Rosacea meibomitis associated with rosacea and dry eyes

Commentary by
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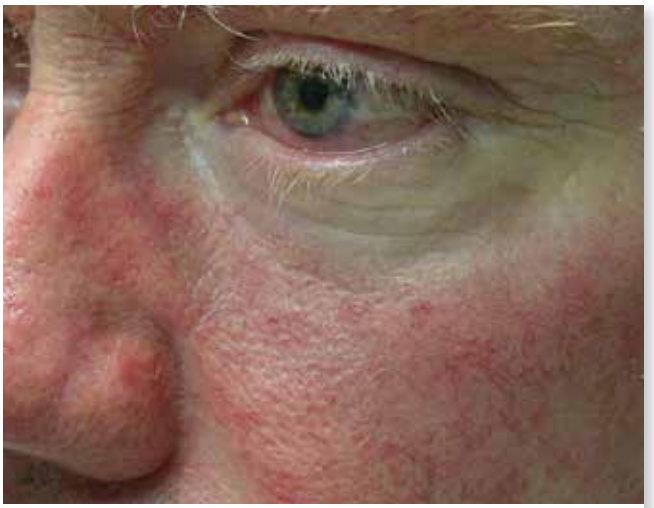

Figure. Rosacea with associated blepharitis.
COURTESY OF DEAN OUANO, MD, NEW BERN, NC, USA.

What treatments are available for this patient with dry eyes and chronic rosacea?

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CASE SCENARIO

Margaret is 52 years old and has suffered from chronic rosacea for several years. She has a permanently flushed and inflamed face and the usual local treatments have provided minimal relief. However, her biggest complaint is that she is constantly bothered by her uncomfortable, dry, irritated eyes.

Margaret has been recently told that she has rosacea meibomitis. She has heard from a friend that there is a new treatment available to increase the natural lubrication of the eye affected by this condition.

What treatments are available to help Margaret?

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COMMENTARY

Unfortunately, Margaret's situation is not at all uncommon. These often inter-related conditions – rosacea, blepharitis/meibomitis and dry eye syndrome – are prevalent and can often coexist (Figure). The impact of these disorders on a patient's quality of life and productivity should not be underestimated.

Although local treatment for the cutaneous component of Margaret's condition has failed and systemic treatment should now be trialled, local ocular treatment may provide additional relief. The plurality of treatments reflects both the medical community's poor understanding of the pathogenesis of these conditions and the lack of a completely effective treatment. Aspects of this topic have been covered in previous *Medicine Today* articles.[1-3]

Systemic treatment

Although dermatological consultation is important, there are excellent online resources available that can aid patient understanding and compliance.[4] Systemic tetracyclines are a mainstay of ophthalmic management of rosacea-associated blepharitis, utilising the anti-inflammatory rather than the antimicrobial properties of these drugs. In practical terms, use of doxycycline in this setting can be effective. Typically, dosages of 50 mg twice a day for a month then tapering to 50 mg once a day for a month are used and, if effective, then reduced to 25 mg once a day or on alternate days. Doxycycline tablets rather than capsules are used to allow for these lower doses. Recently, slow-release doxycycline 40 mg per day has been shown to be an effective and safe therapy for patients with ocular rosacea.[5]

Patients are usually highly motivated and compliant with treatment but compliance is aided by giving the patient very specific instructions and information regarding side effects. As doxycycline is associated quite often with gastrointestinal side effects, advice on how to take this medication is important.

To avoid oesophageal irritation and ulceration, patients should be advised to take doxycycline tablets or capsules either sitting down or standing up, and avoid lying down for some time afterwards. Morning rather than night-time dosing is therefore recommended. Patients should also take doxycycline with a full glass of water.

Although prescribing information for doxycycline recommends that if patients have gastrointestinal upset while taking the medication then they can take it with food or milk, this may decrease its absorption.

Similarly, absorption of tetracyclines can be reduced by antacids and laxatives containing polyvalent cations (iron, magnesium, aluminium and calcium).[6] For this reason a three-hour interval is recommended between ingestion of tetracyclines and these cation-containing products.[6]

Other drug interactions with tetracyclines are well known and recalling the drug history in patients about to start tetracycline treatment has the added advantage of screening for drugs associated with dry eye syndrome.[1]

Tetracyclines can be associated with photosensitivity.[7] Although relatively uncommon, this is important in countries like Australia.

Minocycline is sometimes well tolerated in individuals who have side effects with doxycycline.

Omega-3 fatty acid supplementation (1 to 1.5 mg per day) appears to be beneficial in managing blepharitis/meibomian gland disease.[8,9]

Local treatment

The usual first-line treatments for eyelid inflammation usually involve a combination of local heat application, eyelid hygiene ('lid scrubs') and ocular lubricants.[1,3] Several solutions have been tried, including an isotonic baking soda solution that the author's group prefers to soap solutions.[10,11] Commercially available lid wipes can be useful, particularly for patients who are travelling.

Topical cyclosporin has revolutionised the management of patients with dry eye syndrome[1] and its efficacy is in part due to ameliorating meibomian gland disease.[12,13] Almost certainly, this is the 'new' treatment Margaret has heard about from her friend. The treatment had been available from compounding pharmacies for many years before a commercial preparation became available and has a response rate of about 70% in patients previously resistant to conventional therapy.[1]

The use of the topical macrolide antibiotic azithromycin may represent an additional treatment for patients with ocular rosacea, with a shorter duration of treatment required and absence of gastrointestinal side effects as compared with systemic doxycycline.[14] A commercial preparation is not yet available in Australia, which has limited the use of this treatment. Interestingly, in one study, the efficacy of topical azithromycin has been found to be at least as good as that achieved with systemic doxycycline.[15] In short-term studies, greater efficacy was seen when azithromycin was combined with a corticosteroid, both as topical applications,[16] but corticosteroid side effects may be an issue in longer-term studies.

Avoidance of triggers

There is evidence that certain foods may exacerbate rosacea (and perhaps, by association, blepharitis). Typically, red wine, chocolate and cheese may be trigger factors.[17,18] A list of food, beverages and other factors that can trigger rosacea flare-ups is available on the National Rosacea Society (USA) website (www.rosacea.org/patients/materials/triggers.php).[18]

Emerging treatments

Several emerging treatments for blepharitis are evolving, including those listed below.[19]

- Tea tree oil eyelid scrubs appear to be efficacious in those cases of blepharitis in which *Demodex* mites have been implicated.[20]
- The LipiFlow system delivers thermal pulsation to the eyelids and appears to be efficacious.[21] Its use in Australia has been limited by cost and accessibility.
- There have been reports of efficacy of intraductal probing of meibomian gland orifices;[22,23] however, its use is not widespread and more rigorous testing is required.
- Intense pulsed light therapy has been used by dermatologists to treat patients with facial rosacea and use on the eyelids has followed. Further evaluation is required before use will become widespread.
- Meibomian glands secrete the most superficial, oily layer of the tear film, yet it has not been until recently that lubricants with an oily component have become available. They appear to increase lipid layer thickness, improve tear film stability and relieve symptoms.[24,25]
- A recent study has shown a link between hypercholesterolaemia and blepharitis.[26] It will be of interest to see whether lowering cholesterol levels reduces eyelid inflammation in such cases.

CONCLUSION

Margaret is likely to benefit from a multifaceted, yet staged, approach. Although several newer treatments are emerging, rosacea-associated blepharitis can be challenging for both patient and doctor. MT

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A list of references is included in the website version (www.medicinetoday.com.au) and the iPad app version of this article.

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