



Figure (Rabinovitch, Donnenfeld, and Laibson). Episcleritis was present bilaterally at the initial examination.

On three separate occasions between October 1985 and January 1986, the peripheral infiltrates were noted to be more numerous and more pronounced. This was in sharp contrast to the minimal fluctuations in the appearance of the peripheral subepithelial corneal infiltrates that had been noted previously.

Audiograms were obtained within 48 hours of the worsening of the keratitis. The three audiograms showed progressive hearing loss for the first time in the right ear with moderate sensorineural loss in the high-frequency range. The patient's right-sided hearing loss was treated with high-dose oral prednisone and several parenteral injections of methylprednisolone. On one occasion the intravenous corticosteroid produced a mild improvement in the hearing loss on the right side.

In his original descriptions of nonsyphilitic interstitial keratitis, Cogan<sup>3</sup> described the typical fluctuations in ocular signs and symptoms. He also believed that changes in hearing were probably unrelated to the ocular symptoms.<sup>4</sup> In our patient with Cogan's syndrome, ocular changes preceded hearing loss on three separate occasions. When peripheral corneal infiltrates change in severity in Cogan's syndrome we suggest that an audiogram be obtained immediately and consideration be given to high-dose corticosteroid therapy to prevent further hearing loss.

### References

1. Cobo, L. M., and Haynes, B. F.: Early corneal findings in Cogan's syndrome. *Ophthalmology* 91: 903, 1984.

2. Haynes, B. F., Pikus, A., Kaiser-Kupfer, M., and Fauci, A. S.: Successful treatment of sudden hearing loss in Cogan's syndrome with corticosteroids. *Arthritis Rheum.* 24:501, 1981.

3. Cogan, D. G.: Nonsyphilitic interstitial keratitis with vestibuloauditory symptoms. Report of four additional cases. *Arch. Ophthalmol.* 42:42, 1949.

4. ———: Syndrome of nonsyphilitic interstitial keratitis and vestibuloauditory symptoms. *Arch. Ophthalmol.* 33:144, 1945.

### Transient Myopia Induced by Sulfonamides

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Among the many causes of transient myopia are topically and parenterally administered sulfonamides.<sup>1,4</sup> We treated a 23-year-old woman who had a 24-hour history of blurred vision in both eyes and who had recently used topical and oral sulfonamides. Ultrasonographic A-scan measurements and cycloplegic refractions were taken during and after administration of the medications. An increase in myopia was noted: 4.00 diopters in the right eye and 3.00 diopters in the left eye.

Transient myopia can occur with edema of the ciliary body, lenticular edema, or accommodative spasm. Ciliary body edema results in exaggerated relaxation of the zonules, causing lens thickening and anterior movement of the entire lens.<sup>5</sup> Since the zonules are fully relaxed in this condition, cycloplegia has no effect. The Table shows that changes in lens thickness were responsible for 86% or 87% of the total increase in myopia whereas forward movement of the entire crystalline lens contributed only 13% to 14%. Our A-scan measurements and refractions proved that the primary mechanism for sulfonamide-induced myopia is lens thickening from ciliary body edema.

In contrast, there is no anterior movement of the entire lens in myopia induced by metabolic disorders such as diabetes mellitus and uremia. The increase in myopia with these disorders results from lenticular edema which changes the lens thickness and the index of refraction.

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TABLE  
SULFONAMIDE-INDUCED CHANGES

CHANGES	R.E.	L.E.
Total induced myopia (diopters)	4.00	3.00
Lens thickening (mm)	0.27	0.28
Myopia caused by lens thickening		
Diopters	3.46	2.57
% of total	87	86
Anterior lens displacement (mm)	0.25	0.21
Myopia caused by anterior lens displacement		
Diopters	0.54	0.43
% of total	13	14

In this condition cycloplegia does not change the induced myopia.

Finally, in transient myopia caused by accommodative spasm, the entire myopic change is eliminated with cycloplegia and no anterior movement of the entire lens is present. A combination of cycloplegic refraction and ultrasonographic A-scan measurement of lens position allows the underlying mechanism in transient myopia to be determined and aids in the differential diagnosis. For easy reference a flow diagram is shown in the Figure.

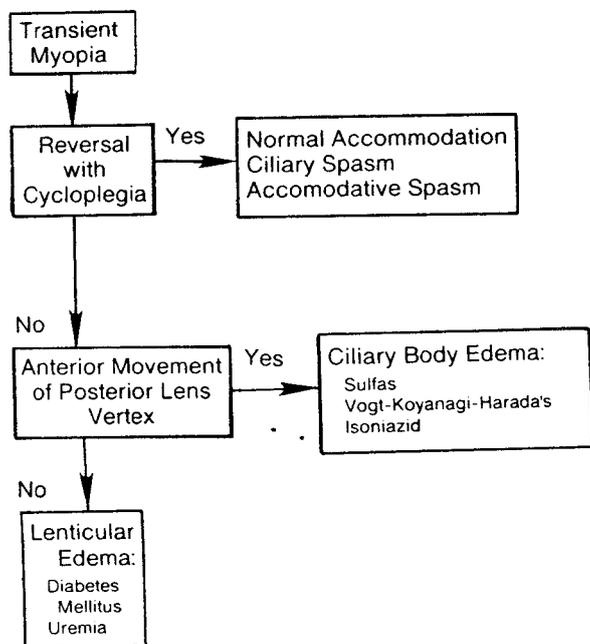


Figure (Hook and associates). Flow diagram for differentiating causes of transient myopia.

## References

1. Fraunfelder, F. T.: Drug-induced Ocular Side Effects and Drug Interactions, 2nd ed. Philadelphia, Lea and Febiger, 1982, pp. 40-43, 359-361, 461, and 462.
2. Bovino, J. A., and Marcus, D. F.: The mechanism of transient myopia induced by sulfonamide therapy. *Am. J. Ophthalmol.* 94:99, 1982.
3. Chirls, I. A., and Norris, J. W.: Transient myopia associated with vaginal sulfonilamide suppositories. *Am. J. Ophthalmol.* 98:120, 1984.
4. Jampolsky, A., and Flan, B.: Transient myopia associated with anterior misplacement of the crystalline lens. *Am. J. Ophthalmol.* 36:81, 1953.
5. Kimura, R., Kasi, M., Shoji, K., and Kanno, C.: Swollen ciliary processes as an initial symptom in Vogt-Koyanagi-Harada syndrome. *Am. J. Ophthalmol.* 95:402, 1983.

## Myiasis Palpebrarum

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The most common cause of cutaneous maggot infestation in humans is the botfly, *Dermatobia hominis*, found in the tropical regions of Central and South America. Ophthalmomyiasis is infrequent, representing less than 5% of all sites, although eyelid involvement is possible<sup>1-4</sup> and can be misdiagnosed as bacterial pre-septal cellulitis.

I examined a woman in Cali, Colombia, who had palpebral myiasis. She recalled an insect bite on the right upper eyelid a few weeks previously. Swelling and pruritus gradually developed. As the discomfort increased, she began having intermittent crawling and wriggling sensations under the skin. In addition to eyelid cellulitis and lymphangiitis (Fig. 1), there was an aperture with a small amount of hemerosous discharge. After gentle probing, this produced a retractile structure.

Petrolatum ophthalmic ointment was applied to the punctal lesion, and shortly afterwards the posterior end of a maggot appeared and