Treatment of rosacea-like demodicidosis with oral ivermectin and topical permethrin cream

Christa Forstinger, MD,a Harald Kittler, MD,a and Michael Binder, MDa,b
Vienna, Austria, and Boston, Massachusetts

A 32-year-old man presented with a chronic rosacea-like dermatitis of the facial skin and the eyelids. The skin disorder had been present for 4 years and was unresponsive to multiple previous treatment attempts. Skin scrapings and a histologic examination of a biopsy specimen from the affected area revealed the presence of numerous Demodex mites. The patient was treated with oral ivermectin and subsequent topical permethrin resulting in complete and rapid clearing of the folliculitis. We believe that this case supports the view that Demodex mites may be pathogenic when they are present in large numbers. Oral treatment with 200 μg/kg ivermectin with subsequent weekly topical permethrin showed impressive treatment efficacy in a case refractory to conventional treatment. (J Am Acad Dermatol 1999;41:775-7.)

Demodex folliculorum, a 0.3-mm long Acarus mite, is the most common ectoparasite of man. Because of its ubiquitous nature, infestation with this organism is recognized as a normal occurrence.1 However, there have been numerous clinical observations linking the presence of Demodex mites at extremely high-density colonization with various skin disorders.

Demodex mites have been suggested as the causative agent in rosacea,2,3 perioral granulomatous dermatitis,4 blepharitis,5 and pustular folliculitis.6 Demodicidosis has been associated with AIDS7 and chemotherapy for malignant diseases.8

We describe a patient with the clinical and histologic features of demodicidosis, in whom rapid and complete recovery was achieved by a single oral dose of the antiparasitic agent ivermectin and subsequent treatment with topical permethrin cream.

CASE REPORT

A 32-year-old white man was seen with a 4-year history of a slowly progressive and pruritic facial eruption. Apart from mild seborrheic dermatitis on the scalp, he had no history of skin disease.

Physical examination revealed a diffuse erythema localized on the cheeks, the nose, the forehead, and the glabella. There were scattered 2 to 3 mm erythematous papules and follicular papulopustules with eczematous lesions and scaling. Blepharitis and 3 external chalazions were noted on the upper eyelids (Fig 1, A and B). The retroauricular region, neck, and chest were not affected. The rest of the physical examination was within normal limits. The patient noted moderate to severe pruritus in the affected regions.

Laboratory findings including routine blood counts and acute phase proteins revealed no abnormalities. Enzyme-linked immunosorbent assay for HIV was negative. A skin test for recall antigens was positive for several antigens.

A 10% potassium hydroxide preparation of skin scrapings from the cheek showed many Demodex mites but no yeast or fungal elements. Histopathologic examination of a biopsy specimen obtained from the left cheek revealed features of both rosacea and seborrheic dermatitis and enlarged hair follicles containing structures of D. folliculorum (Fig 2). A dense infiltrate composed of histiocytes was observed in the dermis. Acid-fast stain was negative and periodic acid-Schiff stain noncontributory.

Because of the long list of previous unsuccessful treatment attempts the patient received a single oral dose of 200 μg/kg of ivermectin (Mectizan; Merck, Inc, Whitehouse Station, NJ). Topical treatment consisted of applications of a bland oil-in-water preparation and was applied for 1 month after treatment with ivermectin.

Within 2 weeks after initiation of treatment the patient noticed a remarkable reduction of pruritus; within 4 weeks there was noticeable reduction in the size and intensity of the inflammatory response (Fig 1, C and D). Skin scrapings were negative for Demodex mites.

To prevent reinfection 5% permethrin cream was prescribed for once-weekly use and was initiated 4 weeks after ivermectin treatment.9 Subsequent examinations during the past year showed excellent control of the disease. Repeated scrapings remained negative for D. folliculorum.
DISCUSSION

The patient in this case report presented with an unusual long-lasting history of rosacea-like dermatitis of the face and eyelids. For 4 years his skin condition had been diagnosed as rosacea, seborrheic dermatitis, or an allergic dermatitis of unknown cause. As a consequence, treatment was attempted with topical and oral antibiotics including metronidazole, topical ketoconazole, etretinate, and topical corticosteroids. Finally, the patient decided to treat his skin condition with homeopathy and diet. This attempt was also without success.

Ivermectin is a semisynthetic product from *Streptomyces avermitilis*, a potent macrocyclic lactone disaccharide antiparasitic agent used to prevent and treat parasitic infestations in man and animals. The compound has activity against internal and external parasites and has been found effective against arthropods, insects, nematodes, filarioidea, platyhelminths, and protozoa. Ivermectin, initially applied extensively to control loiasis and bancroftian filariasis, is increasingly used for the treatment of scabies in immunocompetent and immunocompromised patients. In this case a single oral dose of 200 μg/kg ivermectin effectively led to substantial clinical improvement within 1 month. Repeated skin scrapings remained negative for *Demodex* mites. The 10-year history of the use of oral ivermectin to control onchocerciasis indicates that it is a safe drug. In our case, neither the patient nor the investigators noted any adverse reaction. Meinking et al recently reported that ivermectin showed no residual activity 2 months after a single dose. To prevent reinfestation with...
Demodex mites, 5% permethrin cream was prescribed for once-weekly use.

Ivermectin is not currently approved for the treatment of scabies and other human mite infestations. Prospective clinical trials are planned for the treatment of scabies in humans. In this case ivermectin for this unlabeled use impressed us as a highly effective drug leading to complete clearing of unusually long-lasting demodicidosis in combination with topical permethrin cream.

REFERENCES