



## Triple Trouble: Quite a Struggle!!!

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### Abstract

Glaucoma remains to be the second most common eye problem globally and in India too. The treatment of glaucoma is associated with the development of the dry eye. In this report, we bring forth the case of a female who is a diagnosed case of rheumatoid arthritis and is suffering from both glaucoma and dry eyes. We intend to highlight the challenges of treating such cases and the approach to them.

**Keywords:** Glaucoma; OPD; Rheumatoid Arthritis (RA)

### Introduction

Glaucoma remains to be the second most common eye problem globally and in India too.

### Case Report

A 45-year old lady presented to the OPD with complaints of severe dry eye for which she was putting hydroxypropyl methylcellulose eye drops and topical cyclosporine 0.05% eye drops. Moreover, she was also being treated for open-angle glaucoma for the past seven years and was currently on Timolol maleate 0.5% and Brimonidine tartrate 0.2% eye drops. There was no history of any associated trauma, ocular surgery, exposure to radiation, allergy, or any difficulty in swallowing food. The medical history revealed that she was a diagnosed case of active rheumatoid arthritis and was on treatment. On examination, there was tylosis present along with decreased lustre of the cornea and conjunctival congestion in both eyes (Figure 1a and 1b). The BCVA was 6/12 in OD while 6/9 in OS. The fundus examination showed a circular disc with a deep cup of 0.7 - 0.8:1 OD and 0.6 - 0.7:1 OS with bipolar notching and

NRR thinning. The tear film break up time (TBUT) was less than 6 seconds OU. The Schirmer's test showed a reading of 5 mm and 6 mm in right and left eye respectively. The gonioscopy revealed open angles in both eyes with IOP ranging between 18 - 20 mm Hg. The color vision and perception of contrast sensitivity was normal.

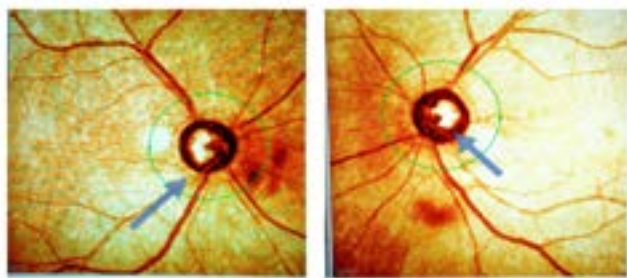
The patient was then added autologous serum eye drops for 7 days and sodium hyaluronate eye 0.1% drops along with the previously used drugs. Her anti-glaucoma drug was changed into preservative-free Brimonidine (0.2%) eye drops. She also underwent cauterization of the lower puncta. She was kept on regular follow up for IOP monitoring and ocular discomfort. Post one month, the patient was symptomatically better.

### Discussion

Rheumatoid arthritis (RA) is an autoimmune systemic disease that is characterized by asymmetrical, destructive, deforming, inflammatory polyarthropathy, in association with a spectrum of extra-articular manifestations and circulating antiglobulin anti-



**Figure 1:** (a) Tylosis (b) Conjunctival congestion (blue arrow), decreased corneal lustre.



**Figure 2:** Nasalization of vessels (blue arrow); Deep and increased cup (black arrow), NRR thinning.

bodies, termed rheumatoid factors. The dry eye remains to be one of the most common ophthalmic manifestations of RA, with an incidence of 15 - 25% [1]. The dry eyes caused due to RA are usually classified as secondary Sjogren's syndrome. Nearly 40 - 50% of glaucoma patients are diagnosed with dry eye syndrome [2] and women are more prone to it in comparison to men. Disease-modifying anti-rheumatic drugs (DMARDs) like Cyclosporin A, or a monoclonal antibody to TNF-alpha such as infliximab are the systemic immunosuppressive agents that aid in improving tear production and resolving keratoconjunctivitis. Since they are costly, usually Methotrexate along with hydroxychloroquine and systemic steroids are used. Hence, a vicious cycle continues to exist in these patients where rheumatoid arthritis leads to dry eye and its treatment may lead to glaucoma; in turn, the anti-glaucoma drugs may further add to the agony of dry eye.

In situations like these, the (a) decreasing visual prognosis, (b) increased discomfort, (c) increased cost of treatment (d) repeated

follow-ups and (e) cosmeses remain the main area of concern for the patients. However, for the treating physician, though managing the dry eye syndrome is important for the patient's comfort and long-term health of the surface of the eye; but addressing the glaucoma treatment almost always takes precedence over treating the dry eye disease, which adds to the patient's cause of despair.

The treatment for dry eye include artificial tears, most often in the form of eye drops and gel, eyelid cleansing and warm compresses to minimize inflammation; using a humidifier, avoiding air/wind blowing directly onto the eyes, and taking frequent breaks while reading; punctual cautery and punctual plugs; doxycycline to treat lid inflammation; cyclosporine and Lifitegrast medication drops to suppress inflammation and mild steroids to suppress inflammation. However, a little modification in the management of dry eye in patients with glaucoma is needed. As Benzalkonium chloride (BAK) is one of the commonest used preservatives in the eye drops which causes tear film instability, goblet cells loss, conjunctival squamous metaplasia, and corneal epithelial barrier disruption [3]; one may switch to preservative-free or BAK free anti-glaucoma medications or a combination of eye drops to reduce the number of preservatives instilled on the ocular surface to overcome these adverse effects.

## Conclusion

A vicious cycle exists between the treatment of dry eye and glaucoma. Since both are chronic disease, both require long term treatment. In cases like these, preservative-free drugs play a major role in decreasing and adding on the irritation and ocular surface discomfort. This subset of patients requires proper counselling with ophthalmological assessment including fundus examination at regular intervals. If the cumulative dosage of chloroquine exceeds more than 300g for 5-year, then chances of ocular complications are more. The same thing holds good for hydroxychloroquine use for more than 7 years, the dose of more than 6.5 mg/kg/dose with a cumulative dose of more than 1000g can lead to complications. Hence, a close follow-up is very much recommended in these patients.

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