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SHORT COMMUNICATION

Macular hole following Bartonella henselae neuroretinitis

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PURPOSE. *To report a case of macular hole secondary to Bartonella henselae neuroretinitis.*
METHODS. *Observational case report. An 11 year-old boy presented urgently with a decrease of visual acuity in the left eye. Posterior segment examination revealed neuroretinitis attributed to Bartonella henselae. Treatment was initiated, resulting in the disappearance of symptoms.*
RESULTS. *Follow-up consultations 7 months later showed a further decline in visual acuity secondary to a macular hole.*
CONCLUSIONS. *Cat scratch disease is a rare pathology and is most often considered benign. Serious complications can nonetheless occur, such as neuroretinitis, choroidal nodules, and disciform keratitis. The authors report a case of sequellar macular hole. They found only one previous report of macular hole caused by B henselae, which, contrary to their case, appeared rapidly 12 days after presentation. (Eur J Ophthalmol 2008; 18: 456-8)*

KEY WORDS. *Bartonella henselae, Cat scratch disease, Macular hole, Neuroretinitis*

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INTRODUCTION

Cat scratch disease is a very uncommon and most often benign pathology caused by bacteria in the *Bartonella* genus, with the *henselae* species appearing as the principal etiologic factor. Ophthalmologic complications have been identified, such as disciform keratitis, anterior uveitis, hyalitis, choroidal nodules, and neuroretinitis (1). We report a case involving a child with a unilateral stellar neuroretinitis in association with cat scratch disease, complicated by a macular hole.

Case report

An 11-year-old boy was referred to the Ophthalmology Department of the Fort de France University Hospital Center for severe visual loss in the left eye of 2 weeks duration, in association with a change in general well-being. The medical history was unremarkable except for a kitten scratch on his left forearm from 2 months prior. The clinical examination revealed a visual acuity of 20/20 in the right without correction and counting fingers at 1 foot in the left. The fundus of the right eye was normal, apart from a whitish subpapillary chorioretinal focus of small size, approximately 100–200 µm (Fig. 1). The left side showed hemorrhagic papillary edema with a peripapillary serous retinal detachment and macular star, subtle hyalitis, and a small peripheral paravascular hemorrhage at 11 hours (Fig. 2). A 3-week serum showed immunoglobulin M seroreversion, while *Bartonella henselae* immunoglobulin G appeared. The technique employed was indirect immunofluorescence (Pasteur-Cerba Laboratory, Paris, France), carried out by culturing strains of *B henselae* on agar plates (Pasteur-Cerba Laboratory) and by adding Fluoline M and G (Bio-Merieux Laboratory, Lyon, France). Other classic causes of optic disk edema with macular star were ruled out by biological data. Laboratory testing on the cat serum obtained a positive anti-*B henselae*

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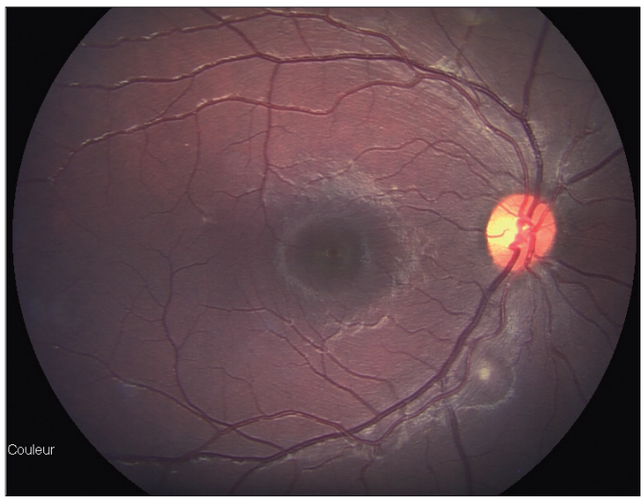

Fig. 1 - *Cat scratch disease neuroretinitis. The fundus photograph of the right eye taken at the beginning shows only a single focus of retinochoroiditis.*

