

PHOTO ROUNDS

Red facial rash with “granitos”

A 56-year-old Hispanic woman came to the office distraught about the red rash on her face. The rash has been on her cheeks and nose for 5 years, but over the past 2 weeks she has developed red, mildly pruritic, and very tender papules that she calls *granitos* (the Spanish term for pimples). Foods do not make the rash better or worse, but it gets redder with sun exposure. She had not tried any lotions or sought medical attention until now, when she noticed that the papules were increasing in number but not size.

A few years ago she first noticed small blood vessels becoming more prominent, especially on her cheeks. The lesions have not bled or ulcerated. Her health has been generally good within the

past year, with no recent infections. Review of systems indicated no changes in vision, upper respiratory illness, or systemic conditions. She is being treated for type 2 diabetes and hypertension. She does not have a family history of the same rash. **FIGURES 1 AND 2** show erythema and telangiectasias distributed symmetrically on both cheeks and nose. A cluster of smooth papules were seen under the nose. No scales were noted.

■ **What is the diagnosis?**

■ **How would you treat this condition?**

FIGURE 1 Facial rash



Erythema with telangiectasias on both cheeks and across the nose.

FIGURE 2 Close-up



Close-up of the erythematous rash, with a cluster of papules noted below the nose.

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■ **Diagnosis: Rosacea**

The patient has rosacea. Rosacea is a common inflammatory skin condition characterized by erythema, edema, papules, pustules, or telangiectasias, most notably found on the concave portions of the cheeks, forehead, chin, and nose.¹ Its peak incidence is between the ages of 30 and 50 years.

Because of the marked flushing due to inflammation and capillary hyperreactivity and dilation, the rash has brought a certain degree of social embarrassment for some patients. Moreover, some equate rosacea with excessive alcohol consumption, but this is simply not true.

Although rosacea is a chronic disorder, it does alternate between periods of flare-up and remission. Flares may be triggered by stress, sun exposure, heat, hot drinks and spicy foods, alcohol, exercise, wind, and hot baths. In 50% of all rosacea patients, there are some ocular symptoms, ranging from mild dryness and grittiness to blepharitis, conjunctivitis, and even keratitis.²

■ **Differential diagnosis**

Although the differential diagnosis of rosacea is wide—acne, folliculitis, sarcoid, seborrheic dermatitis, and systemic lupus erythematosus [SLE]—there are unique characteristics that can help distinguish these from rosacea.

For example, the age of onset for rosacea tends to be 30 to 50 years, much later than the onset for acne vulgaris. Similarly, in acne vulgaris comedones are often present, but they are absent in rosacea.

Seborrheic dermatitis tends to produce scales while rosacea does not. Moreover, while both seborrheic dermatitis and rosacea can affect the central facial area, papules and telangiectasias are absent in the former while present with the latter.

SLE can be scarring, does not produce papules or pustules, and it spares the nasolabial folds and nose. Whereas rosacea has a more central face distribu-

tion, folliculitis typically presents with pustules visibly surrounding hair follicles and has associated tenderness to palpation and sometimes severe pruritus.

■ **Causes and pathophysiology of rosacea**

Although the cause of rosacea is unknown, its mechanism is understood to be nonspecific inflammation followed by dilation around follicles and hyperreactive capillaries. Oftentimes these dilated capillaries present as telangiectasias, which collectively exacerbate the red flushing. As the disorder progresses, diffuse hypertrophy of the connective tissue and sebaceous glands ensues.

Rosacea is more common in women than men (FIGURE 3). Men are typically more prone to the extreme forms of hyperplasia, which causes rhinophymatous rosacea (FIGURE 4)—eg, W C Fields's nose.

Alcohol may accentuate erythema, but does not cause the disease. Sun exposure may precipitate an acute rosacea flare, but flare-ups can happen without sun exposure.

A significant increase in the hair follicle mite *Demodex folliculorum* is sometimes found in rosacea. It is theorized that these mites play a role because they incite an inflammatory or allergic reaction by mechanical blockage of follicles.

■ **Stages of rosacea**

There are 4 stages or subtypes of rosacea.

- **Subtype 1: Erythematotelangiectatic rosacea.** This stage is characterized by frequent mild to severe blushing with trace persistent central facial erythema in an individual.

- **Subtype 2: Papulopustular rosacea** (seen in FIGURES 1, 2, AND 3). This is a highly vascular stage that involves longer periods of flushing than the first stage—often lasting from days to weeks. Minute telangiectasias and papules start to form by this stage, and some patients begin having very mild ocular complaints such as ocular grittiness or conjunctivitis.

