Amiodarone Induced Vortex Keratopathy

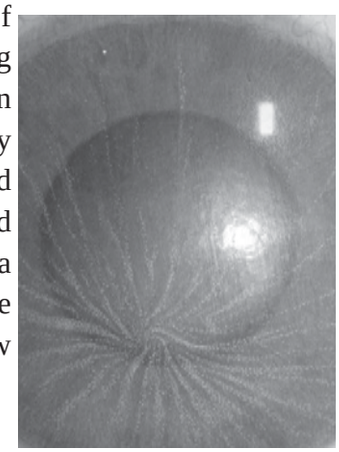
Dr Bhumika Bhola 2nd yr. Post-Graduate
Dr.(col) Zahiruddin Khan, Professor & H.O.D. Ophthalmology
Hi-Tech Medical College and Hospital, Bhubaneswar

INTRODUCTION

Corneal verticillata, also called Fleischer vortex, vortex keratopathy or whorl keratopathy is a condition characterized by corneal deposits at the level of the basal epithelium forming a faint golden-brown whorl pattern1. It is seen most commonly in fabry disease (as angiokeratoma corporis diffusum and alpha - galactosidase A deficiency2) or in case of prolonged amiodarone intake3. The golden brown deposits occurs as a result of the corneal epithelium's growth and repair process4. Apart from this, other rare ocular manifestations include cataract, anterior subcapsular lens opacities, along with retinopathy and optic neuropathy5. We describe a case of amiodarone induced vortex keratopathy with reduced visual acuity, significant glare and minimal haloes.

CASE REPORT

A 60 year old male presented to our department with complaint of reduced visual acuity and significant glare and minimal haloes. The patient had a history of atrial fibrillation and had been on amiodarone therapy, 600 mg daily orally for 1 and a half year which was increased to 1000 mg for next six months. On ophthalmic examination, vision was 6/9 in both eye. Ocular movements were full and free in all the directions of gaze. IOP measured in both eyes by non contact tonometer was 18 mm hg. Slit lamp examination shows golden brown deposits in a whorl like pattern characterizing amiodarone induced vortex keratopathy[figure-1] normally seen in the inferior corneal epithelium. The pupils were normal in size, shape and reaction. Confrontation visual fields were normal. On indirect ophthalmoscopy, media was clear and the fundus was unremarkable. Patient was adviced to stop the medication after his cardiologist opinion. Patient was reassured and was advised to wear sunglasses for symptomatic relief, with follow up annually. At his last follow up, at 8 months after presentation (or after 8 months of discontinuation of the drug), the ocular examination was normal. Visual acuity came back to normal and there was no glare and haloes, most verticillata faded away apart from the presence of very few corneal deposits.



DISCUSSION

There are dozens of medications, materials and disease bi-products that can result in deposits in the cornea. These deposits occur in various levels of the cornea. Corneal verticillata, also called vortex keratopathy, are one type of corneal deposits. In case of our patient, he had developed classic corneal verticillata from amiodarone use. Other drugs which can be responsible for this are- Chloroquine, indomethacin, phenothiazines, atovaquone and isotretinoin6,7. Amiodarone, an anti-arrhythmic agent is concentrated in the tears and appears to be more severe in contact lens wearers8. In one reported case, a gas permeable contact lens wearer presented with amiodarone induced vortex keratopathy9. John dovie, od and Andrew gurwood, od, reported on a case of amiodarone- induced keratopathy with acute onset of bilateral corneal edema and subepithelial cysts that caused decreased acuity, glare and haloes, which persisted for two months after discontinuation of the medication10. Mesut erdurmus, MD, and colleagues reported a rare case of amiodarone- associated

endothelial deposition, seen with a confocal laser scanning microscope, in a patient taking 200 mg daily for six years11. Amiodarone has also been linked to lenticular opacities and optic neuropathy12,13. So, it is important to know well in the history of the patient and the drugs you are taking; as this is essential for a good differential diagnosis and management of eye diseases induced by drugs like this.

REFERENCES

1) Van der Tol, Linda; Sminia, Marijel; Hollak, Carla EM, Biegstraaten, Marieke. Corneal Verticillata supports a diagnosis of Fabry disease in non classical phenotypes. British J of ophthalmology. 2016; 100(1):3-8

2) Karen JK, Hale EK, Ma L. Angiokeratoma corporis diffusum (Fabry disease). Dermatol Online J 2005; 11(4):8

3) Chew E, Ghosh M, Mc Culloch C. Amiodarone induced Cornea Verticillata. Canadian J of ophthalmology. 1982; 17(3):96-9

4) Bron AJ. Vortex patterns of the Corneal epithelium. Trans ophthalmol SOC UK. 1973; 93(0):455-72

5) Joseph P. Take-eye-trouble to heart. Review of optometry. 2007; 144:06

6) Shah GK, Cantrill HL, Holland EJ. Vortex keratopathy associated with Atovaquone. Am J ophthal. 1995; 120(5):669-71

7) Fraunfelder FT, Fraunfelder FQ, Edwards R. Ocular side effects possible associated with isotretinoin. Am J ophthalmol. 2001; 132(3):299-305

8) Rivera RP, Younger BR, Dyer JA. Atypical amiodarone related keratopathy in a pt. wearing soft contact lenses. CLAOJ. 1989; 15(3):219-21

9) Astin CL. Amiodarone keratopathy and Rigid Contact Lens wear. Cont Lens Anterior Eye. 2001; 24(2):80-2

10) Dovie JM, Gurwood AS. Acute onset of halos and glare: Bilateral corneal epithelial edema with cystic eruptions-atypical presentation of amiodarone keratopathy. Optometry.2006; 77(2):76-81

11) Erdurmus M, Selcoki Y, Yagci R, Hepsen IF. Amiodarone-Induced Keratopathy: full thickness corneal involvement. Eye contact lens. 2008; 34(2):131-2

12) Flach AJ, Dolan BJ. Amiodarone-induced lens opacities: an 8 year follow-up study. Arch Ophthalmol. 1990; 108(12):1668-9

13) Feiner LA, Younge BR, Kazmeir FJ, et al. optic neuropathy and amiodarone therapy. Mayo clin.Prac. 1987; 62(8):702-17