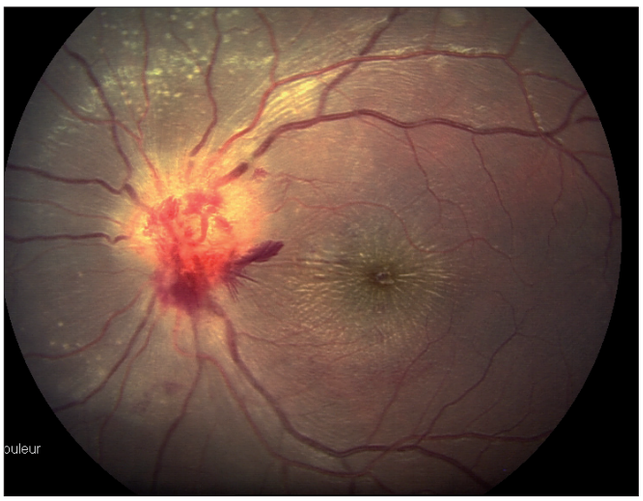

Fig. 2 - *Cat scratch disease neuroretinitis. The fundus photograph of the left eye taken shortly after the onset of blurred vision shows hemorrhagic optic disk edema with a peripapillary serous retinal detachment, and a macular star.*

serum antibodies titer at 1/512 (threshold-titer at 1/64). In light of this form of neuroretinitis, treatment with oral rifampicin (500 mg daily) and oral doxycycline (200 mg daily) was instituted for a month. Follow-up consultations showed progressive resolution of the serous retinal detachment and papillary edema, with a concomitant improvement of the visual acuity in 4 months (20/40) in the left eye. Seven months later, the visual acuity declined a second time to 20/200; the fundus of the left eye revealed a macular hole (Fig. 3).

DISCUSSION

Along with the complications already described, cat scratch disease is now a recognized etiology of intermediate uveitis (1, 2). Moreover, the genome of various species of *Bartonella* has been isolated in the vitreous body of patients by several authors (3). These uveitis lead to structural modifications of the vitreous humor with consequential premature posterior detachment of the vitreous body with traction on the macula. Since the foveola is a zone of preferential vitreoretinal adherence, these tractions could have created the macular hole. This complication has already been described anecdotally in other pathologies responsible for intraocular inflammation, such as Behçet disease (4). We have only found one previous report of macular hole caused by *B henselae,* which, contrary to our case, appeared rapidly 12 days after presentation (5). We used a computerized search using Medline with PubMed (National Library of Medicine) for the years 1980–2007. Search words included *Bartonella henselae,* cat scratch disease, macular hole, and neuroretinitis neuromyelitis.

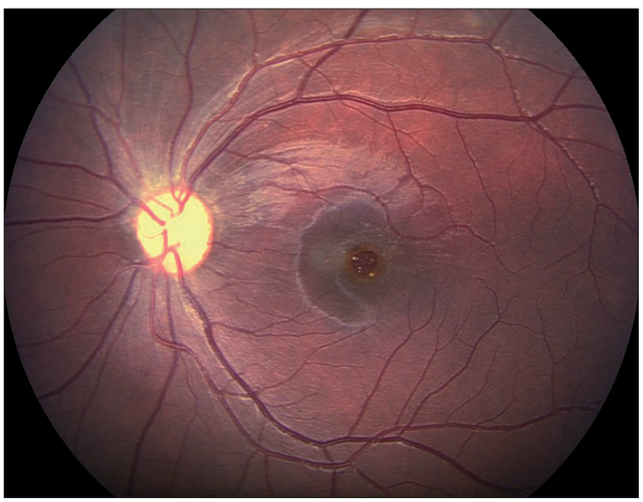

Fig. 3 - *Cat scratch disease neuroretinitis. A color fundus photograph of the left eye taken 7 months later shows resolution of the optic disk edema and peripapillary serous retinal detachment, but also the presence of a macular hole.*

Proprietary interest: None.

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REFERENCES

1. Reed JB, Scales DK, Wong MT, Lattuada CP, Dolan MJ, Schwab IR. Bartonella henselae neuroretinitis in cat scratch disease. Diagnosis, management, and sequelae. Ophthalmology 1998; 105: 459-66.
2. Soheilian M, Markomichelakis N, Foster CS. Intermediate uveitis and retinal vasculitis as manifestations of cat scratch disease. Am J Ophthalmol 1996; 122: 582-4.
3. Goldstein DA, Mouritsen L, Friedlander S, Tessler HH, Edward DP. Acute endogenous endophthalmitis due to Bartonella henselae. Clin Infect Dis 2001; 33: 718-21.
4. Hirokawa H, Takahashi M, Trempe CL. Vitreous changes in peripheral uveitis. Arch Ophthalmol 1985; 103: 1704-7.
5. Albini TA, Lakhanpal RR, Foroozan R, Holz ER. Macular hole in cat scratch disease. Am J Ophthalmol 2005; 140: 149-51.