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Rosacea may be triggered by:

- stress
- sun exposure
- heat and wind
- hot drinks
- spicy food
- alcohol
- exercise

FIGURE 3 Papulopustular rosacea**A woman with papulopustular rosacea.****FIGURE 4** Rhinophymatous rosacea**A man with rosacea and rhinophyma.**

Subtype 3: Phymatous rosacea. The third stage is also called the rhinophymatous stage. It is characterized by deepening shades of erythema and more papules and pustules. In the chronic forms of rosacea, hyperplasia of the sebaceous glands occurs, which forms a thickened confluent plaque of erythema at the tip of the nose known as rhinophyma. This hyperplasia can cause significant disfigurement to the forehead, eyelids, chin, and nose. The nasal disfigurement is seen more commonly in men than women (**FIGURE 4**).

Subtype 4: Ocular rosacea. The final or fourth stage is an advanced variation of rosacea that is characterized by impressive, severe flushing with persistent telangiectasias, papules, and pustules. At this point, more severe forms of conjunctivitis and blepharitis are more full-blown. The patient may complain of watery eyes, a foreign body sensation, burning, dryness, vision changes, and lid or periocular erythema.³

■ Diagnosis and treatment

Diagnostic tests

The diagnosis of rosacea is a clinical one. There is no confirmatory laboratory test. Biopsy is warranted only to rule out alternative diagnoses, since histopathological findings are not diagnostic.

Scrapings may reveal *Demodex folliculorum* infection.¹

Treatment: Target the inflammation

It is important to reassure patients about the benign nature of the disorder as well as explain that its cause is unknown. It may be useful to direct patients to information, such as web sites like those of the National Rosacea Society (www.rosacea.org). Advise patients to keep a daily diary to identify precipitating factors. These can include hot and humid weather, alcohol, hot beverages, spicy foods, and large hot meals. Suggest daily application of sunscreen, which protects against UVA and UVB rays.

Depending on the severity of the skin rosacea, the first-line treatment is an oral antibiotic (tetracycline or erythromycin) and/or topical metronidazole (0.75%–1.0%) twice daily. These antibiotics target the inflammation because rosacea is not a true infection. There is concern in the medical literature about how long-term use of antibiotics can promote drug resistance. Wolf et al⁴ proposed that once a patient's lesions have improved after treatment with full-dose antibiotics, the clinician can consider switching to a lower dose and adding a topical agent such as metronidazole for maintenance.⁴ Studies have shown that 1.0% and 0.75% cream are equally effective.

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Rosacea is not a true infection, but antibiotics are often prescribed to target inflammation

TABLE

Rosacea treatments

TREATMENT	DELIVERY	ODDS RATIO* (MEDICATION VS PLACEBO)
Azelaic acid	Topical	2.45
Metronidazole	Topical	5.96
Tetracycline	Oral	6.06

* Larger number indicates a more effective response to treatment.

Another useful therapy is topical azelaic acid. While the evidence for scabicides in rosacea is limited, some clinicians use these medications for rosacea that is refractory to antibiotics. This is based on the idea that the *Demodex* mite is a causative agent in rosacea. If a patient has severe papulopustular disease refractory to antibiotics and topical treatments, the physician can start an oral isotretinoin regimen at a low dose of 0.1 to 0.5 mg/kg. Pulse-dye laser and electrosurgery can be used to treat the telangiectasias associated with rosacea.

A systematic review by Van Zuuren et al⁵ examined the efficacy of metronidazole, tetracycline, and azelaic acid in treating rosacea. Twenty-nine randomized controlled trials were found. Pooled data from 2 of the trials involving 174 participants indicated that, according to the participants, topical metronidazole was more effective than placebo (odds ratio [OR]=5.96; 95% confidence interval [CI], 2.95–12.06).

There was a definite improvement in the azelaic acid group; the rates of treatment success were approximately 70 to 80% versus 50% to 55% (OR=2.45; 95% CI, 1.82–3.28). Data pooled from 3 studies of oral tetracycline vs placebo involving 152 participants showed that, according to physicians, tetracycline was more effective than placebo (OR=6.06; 95% CI, 2.96–12.42).

Maintenance therapy

Because relapse occurs within weeks in about 25% of patients after the cessation of systemic therapy, topical therapy is usually used in an effort to maintain remission.⁶ The required duration of maintenance therapy is unknown, but a period of 6 months is generally advised. After this time, some patients report that they can keep their skin free of papulopustular lesions with topical therapy applied on alternate days or twice weekly, whereas others require repeated courses of systemic medication. After a few years, the disease may disappear spontaneously.

Patient management

Our patient was counseled about her rosacea and given the web site address for the National Rosacea Organization. She was advised to avoid sun exposure as much as possible and to use sunscreen and a hat to protect her face. She was prescribed tetracycline 500 mg and topical metronidazole to be used twice daily. Follow-up was set for 1 month. At that time, patient will be offered the option of electrocoagulation of her most prominent telangiectasias. ■

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