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Granular Corneal Dystrophy Type 2 in a Middle-aged Male

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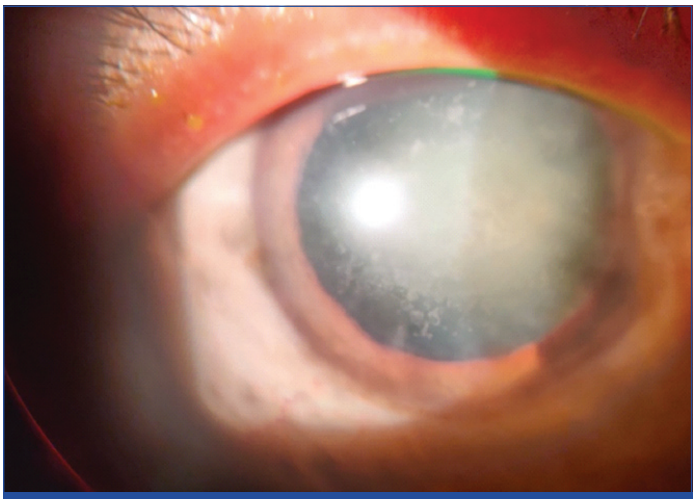
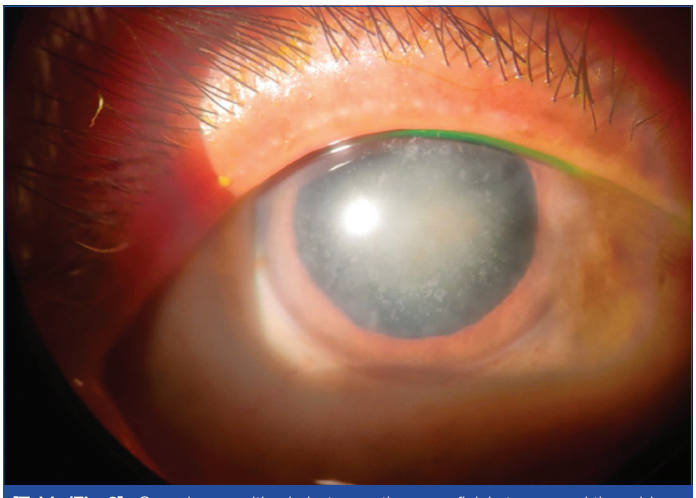
The manuscript presents a 43-year-old male farmer who came to the Ophthalmology Outpatient Department (OPD) for his routine ophthalmological examination. No significant family history was elucidated. On clinical examination, his unaided Visual Acuity (VA) in right eye was 6/24, and that of left eye was 6/18. On slit lamp examination, the cornea showed diffuse, multiple, round to granular, breadcrumb-like opacities involving the sub-epithelium to the deep stroma [Table/Fig-1,2]. Intraocular pressure was 18 mmHg in right eye and 15 mmHg in left eye. Nuclear sclerosis grade 2 with posterior sub-capsular cataract was seen in both eyes. Bilateral fundus examination did not reveal any abnormality. Immunohistochemical testing, light microscopy or genetic testing was not done as patient did not gave consent for the procedure. But the clinical picture of bread-crumb like opacities was highly suspicious of Granular Corneal Dystrophy (GCD) type 2. The patient was advised cataract extraction and underwent phacoemulsification with Posterior Chamber Intraocular Lens (PCIOL) implantation in right eye. The surgery was uneventful and post-operatively patient had an unaided VA of 6/9. Postoperative follow-up was of 15 days but the patient was lost to follow-up.



[Table/Fig-1]: Corneal slit lamp examination of the right eye showed the presence of round to granular, breadcrumb-like stellate opacities.



[Table/Fig-2]: Granular opacities in between the superficial stroma and the mid-stroma along with nuclear sclerosis grade 2 and posterior sub-capsular cataract.

DISCUSSION

The prevalence of Corneal Dystrophies all over the world varies from 1.3% to 4% [1,2]. According to a recent study conducted in southern India, prevalence of GCD in India is 4.7% [3]. According to a Korean study, prevalence of GCD type 2 is 11 affected persons per 10,000 population [4]. GCD is a type of corneal stromal dystrophy. In this condition which is an autosomal dominant disease, patients present with distinctly demarcated bread crumb like opacities in the corneal stroma [3].

GCD type 2 is seen most commonly in the second decade of life. Homozygous patients have an earlier onset in the first decade of life whereas heterozygous patients have a late onset in the second decade of life. Patient usually does not complain of any visual disturbances. Patients rarely complain of any Recurrent Corneal Erosion (RCE) symptoms. In heterozygous patient, the corneal opacity has a slow progression with little or no visual deterioration [5]. Histologically, there was an abnormal deposition of eosinophilic granules in the stroma of cornea which stained with Masson Trichrome/Congo red.

Patients need to be educated about RCE symptoms and its after-effects. Usually, GCD does not require any treatment. In most cases, bandage contact lenses, pressure patching, hyperosmotic sodium chloride drops and artificial tear drops are sufficient. For RCE, first line of management is topical steroids, topical immunomodulators and topical autologous serum. The second line management agents are topical and oral macrolides. Surgical management is an important treatment modality to reduce the occurence of RCE complains and improves visual acuity, but recurrence of the opacities in the graft has been observed within a year of penetrating keratoplasty [6].

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