



Case illustrated

Self-remitting *Bartonella* neuroretinitis without a cat scratchSatoshi Akao^{*}, Kotaro Komori, Ryo Rokutanda

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A 16-year-old woman presented with a 1-week history of blurry vision and central scotoma in the left eye (LE). She did not report flu-like symptoms and did not have lymphadenopathy and cat-scratch or bite wounds in her skin. An ocular examination revealed severe vision loss with light perception in the LE. The slit-lamp examination showed mild (1+) cells in the vitreous of the LE. Fundus examination (FE) of the LE revealed optic disk swelling and macular edema (ME) with stellate exudates which were also confirmed by optical coherence tomography (Fig. 1A, B). The right fundus was unremarkable. Leakage was noted from optic disk and choroidal vessel during the angiography in the LE (Fig. 1C), which was consistent with neuroretinitis. The diagnosis of bartonella neuroretinitis was supported by the results of serologic evaluation: the IgM antibody titer to *Bartonella henselae* was 1: 40, and the IgG antibody titer was more than 1: 1024 (Enzyme Immunoassay). Other possible infectious and autoimmune disease tests of neuroretinitis include toxoplasmosis, syphilis, cytomegalovirus, Sjogren syndrome, multiple sclerosis, and neuromyelitis optica were negative. Her visual acuity in the LE improved 30/40 without antimicrobials in several days. At 3-month-follow-up, FE and OCT showed no optic disk swelling and ME.

Bartonella infection is the most leading cause in neuroretinitis, which accounts for two thirds of cases [1]. While typical symptoms such as flu-like symptoms, lymphadenopathy, and cat-scratch or bite in bartonella infection [2] were not present in our case, only ocular findings led us to suspect bartonella neuroretinitis. Although antimicrobials and steroid treatment are suggested [3], spontaneous remission cases without treatment were reported as our case [4]. Our case highlights the

importance of ocular findings in suspecting or diagnosing bartonella infection.

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Contributions

Satoshi Akao and Ryo Rokutanda made substantial contributions to the conception of the work. Kotaro Komori made significant contributions to the design of the work. Satoshi Akao drafted the original manuscript. All authors substantially contributed to the revision of the manuscript drafts. All authors have approved the submitted version of the manuscript and agreed to be accountable for any part of the work.

Informed consent

The patient's family provided consent for the publication of this case with the removal of all identifying information to ensure anonymity and retain her privacy. The study design was approved by the appropriate ethics review board.

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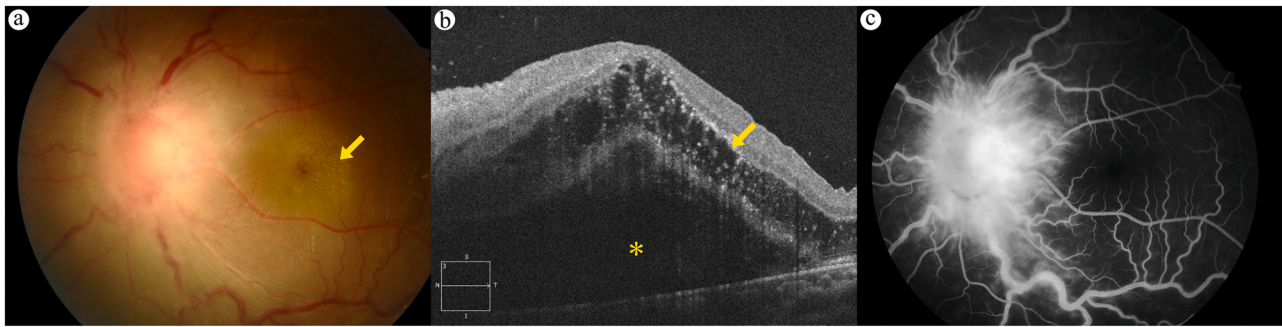


Fig. 1. Bartonella neuroretinitis in the left eye. (A) Fundus examination revealed optic disc and macular edema with stellate maculopathy (arrow). (B) Optical coherence tomography illustrated a marked retinal thickening (arrow) associated with a macular serous retinal detachment (asterisk). (C) Early-phase fluorescein angiogram showed remarkable optic disc leakage.

Declaration of interest

The authors declare no conflicts of interest associated with this manuscript.

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References

- [1] Suhler EB, Lauer AK, Rosenbaum JT. Prevalence of serologic evidence of cat scratch disease in patients with neuroretinitis. *Ophthalmology* 2000;107:871–6. [https://doi.org/10.1016/s0161-6420\(00\)00002-6](https://doi.org/10.1016/s0161-6420(00)00002-6).
- [2] Cunningham ET, Koehler JE. Ocular bartonellosis. *Am J Ophthalmol* 2000;130:340–9. [https://doi.org/10.1016/s0002-9394\(00\)00573-0](https://doi.org/10.1016/s0002-9394(00)00573-0).
- [3] Celiker H, Kazokoglu H, Eraslan M, Cerman E, Karabas L. Bartonella henselae neuroretinitis in patients without cat scratch. *Jpn J Infect Dis* 2018;71:397–401. <https://doi.org/10.7883/yoken.JJID.2017.518>.
- [4] Purvin V, Sundaram S, Kawasaki A. Neuroretinitis: review of the literature and new observations. *J Neuroophthalmol* 2011;31:58–68. <https://doi.org/10.1097/WNO.0b013e31820cf78a>.