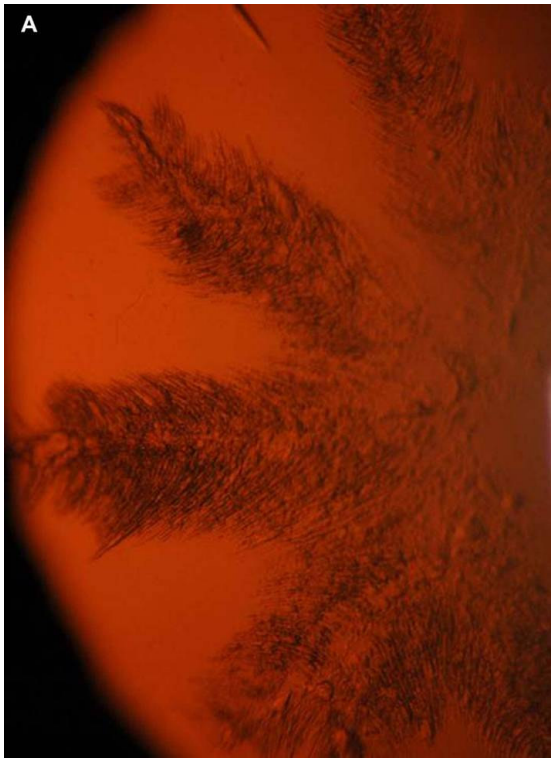
Clinical Image
TheScientificWorldJOURNAL (2008) 8, 1150–1151
ISSN 1537-744X; DOI 10.1100/tsw.2008.139

TheScientificWorldJOURNAL
www.thescientificworld.com

Reversal of Bilateral Rosette Cataracts with Glycemic Control



Hema Ramkumar and Surendra Basti*
Department of Ophthalmology, Northwestern University Feinberg School of Medicine, Chicago

E-mail: hema@md.northwestern.edu; sbasti@northwestern.edu

Received September 11, 2008; Accepted October 5, 2008; Published November 19, 2008

KEYWORDS: diabetic cataracts, Rosette cataract, hyperglycemic cataract, reversible cataract

A 58-year-old woman diagnosed with type-2 diabetes mellitus 3 weeks prior to admission presents to the emergency room with a chief complaint of decreased vision for the past 2 weeks and polyuria. She reports blood sugars in the 400s for the preceding 3 weeks. Her blood glucose on admission was 500 and her HbA1c was 15.5%. Her ophthalmic exam was positive only for a visual acuity of 20/400 and feather-

*Corresponding author.

Published by TheScientificWorld; www.thescientificworld.com

shaped posterior subcapsular lens opacities (Fig. A) bilaterally. Glycemic control was quickly achieved with insulin and she was discharged. At the 2-week follow-up visit, her vision was 20/60 and the cataract had predominantly reversed (Fig. B). One month later, the lens was clear and her vision was 20/30. Two months later, her vision was 20/20. She reports maintaining blood sugars in the 100s since discharge.

The lens equatorial epithelium migrates first to the posterior subcapsular cortex and is affected most by hyperglycemia. Hypoinsulinemia causes sorbitol accumulation in the lens and fluid influx[1]. Cellular hydration delineates lens fibers, which are normally feather shaped, and impairs vision. Administration of insulin and fluids causes conversion of sorbitol to fructose, which diffuses out[2]. Reduced lens osmolarity allows vacuole resorption, cataract reversal, and vision improvement.

Acute hyperglycemia-induced cataracts are reversible with prompt glycemic control[3]. Uncorrected, hyperglycemia causes permanent cataracts that must be managed surgically. With acute worsening of vision due to cataract formation in the setting of hyperglycemia, supportive therapy with glycemic control and observation alone can provide a dramatic improvement in vision in a few weeks.

ACKNOWLEDGMENTS

Dr. Basti's work is supported in part by a grant from Research to Prevent Blindness, New York to the Department of Ophthalmology, Northwestern University Feinberg School of Medicine.

REFERENCES

1. Powers, A.C. (2007) Diabetes mellitus: acute complications of DM. In *Harrison's Principles of Internal Medicine*. 16th ed. McGraw-Hill, New York.
2. Tasman, W. (1992) The lens: biochemistry, glucose metabolism. In *Duane's Foundations of Clinical Opthalmology*. Vol. 2. Lippincott Williams & Wilkins, Philadelphia. Chap. 10.
3. Epstein, D.L. (1976) Reversible unilateral lens opacities in a diabetic patient. *Arch. Ophthalmol.* **94,** 461–463.

This article should be cited as follows:

Ramkumar, H. and Basti, S. (2008) Reversal of bilateral rosette cataracts with glycemic control. *TheScientificWorldJOURNAL* **8**, 1150–1151. DOI 10.1100/tsw.2008.139.