IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 7, Issue 6 Ver. IX. (Nov.-Dec.2018), PP 78-81
www.iosrjournals.org

Ocular Toxoplasmosis in a 30-Year Immunocompetent Congolese Woman

Makumyaviri Mbuiro Julien[1], Makumyaviri Sekera Justine-Liliane1, Omewatu Mungomba Jacques-Beaudry[2], Mwilambwe Ngoy Steve[3], Iye Abial Sandra[1], Tshamba Mukubayi Thierry[4], Yogolelo Asani Bienvenu[1], Chenge Borasisi Gabrielle[1].

[1]*University of Lubumbashi (D.R.C), School of Medicine, Ophthalmology Department, Democratic Republic of Congo*
[2]*University of Lubumbashi (D.R.C), School of Medicine, Anatomopathology Department, Democratic Republic of Congo*
[3]*University of Lubumbashi (D.R.C), School of Medicine, Department of Gynecology and Obstetrics, Democratic Republic of Congo*
[4]*Cabinet for Eye Diseases and Surgery, Democratic Republic of Congo*
Corresponding Author: Makumyaviri Mbuiro Julien

Summary: *Ocular toxoplasmosis is an incurable infectious disease caused by a inevitably intracellular protozoan called* ***Toxoplasma gondii*** *and is probably the most common cause of posterior segment infections in many countries.*

The authors report a case of a 30-year-old woman who consulted for bilateral oculalgia, tickling and decreased visual acuity; Visual acuity without correction by far was 10 /10th in the right eye and 10 / 10th in the left eye. Ophthalmoscopic and retinographic evaluation reveals a chorioretinal scar in the right eye suggesting the diagnosis of ocular toxoplasmosis. Ocular toxoplasmosis is one of the major causes of posterior segment infection. Inactive cases may be asymptomatic and the diagnosis requires a complete examination of the eye for better management.

This observation draws the attention of the scientific community to the clinical and paraclinical presentation of ocular toxoplasmosis in an immunocompetent woman, received at the ophthalmology department of University Clinics in Lubumbashi (DRC).

Key words: *Ocular toxoplasmosis, chorioretinitis, retinography, adult.*

Date of Submission: 05-12-2018 Date of acceptance: 21-12-2018

I. Introduction

Ocular toxoplasmosis is an infectious disease caused by a protozoan called ***Toxoplasma gondii*** [1] and is probably the most common cause of posterior segment infections in many countries [2, 3]. *Toxoplasma gondii* causes serious complications in immunocompromised patients and in pregnant women where it is responsible for fetopathies and the most common ocular manifestation is chorioretinitis [2] followed by posterior uveitis [3].

In the world, there are many studies conducted on this subject but in our environment, there are few data relating to this pathology.

The aim of this work is to describe this incidental finding pathology in an immunocompetent, 30-year-old Black Congolese patient at a routine consultation for visual acuity decline and to draw the attention of the scientific community on the clinical and paraclinical presentation of toxoplasmosis.

Patient and observation

We present in this work the case of an immunocompetent patient, aged 30, who was seen in the ophthalmology department of the University Clinics of Lubumbashi (DRC) for bilateral oculalgia, tickling and lower visual acuity for several years, signs for which no treatment has been administered. In his past medical history, we note a notion of wearing medical glasses for distant vision. The patient reports that she owns two cats and that she occasionally consumes raw vegetables (meat, salad) and tap water, the practice of gardening with bare hands.

Visual acuity without correction by far was 10 / 10th in the right eye and 10 / 10th in the left eye; The keratometer of Javal gave to the right eye 1.00 to 70 and to the left eye 1.00 to 90, the automatic

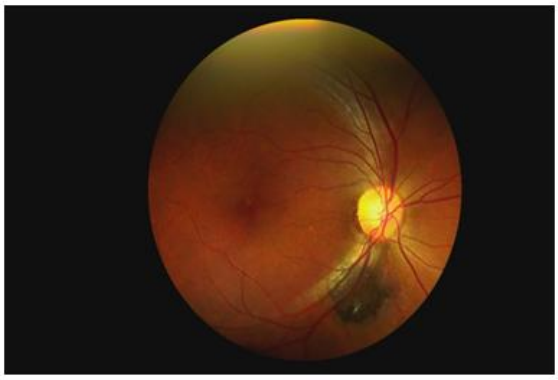
autorefractometer revealed to the right eye 0.00 and to the left eye 0.00. We prescribed a correction for the right eye (-0.25) 160 and the left eye (-0.25) 180.

