



Toxocariasis

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Introduction

Toxocariasis is a parasitic disease of the humans caused by the larvae of *Toxocara canis* (dog or fox roundworm) or *Toxocara cati* (cat roundworm). The eggs from these roundworms are shed in dog and cat faeces and infect the local environment. The humans may get accidentally infected by eating food contaminated with soil or uncooked food. This condition usually affects children in close contact with pets. Ocular toxocariasis may present with three clinical manifestations: Covert toxocariasis (subclinical febrile illness in children), visceral larva migrans (caused by migration of second-stage larvae through internal human organs) and ocular larva migrans (ocular toxocariasis). Ocular toxocariasis is an isolated disease and is typically unilateral. Diagnosis is largely clinical and is characterized by three forms: a peripheral granuloma, posterior pole granuloma and endophthalmitis. The migration of the larvae into the retina causes granuloma formation, seen as a dense yellowish-white mass in the periphery or posterior pole, accompanied by dense vitritis. A radial fold is often seen extending from the granuloma to the optic disc. Other rare manifestations may include optic neuritis, vasculitis, or neuroretinitis. Visual loss occurs due to tractional

retinal detachment. Other complications include epiretinal membrane, cataract, and choroidal neovascular membrane. Oral or periocular steroids are recommended for severe inflammation. The role of anti-helminthic drugs is not clear. Small granulomas without vitritis may be left alone. Pars plana vitrectomy is indicated in eyes with tractional complications such as retinal detachment or epiretinal membrane.

Case 1: Ocular Toxocariasis with Peripheral Granuloma and Subretinal Fibrosis

A 12-year-old boy presented with decreased vision in left eye since 7 months. The visual acuity was 6/6 in right eye and counting fingers in left eye. The right eye was normal and there was a relative afferent pupillary defect in left eye. Fundus examination of left eye revealed dense vitritis, a peripheral granuloma, and a fibrous band extending from granuloma to the disc (Fig. 1). He underwent pars plana vitrectomy in left eye. The media improved but the vision remained counting fingers at 3 months follow up with atrophy of retina and subretinal fibrosis (Fig. 2).

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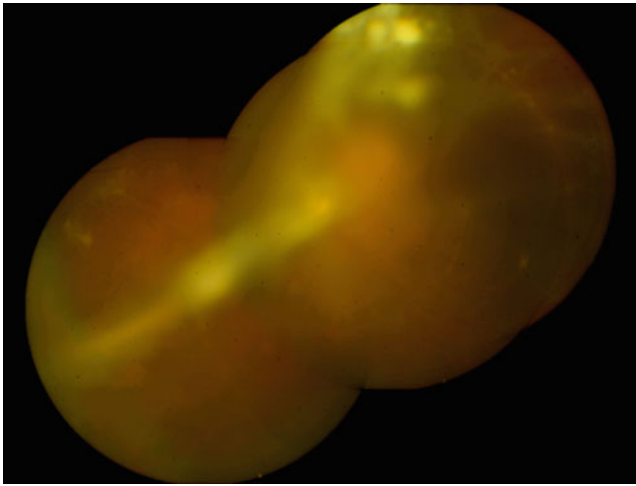


Fig. 1 Fundus photograph of left eye showing dense vitritis, a peripheral granuloma and a fibrous band extending from granuloma to the disc

