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Toxoplasmic Retinochoroidal Granuloma with Macular Pucker: A Case Report

ABSTRACT

A 19-year-old girl presented to us with diminution of vision in the right eye (FC at 1 m), recurrent pain and redness, treated as a case of anterior uveitis for 4 months. Posterior segment examination revealed vitritis with a granulomatous epiretinal membrane (ERM) over the macula. She was also found to have IgG antibodies positive against toxoplasma. Anti-toxoplasma treatment was initiated, and a vitrectomy with ERM peeling was performed. The peel was sent for histopathological examination and was found to be positive for histiocytes. Later, an intravitreal dexamethasone implantation was done. Her best-corrected visual acuity was 6/9, approximately 12 months after the initial diagnosis. A case of toxoplasmic retinochoroiditis can masquerade as a case of chronic anterior uveitis, and benefits from combined medical and surgical treatment.

Key words: Disease transmission, infectious diseases, retinochoroidal granuloma

INTRODUCTION

Ocular toxoplasmosis is a potentially blinding necrotizing retinitis with a progressive and relapsing course. It presents as a localized retinochoroiditis in typical cases. Worldwide, it is the most common cause of posterior uveitis. It is a zoonotic infection with cat as the definitive host and man and other animals as intermediate hosts.[1]

CASE REPORT

A 19-year-old girl presented to our institute with gradual, progressive diminution of vision in the right eye for the past 4 months, accompanied by recurrent pain and redness. She reported no history suggestive of trauma, underlying systemic illnesses, recent changes in health, family history of eye disease, or history of such an episode. She was noted to have undergone several tapering courses of oral and topical steroids coupled with topical cycloplegics and broad-spectrum antibiotics at multiple facilities.

On ophthalmic examination, the best-corrected visual acuity in the right eye was reduced to FC at 1 m. The conjunctiva was congested and she had a Grade V relative afferent pupillary defect. There were no cells or flare in the anterior chamber, and the rest of the ocular examination was within normal limits. The left eye was unremarkable. The systemic examination was normal.

The ocular fundus examination revealed mild vitritis with a granulomatous epiretinal membrane (ERM) over the macula, approximately 7.5 mm × 2.5 mm in dimensions (extending 5 disc diameters temporal to the optic disc). Two focal lesions were also observed inferior to the disc [Figure 1a]. The contralateral fundus was normal.

The patient underwent comprehensive infectious laboratory workup which revealed significantly raised anti-toxoplasma IgG antibody titer (13.2 IU/ml; reference level: <1.3 IU/ml), while other tests were found to be normal. Furthermore, ultrasound B-scan of the right eye showed vitreous echoes with marked macular thickening, the latter finding being confirmed on optical coherence tomography (OCT) [Figure 1b].The patient was, therefore, definitively treated as a case ocular toxoplasmosis.

We started the patient on the classical triple therapy with oral corticosteroids (40 mg/day in tapering doses), pyrimethamine (50 mg daily for 4 weeks), and sulfasalazine (1 g daily for 4 weeks), as a result of which the peripheral lesions were found to resolve. Tablet folinic acid (5 mg thrice a week) was added to prevent bone marrow suppression secondary to chemotherapeutic agents. Complete blood count and platelet counts were done on a weekly basis to monitor potential side effects. Following commencement of the antibiotic regimen, there was minimal improvement in vision.

Although the peripheral lesions were found to respond to treatment, the patient presented with a persistent granulomatous ERM over the macula even after the antibiotic regimen. This led to stagnation of the response to therapy. Vitrectomy with

Sailie Shirodkar[1], Nagendra B. Shah[2]

[1]Department of Ophthalmology, Bhabha Hospital, Mumbai, Maharashtra, India, [2]Department of Pohtholmology, Bombay Hospital Institute of Medical Sciences, Mumbai, India.

Corresponding Author:
Sailie Shirodkar, Department of Ophthalmology, Bhabha Hospital, Mumbai, Maharashtra, India.
E-mail: sailie.shirodkar@gmail.com

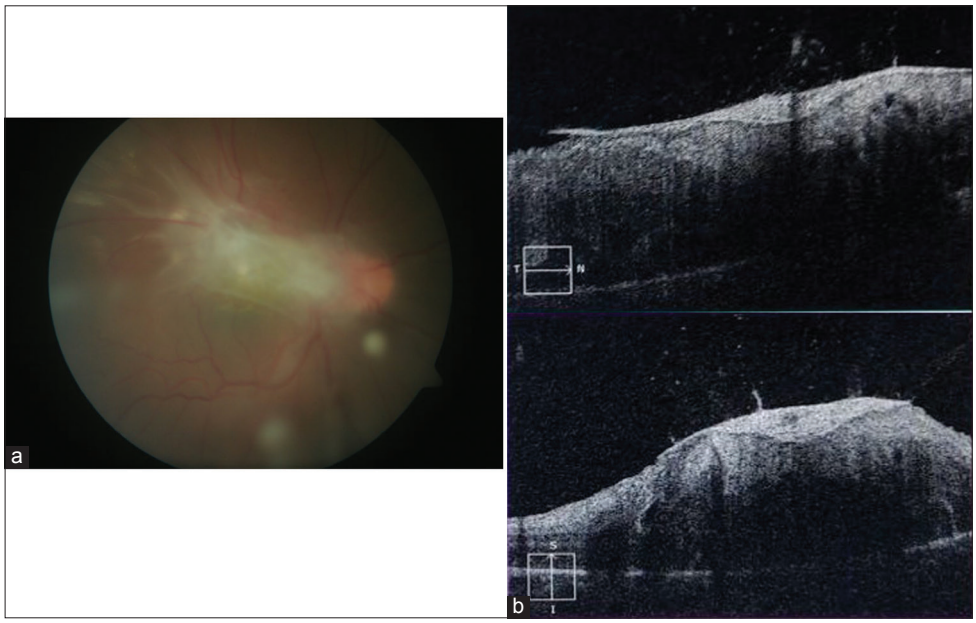

Figure 1: (a) Ocular fundus examination showing vitritis with a granulomatous episcleral membrane and (b) OCT showing marked macular thickening

ERM peeling was done not only to augment the response to treatment but also to prevent further complications related to the condition – including, but not limited to, retinal detachment, persistent vitreous opacities, and extensive retinochoroidal scarring, especially over the macula.[2,3]

Postoperatively, the membrane sent for histopathological examination was found to be positive for histiocytes, while the pharmacotherapy was continued.