Slit lamp examination revealed tarsal papillae in the lower dead end of two eyes. Applanation tonometry was 12 mmHg in the right eye and 15 mmHg in the left eye. The dilated fundus examination revealed that in the infranasal, an old chorioretinal scar with an active focus in the right eye, reminiscent of a toxoplasmic scar (Figure 1).

Complementary examinations were done as part of an etiological and topographical assessment:

- Elisa Toxoplasma IgG tests at 145 IU / L and IgM at 12 IU / L and the IgG,Avidity index was at 8.2% (<30%) suggesting a recently acquired Toxoplasma gondii infection
- HIV serology was negative
- The retinal examination (Horus Scope DEC-100, Eurotech optical 2013) revealed a chorioretinal scar with an active focus in the right eye in the nasal inferior quadrant of less than 1 papillary diameter of the papilla.

Right eye **Left eye**



Picture 1. Chorioretinal scar, in the nasal quadrant less than 1 papillary diameter of the papilla, secondary to toxoplasmosis characterized by the presence of a yellowish-colored active center at the center of an atrophic scar.

Picture 2. Retina of the left eye with no abnormality detected.

II. Discussion

Ocular toxoplasmosis is a recurrent disease that progressively develops and threatens visual function [5]. The ocular manifestation produced by the parasite Toxoplasma gondii in a human neonate was first described in 1929 and was recognized as a human disease in 1939 [3,4]. But it was still not recognized as a pathology that could affect adults until 1952 and was considered until the 1990s as a late sign of congenital infection. It has been established since 2000 that the majority of cases of toxoplasmosis were secondary to acquired infection after birth. [3,4]. Consumption of meat or organs containing cysts can lead to the development of toxoplasmosis in many species, including cats and humans.

- **Phases of ocular toxoplasmosis**

Ocular toxoplasmosis has three main phases: active, chronic or inactive and recurrent [2,16].

- During the active phase, the focus of chorioretinitis appears yellowish-white or greyish-white, with an oval or circular elevation
- When the active phase is controlled, a very well defined atrophic retinal scar surrounded by a hyperpigmented edge appears. Parasite cysts containing active bradyzoites may remain latent in neuroretin for life without clinical manifestations. [2, 15,18]
- Finally, recurrent episodes may appear, especially in immunocompromised patients; howeverin our case it was an immunocompetent patient. Cysts release active forms of the parasite (tachyzoites) that invade and destroy healthy cells with the appearance of a new focus of ocular toxoplasmosis. Recurrence often occurs between the first and third decades of life [2, 15,18] and affects 20 to 80% of patients.

In cases of congenital infection, the patient will most often suffer from a decrease in visual acuity, strabismus, nystagmus or leucocoria [18]. The recurrence of the disease is characterized by a new focus of chorioretinitis adjacent to the old scar, which has been the case in our observation and described by other authors [15-16]. Frequently, it is difficult to distinguish whether transmission is congenital or acquired,

especially if the infection appears in childhood as both forms have similar eye symptoms and changes. Approximately 2/3 of cases are acquired postnatally [6]. This is the case of the patient described in this report; in whom the diagnosis was made in adulthood. Thus, it became impossible to know if she was infected in utero or after birth.

- **Diagnosis of ocular toxoplasmosis**

The vast majority of cases of toxoplasmosis are based on the clinical signs detected during a routine examination evaluating the background and observing the presence of any chorioretinal scar similar to that found in this clinical case. During the acute or active phase, the differential diagnosis is to be done with:

- Infectious pathologies, namely: toxocariasis, necrotic retinopathy induced by Treponema pallidum and certain viruses, unilateral subaqueous diffuse neuroretinitis,
- Non-infectious pathologies, namely: Behcet's disease, multifocal choroiditis, panuveitis, serpiginous choroiditis, primary intraocular lymphoma [6].

