Dermatomyositis: an association of gingival telangiectases and anti Jo-1 antibody in the adult

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A BSTRACT

Background: The presence of gingival telangiectases is an unusual clinical finding in adults with dermatomyositis (DM). Patients with aminoacyl-tRNA synthetase autoantibodies express one or more of the following features: myositis, interstitial lung disease, "mechanic's hands," and capillary abnormalities (facial telangiectases and Raynaud's phenomenon).

Case report: A 45-year-old woman with a classic form of DM of ten years' duration was evaluated. Clinical investigation revealed periorbital edema and violaceous erythema of the eyelids, Gottron's papules of the fingers, Gottron's sign on the elbows and malleoli, a plantar fissured, hyperkeratotic, and scaling eruption ("calloused feet"), ragged cuticles with dilated nail-fold telangiectasia, and gingival telangiectases. The patient fulfilled Bohan and Peter's criteria for the clinical, histological, EMG, and biochemical diagnosis of DM. Elevated titers of ANA (1:320) with a speckled pattern and anti Jo-1 antibodies were found in her sera by ELISA and Western blot.

Conclusion: The recognition of subsets within the spectrum of DM characterized by certain clinical and serological features may be important. Because facial telangiectases are a recognized finding in this subset of patients, we suggest that gingival telangiectases might be a marker for the antisynthetase syndrome.

K E Y W O R D S

dermatomyositis, gingival telangiectases, antisynthetase syndrome

Introduction

Dermatomyositis (DM) is a heterogeneous group of acquired, multisystem, inflammatory diseases that affect mainly skeletal muscles and skin. It has variable clinical features and laboratory characteristics (1, 2). The typical features of oral mucosa in DM are erythema and edema, hemorrhage, vesicles, erosions or ulcers, leukokeratosis (white plaques), and a net of dilated superficial vessels (3, 4). Capillary abnormalities in the gingiva have been proposed as an important diagnostic marker of juvenile DM (3). Antibodies to the Jo-1 antigen (cytoplasmic histidyl-tRNA synthetase) were described and characterized over 25 years ago (5, 6). The Jo-1 antibody was introduced as classification criteria for polymyositis (PM) or DM after epidemiological investigation in Japan (7). In this case report, we describe an adult DM patient that had prominent gingi-

val telangiectases and the presence of circulating anti-Jo-1 antibodies. We suggest that the two may be associated and, thus, gingival telangiectases may be a marker for "Jo-1 syndrome" or "antisynthetase syndrome." We believe that capillary abnormalities in the gingiva may be an important diagnostic marker of both juvenile and adult DM.

Case report

A 45-year-old Caucasian woman was admitted in December 1997 with a heliotrope rash of the face, and pain, stiffness, and weakness of muscles in the upper and lower extremities. The proximal muscle weakness of her arms and legs progressed rapidly. She had difficulty elevating her arms above her head, combing her hair, raising her body from a sitting position, climbing stairs, or exiting a car. She had no lung or joint complains, fever, or signs or symptoms suggestive of Raynaud's phenomenon. There was no family history of connective tissue disease. The patient had been treated for a long period for tinea pedis without effect.

Clinical examination revealed periorbital edema and violaceous erythema of the eyelids, saturated wine-red colored flat-topped papules overlying the skin covering metacarpophalangeal, proximal interphalangeal, and distal interphalangeal joints of the phalanges (Fig. 1), hyperkeratotic erythematous patches on elbows, medial and lateral malleoli (Fig. 2), and ragged cuticles with dilated nail-fold telangiectasia (Fig. 3). The plantar aspect of the feet was rough with hyperkeratosis and scaling. Physical examination of the oral cavity revealed edema of the gingiva and single dilated telangiectases along the lower gingival margin abutting both the dentition and interdental region and on the neighboring mucous membranes (Fig. 4).