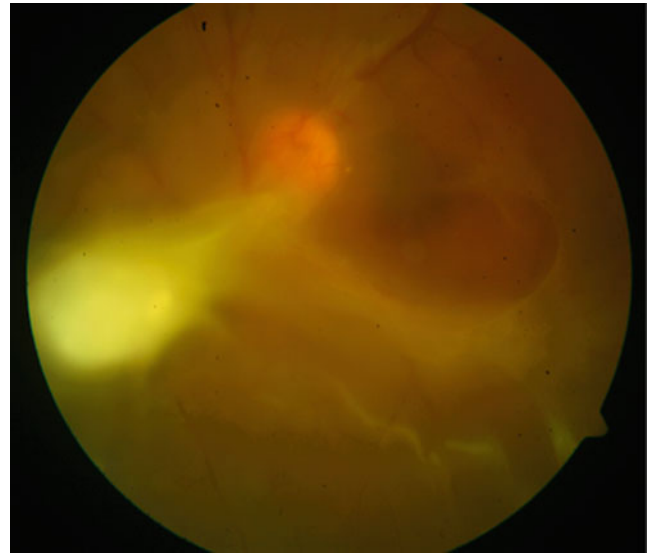


Fig. 3 Fundus photograph showing dense vitritis and a granuloma lying nasal to the disc causing tractional retinal detachment



Fig. 2 Fundus photograph at 3 months following vitrectomy showing the residual retinal fold extending from peripheral granuloma to the disc with atrophy of retina and subretinal fibrosis



Fig. 4 Fundus photograph following pars plana vitrectomy and cyst excision showing flattening of the retinal fold

Case 2: Ocular Toxocariasis with Disc Granuloma

A 19-year-old female presented with counting fingers vision in left eye since 6 months. The right eye was normal. Left eye had vitreous cells, and a granuloma lying nasal to the disc causing tractional retinal detachment (Fig. 3). Pars plana vitrectomy with cyst excision led to visual improvement to 6/12 at 8 months follow up. The retinal fold flattened significantly (Fig. 4). Cytological examination of the vitreous fluid

revealed numerous eosinophils, macrophages, lymphocytes, and degenerated cells.

Case 3: Ocular Toxocariasis with Disc Granuloma

A 13-year-old girl presented with diminution of vision in right eye since 15 days. She had 6/60 vision in right eye. The left eye was normal. The right eye had a relative afferent pupillary defect,

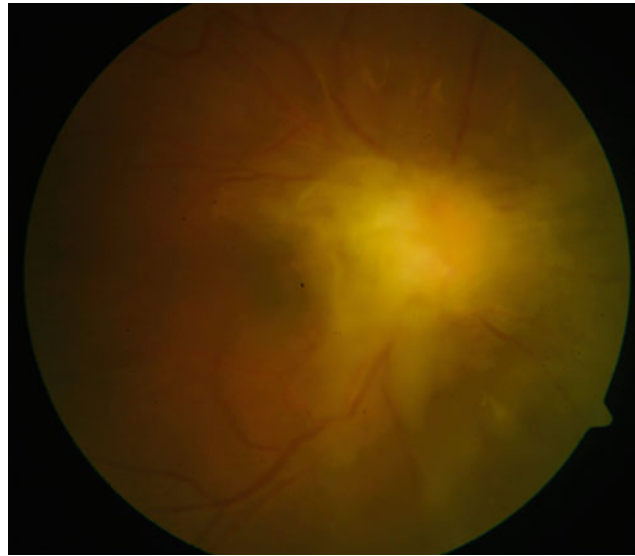


Fig. 5 Fundus photograph showing dense vitritis and a granuloma over the optic disc with peripapillary tractional retinal detachment



Fig. 6 Fundus photograph following pars plana vitrectomy showing resolution of tractional retinal detachment

vitreous cells, and a granuloma over the optic disc with peripapillary tractional retinal detachment (Fig. 5). Pars plana vitrectomy led to resolution of tractional retinal detachment (Fig. 6). The visual acuity was 6/18 in right eye at 1 year of follow up.

Key Points

- Ocular toxocariasis is typically unilateral with significant visual loss, usually affecting children.
- Accidental ingestion of eggs of *Toxocara* roundworms by humans causes this disease.
- Retinal invasion leads to granuloma formation and significant vitreous inflammation.
- Typically, the granuloma forms in the periphery or posterior pole. Rarely, endophthalmitis may occur due to intraocular death of larvae.
- A radial fold of retina between the disc and granuloma is highly characteristic of toxocariasis.
- Vitrectomy is indicated for tractional retinal detachment or epiretinal membrane.

Suggested Reading

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