Rosacea

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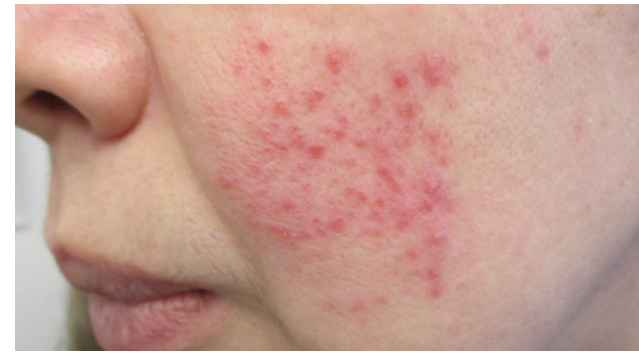
A 42-year-old woman presented with a mild periodic burning and stinging sensation on her face, facial erythema, and red papules on her cheeks that had been present for approximately 3 years. The rash was aggravated by sun exposure and ingestion of spicy foods. She had stopped wearing makeup since the appearance of the rash. She spent a lot of time outdoors gardening and hiking. Her past health history was unremarkable except for atopic dermatitis and seborrheic dermatitis. She was quite withdrawn due to embarrassment about her skin condition.

Physical examination revealed inflammatory papules and tiny pustules on an erythematous background over the cheeks. No comedones were present. The rest of the physical examination findings were unremarkable.



A clinical diagnosis of rosacea was made. The patient was treated with topical metronidazole in the morning, topical ivermectin in the evening, and low-dose doxycycline, 40 mg, once daily for 3 months, after which her skin condition had improved by more than 95%.

Discussion. Rosacea is a common chronic inflammatory skin disorder characterized by a spectrum of clinical signs, including flushing, nontransient erythema, telangiectasia, and inflammatory papulopustules affecting the central face, including the cheeks, nose, eyes, forehead, and chin.[1] Four clinical subtypes have been identified: erythematotelangiectatic, papulopustular, phymatous, and ocular.[2]

Epidemiology. The reported prevalence is 1% to 22% of the adult population.[3,4] The wide variation in the reported prevalence can be attributed to the different diagnostic criteria, different methodology (direct observation vs self-reported surveys), the studied population phototype, and cultural and social perceptions of the condition.[4] The onset is usually between 30 and 50 years of age, although rarely children and adolescents may be affected.[1,5] The condition is much more common in fair-skinned individuals.[1,5,6] In addition, the diagnosis is often missed in patients of color, even when they have symptoms suggesting it.[7] With the exception of phymatous rosacea, women are more frequently affected than men.[1,8]

Etiopathogenesis. Pathogenic factors include dysregulation of the innate immune system as evidenced by an increased baseline expression of cathelicidin and kallikrein 5; a defect in neuroinflammatory mechanisms; reactive oxygen species; abnormal barrier function; solar irradiation; vascular hyperactivity; and local inflammatory reactions to cutaneous microorganisms such as *Staphylococcus epidermidis*, *Bacillus oleronius*, and skin mites *Demodex folliculorum* and *Demodex brevis*.[5,6,8]

Predisposing factors include consumption of alcohol, hot beverages, spicy foods, nuts, chocolate, and cheese; smoking; sun exposure; extremes of temperature; irritation from topical products (eg, waterproof cosmetics); drugs (eg, vasodilators, corticosteroids, nicotinic acid); a family history of rosacea; strenuous exercise; and emotional stress.[5,8,9] Menstruation and pregnancy can also exacerbate rosacea.[4,5]

Histopathology. Histopathologic examination of a classic lesion in erythematotelangiectatic rosacea usually shows dilation of superficial blood vessels and low-grade perivascular lymphohistiocytic infiltrate.[8,10]

In papulopustular rosacea, histopathologic examination of a papule usually reveals prominent perivascular and perifollicular infiltrate in the superficial and mid-dermis consisting of lymphocytes, neutrophils, and plasma cells, while histopathologic examination of a pustule reveals superficial accumulations of neutrophils.[8,10]

Histopathologic findings in phymatous rosacea include sebaceous gland hyperplasia, follicular plugging, telangiectasia, pronounced dermal thickening and fibrosis, and a large amount of dermal mucin.[8,10]

Clinical manifestations. Any of the 4 rosacea subtypes can coexist in a patient. Our patient had predominantly papulopustular rosacea.