A complete blood count and routine chemistries were within normal ranges. The erythrocyte sedimentation rate was elevated (50 mm/h Westergreen), serum creatine kinase (CK) exceeded the normal ranges 15-fold (1803 U/l), and ASAT and ALAT were high (104 U/l and 112 U/l, respectively). Indirect immunofluorescence (IIF) for ANA on HEp-2 cells was positive (> 1:320) and demonstrated a speckled pattern. Antibodies to Jo-1 and SS-A52 kD antigens were detected by ELISA and Western blot. The muscle biopsy specimen showed muscle fiber atrophy, necrosis, and a lymphocytic infiltrate with perifascicular and perivascular localization. EMG demonstrated multiple polyphasic potentials with low amplitude, sharp edges, and short duration, as well as fibrillations typical of myogenic injury. Phototesting found moderate photosensitivity to UVB light. Histopathology of skin biopsy specimens revealed an orthokeratotic, partly atrophic epidermis with focal basal degeneration and pigment incontinence. Obvious thickening of the basal membrane was observed, as well as papillary edema and discrete lymphocytic infiltration in the dermis.

Initially the patient was treated with oral methylprednisolone, 80 mg daily in stepwise decreasing doses with a good therapeutic response. In May 1999, azathioprine (50 mg, two times daily) was added for one month because of a relapse. From February 2002 the disease was controlled with low-dose methotrexate (7.5 mg per week) and 8 mg methylprednisolone, with improved muscle strength. However, the mucosal gingival lesions showed no change during this period. In December 2004, the patient had no skin lesions and well-controlled muscle symptoms, but mucosal telangiectases persisted. In December 2006, she was hospitalized again because of a relapse with muscle involvement and a periorbital rash, prompting treatment with azathioprine 100 daily and intravenous methylprednisolone. She responded well, prompting reduction in therapy. By March 2007, she was being maintained on 15 mg prednisolone daily.

Discussion

DM is an inflammatory myopathy of proximal muscles and cutaneous rash consisting of heliotrope erythema, Gottron's papules, Gottron's sign over bony prominences, photosensitivity, periungual telangiectases, and ragged cuticles (Keining's sign) (1, 2). Our patient fulfilled all of Bohan and Peter's criteria for confirming the clinical, histological, EMG, and biochemical diagnosis of DM in adults (7, 8). Cuticular changes were prominent in our patient. In 1939, Keining (9) first described hyperkeratotic, thickened, roughness-distorted cuticles in a DM patient. In 1958, Gottron (10) noted that the "Keining sign" was a "specific symptom" of disease (11). The cuticles have a disorderly, picked appearance characterized by irregular overgrowth and thickening often associated with periungual erythema, telangiectases, and hemorrhages.

A DM patient may also have hyperkeratotic erythematous patches on the elbows, and a plantar fissured, hyperkeratotic, and scaling eruption with the appearance of "calloused feet." Usually they are diagnosed incorrectly as having pityriasis rubra pillaris (PRP). In 1953, O'Leary (12) first described a patient with DM with generalized erythema and hyperkeratosis of the soles, in whom "a biopsy confirmed the clinical impression of pityriasis rubra pilaris." Later, Christianson et al. (13) reported 270 patients with DM, including O'Leary's patient and another with cutaneous changes clinically resembling PRP but without histological confirmation. In 1969, Wong (14) described 11 patients with general-

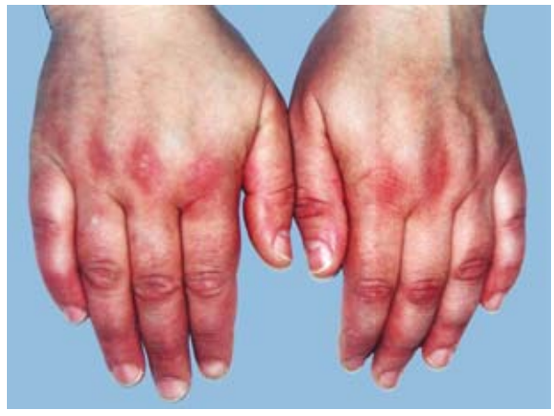

Figure 1: Gottron's papules overlying dorsal metacarpophalangeal, proximal interphalangeal, and distal interphalangeal joints of the fingers.

