the examination of skin lesions with loss of substance under dermoscopy, it could be of interest to consider not only the depth (which differentiates between superficial erosions and the deeper dermal ulcerations), but to add other clinico-dermoscopic features such as: the size; the border or outline (form, colour, presence or not of polygonal, geometric, angulated or lineal edges, suggesting a factitial cause); the type of the base of the ulcer (colour, relief); exudation (haemorrhagic or not) or bleeding; crusts (brown, yellow, haemorrhagic).

To the best of our knowledge, the dermoscopic study of ulcerations has been restricted to BCC, where it can be a diagnostic tool. Dermoscopic ulcer (DU) is one of the six classic dermoscopic features considered diagnostic, as single features, for diagnosis of pigmented BCC in the Menzies model.[7] Ulcerations and erosions have also been used for the differential diagnosis of superficial BCC and solitary red scaly lesions including psoriasis.[10] Variations in DU between different BCC forms have been found according to the degree of pigmentation[9] and the clinical subtype of BCC.[10]

In conclusion, for those facial ulcerative lesions suspected to be a rodent ulcer basal cell carcinoma, we suggest a combined clinico-dermoscopic approach for improving clinical diagnosis. In our case, the clinico-dermoscopic polygonal shape of the ulceration, paraesthesia, and hypo-anaesthesia were the most remarkable clues before the confirmatory histopathological diagnosis.❑

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