The patient's vision showed a dramatic improvement to 6/24 in the 4 weeks following surgery. However, repeat ocular fundus examinations and OCT demonstrated a residual ERM [Figure 2]. In an effort to further the improvement in vision, the decision was made to place an intravitreal dexamethasone implant (Ozurdex 0.7 mg) in the 3rd post-operative month. On repeat fundus examination and OCT 2 weeks following this, the macular involvement was found to have reduced substantially with a proportionate rise in vision [Figure 2a and 2b]. The patient's last documented best-corrected visual acuity (12 months after the initial diagnosis) was 6/9.

DISCUSSION

The diagnosis of ocular toxoplasmosis is usually evident based on typical clinical presentation in the posterior segment. However, "spill-over" anterior uveitis is common among these patients, and therefore, it may masquerade as a case of anterior uveitis. The variable presentation mandates a thorough work-up to arrive at an accurate diagnosis. When the clinical diagnosis cannot be made definitively by a funduscopic examination, serological tests including serum anti-toxoplasma titers of IgM and IgG may be needed to support the diagnosis.

Toxoplasmosis retinochoroiditis is often self-limiting in most immunocompetent individuals. Antibiotic medications are used under circumstances of aggressive inflammation or when there are lesions that threaten the optic nerve or macula. It is documented that toxoplasmosis retinochoroiditis is rarely associated with retinal tears and recurrent retinal detachment (RRD). The incincidence of RRD following choreoretinal inflammatory disease has been reported to be 1.7%.[1,4]

Therapeutic regimens include triple therapy (pyrimethamine, sulfadiazine, and systemic corticosteroid), quadruple therapy (triple therapy plus clindamycin), trimethoprim/sulfamethoxazole, spiramycin, minocycline, azithromycin, atovaquone, and clarithromycin.[5,6]

No regimen has proven superior. However, when systemic side effects are of concern, it is also possible to treat with intravitreal antibiotics such as trimethoprim/sulfamethoxazole and clindamycin as alternative therapies.[5,7]

CONCLUSION

Toxoplasmic retinochoroiditis has a variable presentation. Most cases are self-limited; however, severe cases with macular involvement may necessitate treatment.

The mainstay of therapy is to treat the infection with drugs active against the infective agent and to protect the delicate surrounding retinal structures from the effects of reactive inflammation. However, there is no consensus as to what the best treatment for toxoplasma retinochoroiditis might be at present.

Surgical treatment serves no purpose in acute cases, but may be indicated later in the course of the treatment to prevent

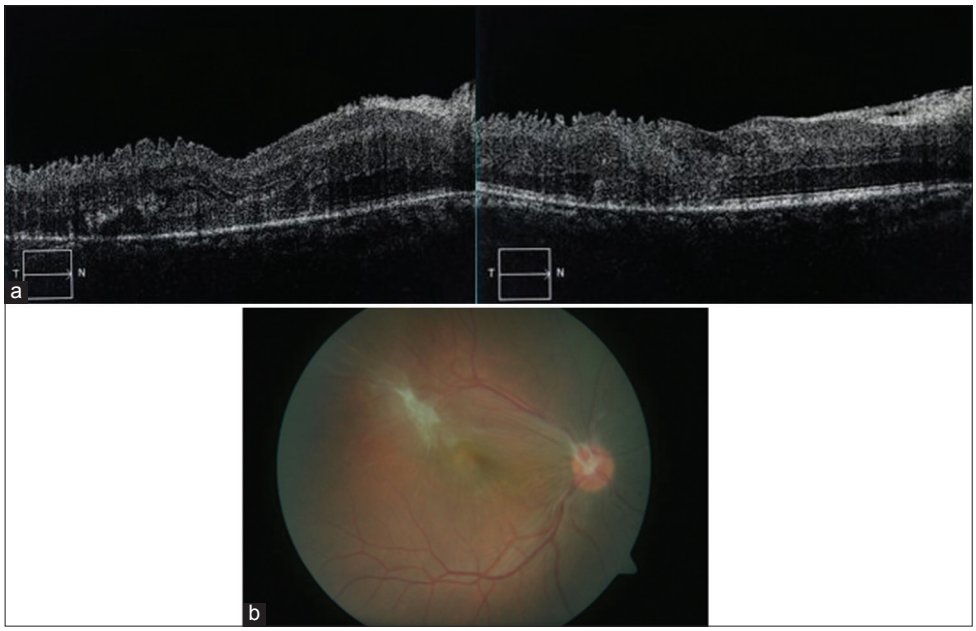

Figure 2: (a) Optic fundus examination and (b) OCT documenting improvements after treatment

complications, thereby stressing the need for a combined medical and surgical approach in these cases.

This case, therefore, highlights the importance of thorough clinical evaluation, including detailed evaluation of the posterior segment in all cases of anterior uveitis. It also highlights the necessity of a combined medical and surgical approach in some of these cases to prevent secondary complications.

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