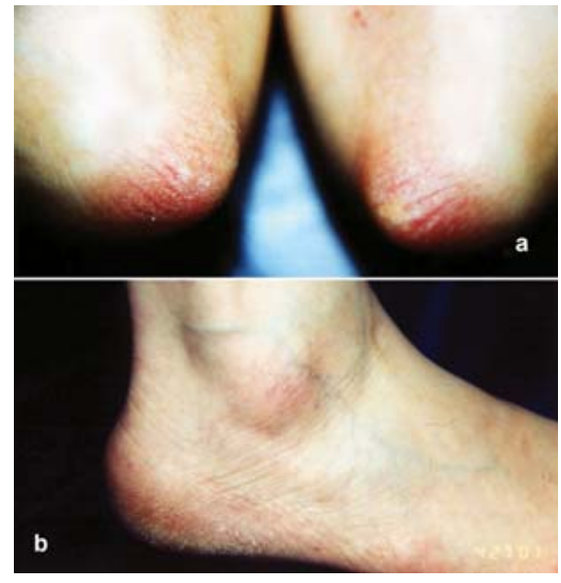

Figure 2: Hyperkeratotic erythematous patches on elbows (a) and erythematous rash on the lateral malleolus, heel, and foot with rough hyperkeratosis and scaling (b).

ized hyperkeratotic follicular papules and hyperkeratotic papules on the palms and soles in a series of 23 DM patients from Southeast Asia, and suggested the influence of racial factors. In 1976, Dupre et al. (15) described generalized spinulosis and hyperkeratotic papules on palms and soles in a 12-year-old child and found features of arrector pili myositis in the cutaneous biopsy specimen. In 1997, Requena et al. reported an 18-year-old woman with DM displaying generalized follicular hyperkeratosis and a yellowish diffuse palmoplantar keratoderma, which histologically proved to be with compact orthohyperkeratosis without evidence of epidermolytic hyperkeratosis (16). Lupton et al. (17) described a 53-year-old woman with DM and clinical findings of PRP, also lacking palmoplantar alterations.

We report on a patient with a classic form of DM of ten years' duration, with oral gingival telangiectases and the presence of circulating anti-Jo-1 antibodies.

Few reports have provided a complete description of oral lesions in DM patients (3, 4, 18–21). Oppenheimer (18) first described mucous membrane involvement in DM in 1903. Later, in a study of 263 DM patients, Schuerman (19) noted that mucosal involvement of pharynx, larynx, and conjunctiva occurred in about 20% of DM patients. In 1942, Keil (4) published details of mucous membrane involvement in DM and described 6 main clinical features: (i) erythema and edema, (ii) hemorrhage, (iii) vesicles, (iv) erosions or ulcers, (v) leukokeratosis (white plaques), and (vi) a

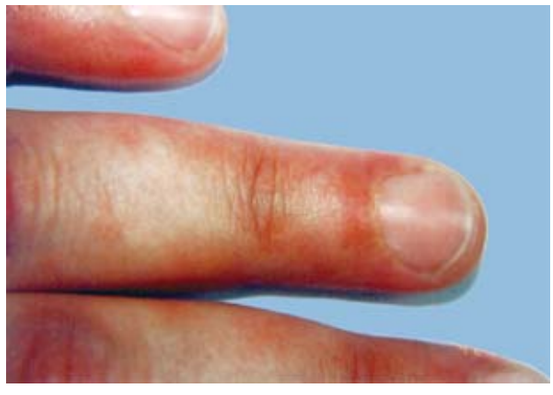

Figure 3: Dilated periungual telangiectases.