The diagnosis can be confirmed by a serological test for IgM and IgG antibodies and the avidity of this last (<30%: recent infection,> 30%: old infection) [7,19].

In our patient the retinal images showed old and recent lesions while the avidity of IgG was 8.2% (recent infection) this disparity could be explained by a reactivation of an old toxoplasmic focus. In view of the above, negative HIV serology does not exclude immunosuppression.

- **Treatment**

The goal of treatment is to eliminate the parasite rapidly, reduce inflammation, limit damage to the retina, prevent recurrence and prevent the spread of the parasite [18]. Active ocular toxoplasmosis is treated with antiparasitic drugs such as pyrimethamine and sulfadiazine, which are associated with folic acid [16]. In case of parasite resistance or intolerance to medical treatment, laser photocoagulation and vitrectomy may be indicated when there is persistence of vitreous disorder [8]. Often surgical treatment is proposed in case of risk of damage to the macula or optic nerve with loss of vision secondary to inflammation of the vitreous or with risk of retinal detachment. [2, 7-8]. For our patient, treatment with pyrimethamine and sulfadiazine was initiated.

III. Conclusion

Many eye conditions may go undetected during routine eye examinations. During the optometric examination in a patient with amblyopia, a reduction in visual acuity is expected and this may mask the true etiology, prevent the correct diagnosis from being made and possibly the setting up of the best management. A detailed history and a complete ocular evaluation including a routine fundoscopy either direct (ophthalmoscope) or indirect method (slit lamp and 90D lens) are essential and provide the means to make a correct diagnosis of secondary ambliopic exotropia at a ocular toxoplasmosis. Ocular toxoplasmosis is a potentially blinding pathology with possibility of recurrence, thus the patient's counceling for regular evaluation to minimize the morbidity of the disease is necessary. Ocular toxoplasmosis can occur even in elderly people of any race. His diagnosis is clinical, but antibody tests for specific toxoplasmosis allows to confirm the diagnosis and make the difference between reactivation of the infection and recently acquired toxoplasmosis.

Pictures

- **Picture 1**: Chorioretinal scar, in the nasal quadrant less than 1 papillary diameter of the papilla, chorioretinal scar with active focus in the right eye, secondary to toxoplasmosis characterized by the presence of an active center of yellowish color at the center characteristic an atrophic scar.
- **Picture 2**: Retina of the left eye without detected abnormality.

Conflicts of interest

The authors do not declare any conflict of interest.

Authors contributions

All authors participated in the production of this report, read and approved the final version.

Bibliography

[1]. Holland GN, Lewis KG, O'Connor GR. Ocular toxoplasmosis: a 50th anniversary tribute to the contribution of Helenor Campbell Wilder Foerster. Arch Ophthalmol. 2002 Aug; 120(8):1081-4. PubMed | Google Scholar

[2]. Holland G. N., "LX Edward Jackson Memorial Lecture Ocular Toxoplasmosis: A Global Reassessment. Part I: Epidemiology and Course of the Disease," *American Journal of Ophthalmology*, Vol. 136, No. 6, 2003, pp. 973-988. doi: 10.1016/j.ajo.2003.09.040

[3]. Furtado J. M., Winthrop K. L., Butler N. J. and Smith J. R., "Ocular toxoplasmosis I: Parasitology, Epidemi- ology and Public Health," *Clinical and Experiment Oph- thalmology*, 2012 (in press). doi:10.1111/j.1442-9071.2012. 02821.x

[4]. Grine A. Etude retrospective de 16 cas de toxoplasmose oculaire, thèse, Maroc, 2011. Google Scholar

[5]. Russo M, Pergola G, Pedicini G. Ocular toxoplasmosis: our experience. Infez Med. 2005 ; 13(3): 160-7. PubMed | Google Scholar