Erythematotelangiectatic rosacea is the most common subtype and is characterized by persistent erythema of the central face, transient facial erythema (flushing), erythema congestivum, telangiectasia, skin sensitivity (burning, stinging, tingling sensation), and roughness and scaling of skin.[5,8] The perioral and periocular areas are typically spared.[5]

Papulopustular rosacea, the second most common subtype, is characterized by persistent central facial erythema, along with inflammatory dome-shaped erythematous papules and tiny surmounting pustules on the central face.[4,8] Edema is sometimes present.[11] The inflammation may extend outward to form plaques. Comedones are characteristically absent, and affected patients are significantly older than the typical acne patient.

Phymatous rosacea is characterized by skin and sebaceous hypertrophy with irregular surface nodularities. The affected skin surface tends to be pitted with large, patulous, expressive follicles.[11] Significant telangiectases are often present over the affected area. The nose (rhinophyma) is the most commonly affected site, although the chin/jaw (gnatophyma), forehead (metophyma), eyelids (blepharophyma), and ears (otophyma) may also be affected. This subtype occurs mainly in men.[1,8]

Ocular rosacea may manifest as conjunctival hyperemia, foreign body sensation, burning or stinging, abnormal tearing, light sensitivity, blurred vision, lid margin telangiectases, anterior blepharitis, cicatricial conjunctivitis, and formation of a chalazion or hordeolum.[8,10] Ocular rosacea is significantly more common in the younger age group.[12]

Diagnosis and differential diagnosis. The diagnosis is usually a clinical one and rarely requires histologic confirmation. The differential diagnosis includes acne vulgaris, corticosteroid-induced acneiform eruption, perioral dermatitis, seborrheic dermatitis, chronic photodamage, keratosis pilaris rubra faceii, dermatomyositis, and lupus erythematosus.[5,8]

Complications and prognosis. Rosacea is a potentially disfiguring condition that can be socially embarrassing given its chronic nature and its tendency to affect the face, a highly visible area. The condition can impair one's body image and self-esteem and can have a negative impact on the quality of life.[13] Affected patients are at risk for migraine, depression, dyslipidemia, cardiovascular disease, hypertension, thyroid cancer, and basal cell carcinoma.[4,8,14,15]

Although symptoms may wax and wane and the condition can burn out in some cases, roseacea is usually progressive in the long run.[1] In this regard, men usually progress to the advanced stages of the disease more often than women.[5]

Treatment. There is no cure for rosacea. Treatment is aimed at controlling symptoms. In general, affected patients may benefit from gentle skin cleansing, frequent use of moisturizers/barrier repair formulations, regular use of broad-spectrum sunscreens when outdoors, and cosmetic camouflage.[1,6] Exacerbating factors such as consumption of alcohol, hot beverages, spicy foods, nuts, and cheese, as well as irritating topical products (eg, waterproof cosmetics), sun exposure (especially during hours of peak UV intensity), extremes of temperature, and physical and emotional stress should be avoided if possible.[6,12,16]

For erythematotelangiectatic rosacea, the erythema can be treated with topical brimonidine or topical oxymetazoline, while telangiectases are best treated with a laser or light-based device.[1,6,16-18] Treatment of papulopustular rosacea includes topical metronidazole, topical azelaic acid, topical ivermectin,

topical sulfacetamide-sulfur, oral isotretinoin, and oral tetracyclines, alone or in combination.[1,5,15,17,18] Early cases of phymatous rosacea can be treated with oral tetracyclines or oral isotretinoin, while advanced cases may require treatment with ablative lasers, electrosurgery, or surgical debulking.[5] Patients with ocular rosacea benefit from oral tetracyclines; for significant involvement or lack of treatment response, consideration of referral to an ophthalmologist for evaluation and management should be considered. ■

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