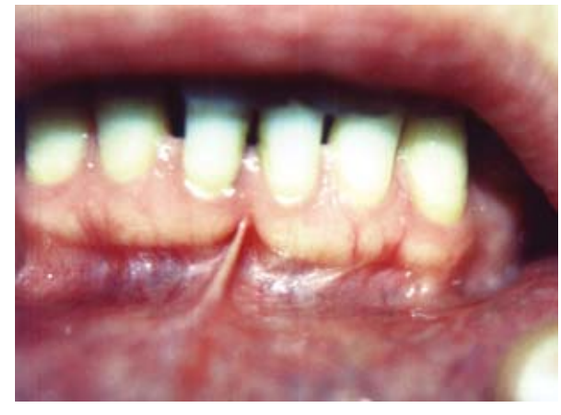

Figure 4: Dilated telangiectases on the lower gingiva and on neighboring mucous membranes.

network of dilated superficial vessels (4). He also focused on the prominent dusky red or bluish erythema on various portions of the oral mucous membrane, including gingiva, where there were closely set telangiectatic vessels. Edema of the mouth, near the gingival margins, is frequently observed; however, edema without erythema was also noted. Vesicles, erosions, and ulcerations of the oral mucous membrane were occasionally found. It has been suggested that leukokeratosis, mainly affecting the buccal mucosa, tongue, and palate, is one of the most important features in the oral cavity DM (3, 4, 20, 21). Leukokeratosis can reflect oral lichen planus, or be seen with mixed connective tissue diseases.

Capillary abnormalities in the gingiva have been proposed as an important diagnostic marker of juvenile DM (3), similar to cutaneous periungual telangiectases in older patients with chronic DM (22, 23). The development of telangiectatic blood vessels scattered over the trunk has also been described in the late stages of juvenile DM (24). Histopathological investigations of the skin and muscles in DM patients have suggested that these findings represented a systemic angiopathy (25–27), and that microvascular injury plays an important role in the pathogenesis of cutaneous lesions of DM (28). One of the earliest changes in DM was the focal depletion of muscle capillaries (26). The DM lesions showed a significant degree of endothelial injury, vascular ectasia, and vascular fibrin deposition (27). C5b-9 complement membrane attack complex deposits were found on the vessel walls of the dermis in approximately 80% of biopsy specimens of DM patients (28). Myositis-specific autoantibodies (MSA) are commonly found in the sera of PM/DM patients (29). It became apparent that MSA defined a group of myositis patients with distinctive clinical features (30). The patients of Ghali et al. (3), with prominent dilated capillaries along the marginal gingiva, were associated with positive findings for ANA in 2 of 5 (40%) cases. The oral vascular lesions and "calloused feet" in our DM patient are associated with the presence of antibodies to histidyl tRNA synthetase (HisRS). The patients with antibodies to HisRS and clinical manifestations of myositis, interstitial lung disease, symmetrical polyarthritis, and Raynaud's phenomenon were described as "Jo-1 syndrome" or "antisynthetase syndrome" (30, 31). The terms "antisynthetase syndrome" and "Jo-1 antibody syndrome" were introduced by Marguerie and Ray (32, 33). During the course of the syndrome, the patients with anti-Jo-1 autoantibodies expressed one or usually more signs of a characteristic spectrum of various organ manifestations including myositis, interstitial lung disease, arthritis, carpal tunnel syndrome, sclerodactyly, Sjögren syndrome, calcinosis, "mechanic's hands," and capillary abnormalities (facial telangiectases and Raynaud's phenomenon) (30–36).

Some have suggested that gingival telangiectases and "mechanic's hands" in patients with DM do not reflect the fundamental histopathological changes of DM (37). Our case could represent a coincidental association of gingival telangiectasia with Jo-1 antibody positive dermatomyositis. However, it may be presumed that telangiectases on the gingiva, face, and trunk are due to systemic microangiopathy, as far as they are evident in DM patients, and are analogs of cuticular vascular abnormalities in the disease.

Recognition of subsets within the spectrum of DM characterized by the aforementioned clinical and serological features is important in establishing a diagnosis and planning treatment, and is of prognostic significance. Oral lesions may be significant not only in identifying subsets of DM (38), but also as an initial manifestation of dermatomyositis with occult malignancy (39). Clinicians should be aware that gingival telangiectases in DM patients have recently been associated with "antisynthetase syndrome."

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