[6]. Bodaghi B., Touitou V., Fardeau C., Paris L. and Le- Hoang P., "Toxoplasmosis: New Challenges for an Old Dis- ease," *Eye*, Vol. 26, No. 2, 2012, pp. 241-244. doi:10.1038/eye.2011.331
[7]. Yogolelo AB, Musau NA, Kasamba IE, Kapalu MS, Mbuyi MS. Toxoplasmose oculaire atypique chez une femme congolaise de 72 ans: à propos d'une observation, Pan African Medical Journal. 2015; 22 :267 doi :10.11604/pamj.2015.22.267.8137
[8]. Sara O, Raul M, Victoria de J,Ocular Toxoplasmosis: A Case Report, *International Journal of Clinical Medicine*, 2013, 4, 1-4 doi.10.4236/ijcm.2013.41001
[9]. Doudou Y, Renaud P, L'ollivier C, Jacqueline F, Situakibanza H, Muhindo H, Mitashi P, Raquel AIL, Van sprundel M, Boelaert M, Van geertruyden JP, dubey JP, Jones JL; Toxoplasma gondii, infection in humans and animals in united states. Int J parasitol. 2008, sep :38(11) :1257-78.
[10]. Mwilambwe NS, seroprevalence de la toxoplasmose chez la femme enceinte à Lubumbashi : facteurs associés et issue neonatale, mémoire de specialisation, UNILU, Fac. Méd, RDC, 2008
[11]. Bosch-Driessen LE, Berendschot TT, Ongkosuwito JV, Rothova A. Ocular toxoplasmosis: clinical features and prognosis of 154 patients. Ophthalmology. 2002; 109(5): 869-78. PubMed | Google Scholar
[12]. Gilbert RE, Dunn DT, Lightman S Et al. Incidence of symptomatic Toxoplasma eye disease: aetiology and public health implications. Epidemiol Infect. 1999 Oct; 123(2): 283-9.
[13]. Balayre S, Gomez K, Tribut A, Dore P, Gobert F. Toxoplasma Gondii and necrotizing retinitis: a case report. J Fr Ophtalmol. 2003 Oct;26(8):837-41. PubMed | Google Scholar
[14]. London N. J., Hovakimyan A., Cubillan L. D., Siveiro C. D. and Cunningham E. T., "Prevalence, Clinical Cha- racteristics, and Causes of Vision Loss in Patients with Ocular Toxoplasmosis," *European Journal of Ophthal- mology*, Vol. 21, No. 6, 2011, pp. 811-819. doi:10.5301/EJO.2011.6403
[15]. Delair E., Latkany P., Noble A. G., Rabiah P., McLeod R. and Brézin A., "Clinical Manifestations of Ocular Toxo- plasmosis," *Ocular Immunology and Inflammation*, Vol. 19; No. 2, 2011, pp. 91-102. doi:10.3109/09273948.2011.564068
[16]. Jones JL, Muccioli C, Belfort R, Holland GN, Roberto JM, Silveira C. Recently acquired Toxoplasma Gondii infection in Brazil. Emerg Infect Dis.2006; 12(4): 582-7. PubMed |Google Scholar
[17]. Holland G. N., "LX Edward Jackson Memorial Lecture Ocular Toxoplasmosis: A Global Reassessment. Part II: Disease Manifestations and Management," *American Jour- nal of Ophthalmology*, Vol. 137, No. 1, 2004, pp. 1-17. doi: 10.1016/j.ajo.2003.10.032
[18]. Cordero-Coma M., Pérez E., Calleja S. And García Ruiz de Morales J. M., "Toxoplasmic Retinochoroiditis: Relap- se vs Choroidal Neovascular Membrane," *Archivos de la Sociedad Española de Oftalmologia*, Vol. 85, No. 12, 2010, pp. 410-413.

Makumyaviri Mbuiro Julien "Ocular Toxoplasmosis in a 30-Year Immunocompetent Congolese Woman" .IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 7, no. 06 , 2018, pp. 78-81.