Atypical Dermatitis of the Hand: A Quiz

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A 57-year-old Caucasian woman presented in May 2021 with a 20-year history of dermatitis of the right hand, which was initially associated with intense local pain, such that she was unable to perform everyday movements of the hand. On examination, extreme xerosis of the right hand, local erythema, rhagadiform lesions, and clubbed fingernails were observed, characterized by enlargement of the distal phalanges with striation of the nails and skin. The index, middle, and ring fingers showed scleroderma-like morphological alterations (Fig. 1).

Initial similar cutaneous alterations were observed on the patient's left hand. She had previously applied local corticosteroid therapy, resulting in partial temporary resolution of the cutaneous manifestation, with subsequent progression after steroid suspension.

Routine blood tests and antinuclear antibodies were within normal ranges. Standard series patch-testing was negative, and no alterations were observed on periungual capillaroscopy. X-ray of the hands revealed arthrosis and joint space narrowing at the trapeziometacarpal joints.

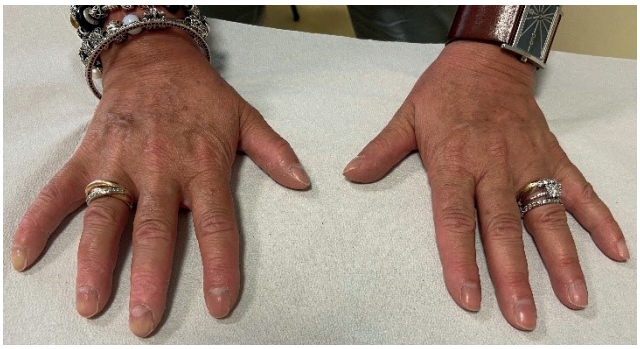

Fig. 1. The patient's right hand shows skin atrophy with intense xerosis, changes in nail trophism, and nail clubbing.

What is your diagnosis? See next page for answer.

ANSWERS TO QUIZ

An Atypical Dermatitis of the Hand: A Commentary

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Diagnosis: **Carpal tunnel syndrome**

Carpal tunnel syndrome (CTS) is a frequent neurological impairment caused by compression of the median nerve in the carpal tunnel, leading to alterations in its sensory, motor, and autonomic functions. Numbness, weakness, pain, paraesthesia, and loss of sensory discrimination, involving the thumb, index and middle fingers, atrophy of the thenar musculature are typical clinical manifestations (1).

Many reports in the literature describe dermatological involvement following CTS, such as ulceration, blistering, hypohidrosis, Raynaud's phenomenon, and irritant contact dermatitis. Severe cutaneous impairment can also lead to a severe variant called ulcerative mutilating CTS (2). Overall, 27 studies have been published, reporting 43 cases of cutaneous and nail changes associated with CTS (3).

Cutaneous and nail manifestations, such as trophic changes, are thought to be related to many factors: autonomic and vasomotor dysfunction caused by nerve compression, trauma, and infections. According to a more recent pathogenetic theory, skin changes derive from dysregulation in the releasing of neuropeptides, such as substance P, neurokinin A, and neurokinin B, from peripheral terminations of the median nerve (4).

These skin changes can be confused with the initial form of systemic sclerosis (5) and can predominate over neurological symptoms (6). Nevertheless, this epiphenomenon remains under-reported in dermatological studies.

Treatment of the underlying CTS induces rapid regression of neurological symptoms and significant improvement in skin changes, with gradual resolution of the atrophic component; as was the case in the current patient, in whom endoscopic neurolysis was performed, with immediate resolution of painful symptoms and gradual resolution of skin and nail alterations.

Dermatologists should be aware of this syndrome and should always investigate possible underlying neurological factors in cases of trophic alterations of the skin and its adnexa.

REFERENCES

1. Foti C, Romita P, Vestita M. Unusual presentation of carpal tunnel syndrome with cutaneous signs: a case report and review of the literature. Immunopharmacol Immunotoxicol 2011; 33: 751–753.
2. Scarfì F, Arunachalam M, Galeone M, Bassi A, Difonzo E. Fingertip necrosis as a sign of carpal tunnel syndrome. J Am Acad Dermatol 2013; 68: e51–e52.
3. Egger A, Tosti A. Carpal tunnel syndrome and associated nail changes: review and examples from the author's practice. J Am Acad Dermatol 2020; 83: 1724–1729.
4. Bove D, Lupoli A, Caccavale S, Piccolo V, Ruocco E. Dermatological and immunological conditions due to nerve lesions. Funct Neurol 2013; 28: 83–91.
5. Morgan ND, Hummers LK. Scleroderma mimickers. Curr Treatm Opt Rheumatol 2016; 2: 69–84.
6. Aratari E, Regesta G, Rebora A. Carpal tunnel syndrome appearing with prominent skin symptoms. Arch Dermatol 1984; 120: 517–519.