Optical coherence tomography in presumed subretinal Toxocara granuloma: case report

Tomografia de coerência óptica em granuloma sub-retiniano por Toxocara: relato de caso

INTRODUCTION

Visceral larva migrans was first described by Beaver et al., to define a clinical syndrome of man characterized by hepatomegaly, fever, chronic eosinophilia and hypergammaglobulinemia(1). The common roundworms, Toxocara canis and Toxocara cati are still the most frequently incriminated agents. Transmission to human beings occurs by ingestion of contaminated soil or eggs on hands and fomites. Direct contact with infected dogs and cats plays a secondary role in transmission because eggs need an extrinsic period to become infective. Neither worms nor eggs are eliminated in human feces and because larvae are difficult to detect in tissues, diagnosis is mostly based on serology(2).

There are two forms of ocular Toxocara: visceral and ocular. Ocular toxocariasis is rare and therefore the spectrum of clinical disease is difficult to establish(3). Toxocara canis is a nematode infection with potentially serious consequences for vision(4), and is typically found in children below the age of sixteen(5). Wilkinson and Welch classified ocular Toxocara into: diffuse endophthalmitis, posterior pole granuloma and peripheral(6).

Probably the most common presentation is the granuloma found in the posterior pole or at the periphery(7). Standard diagnostic methods for ocular Toxocara are fundoscopy, ultrasound and serologic tests. We studied the features of a presumed subretinal Toxocara granuloma using optical coherence tomography - OCT.

CASE REPORT

A 5-year-old boy with eye deviation for nine months was referred for examination. Both physical examination and a complete blood cell count...
with differential count were normal. Visual acuity was 20/20 in the right eye and counter fingers at 1m in the left eye and a medium angle endotropia was noticed. The anterior segment was quiet and the intraocular pressure was normal. An ill-defined whitish elevated lesion associated to smaller satellite lesions with a serous retinal detachment were observed in the macula of the left eye (Figure 1). No abnormalities were found in the right eye.

The patient’s pupils were dilated with 0.5% cyclopentolate and 2.5% phenylephrine eye drops instilled at least 30 minutes before examination. Topical anesthetic eye drops (0.1% proximetan chloride) were instilled immediately before examination. After the examination, the patient was submitted to OCT evaluation. The fovea was measured four times for the 6 radial scans. Fundoscopy, classification and OCT were performed on the same day.

Upon OCT examination, a central highly reflective subretinal round mass and another one smaller satellite mass structure, surrounded by subretinal fluid, were seen protruding above the retinal pigment epithelium in the macular area of the left eye (Figure 1).

A clinical diagnosis of ocular toxocariasis was made and confirmed by the presence of circulating IgG antibodies by the enzyme-linked immunosorbent assay (ELISA).

**DISCUSSION**

Recently it was demonstrated that the OCT is useful for the differential diagnosis between subretinal *Toxocara* granuloma and idiopathic choroidal neovascularization(8).

The *Toxocara* larva is known to migrate across the retina, but the layer in which it migrates and its effect on the retina was unknown(9). OCT images of our patient demonstrated that the presumed *Toxocara* granuloma had a subretinal extension with elevation and an ill-defined yellowish border associated with atypical smaller satellite lesions as well as serous retinal detachment. The foveal involvement was clearly demonstrated by optical coherence tomography (Figure 2A). Cross-sectional optical coherence tomography images may increase understanding of the pathophysiology of presumed subretinal *Toxocara* granulomas and help in the clinical management of the retinal complications related to this disease.

**RESUMO**

Estudar os achados em tomografia de coerência óptica num caso de granuloma por *Toxocara*. Paciente com uma lesão macular cicatricial no olho esquerdo foi submetido a retinografia e tomografia de coerência óptica. Nas imagens de tomografia de coerência óptica, o granuloma aparece como uma imagem de uma massa arredondada hiper-reflectiva acima do epitélio pigmentar e abaixo da retina neurosensorial acompanhando de duas lesões satélites menores. A tomografia de coerência óptica pode nos ajudar a melhorar o entendimento da fisiopatologia do granuloma retiniano do *Toxocara*, seu diagnóstico e conduta.

**Descritores:** Granuloma/diagnóstico; Doenças retinianas; Infecções oculares parasitárias; Tomografia de coerência óptica/métodos; *Toxocara*; Relatos de casos [tipo de publicação]

**REFERENCES**

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