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ORIGINAL ARTICLE

Occlusive Vasculitis and Optic Disk Neovascularization Associated with Neuroretinitis

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ABSTRACT

Purpose: To report a case of neuroretinitis associated with ischemic nasal branch retinal vein occlusion, periphlebitis, and neovascularization of the optic disk.

Methods: Case report.

Results: A 32-year-old man presented with a typical image of neuroretinitis, retinal hemorrhages and sheathing of the retinal veins in the nasal retina. His left hand had been bitten by a kitten 8 weeks before. Serology for *Bartonella henselae* was negative. On the 6th week of follow-up, optic disk neovascularization developed, which required retinal photocoagulation. Photocoagulation was performed again at the 12th and 18th week revision since further new vessels had developed. At the 32nd week of follow-up neovascularization had regressed.

Conclusions: Neuroretinitis may be associated with severe complications such as retinal vascular occlusions and optic disk neovascularization.

KEYWORDS: *Bartonella henselae*; infectious uveitis; neuroretinitis; optic disk neovascularization; retinal vasculitis

Neuroretinitis is a unique form of optic neuropathy characterized by optic disk swelling and a partial or complete macular star. It may be caused by a number of specific infectious conditions, including cat scratch disease (CSD)¹ or toxoplasmosis.² We report the case of a patient with a picture of neuroretinitis, which was associated with an ischemic nasal branch retinal vein occlusion and periphlebitis; he developed optic disk neovascularization.

CASE REPORT

A 32-year-old man consulted for decreased visual acuity (VA) in his left eye (LE) of 15 days duration.

Received 08 June 2010; revised 27 July 2010;
accepted 28 July 2010

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His VA was counting fingers in his LE and 20/20 in his right eye (RE). There were trace vitreous cells in the LE. Funduscopic examination of the LE showed a picture of neuroretinitis (Figure 1), and thrombosis and sheathing of the retinal veins in the nasal retina (Figure 2a). Fluorescein angiography revealed severe capillary closure (Figure 2b). RE was normal.

A kitten had bitten the patient's left hand 8 weeks before. Later he developed an erythematous papule in his hand, fever, and a cervical lymphadenopathy. He was started on empirical treatment with ciprofloxacin 500 mg b.i.d. for 6 weeks and prednisone 60 mg/day, and the doses were tapered. Serology for *Bartonella henselae* (indirect immunofluorescence–IIF test), *Toxoplasma gondii*, and *Treponema pallidum*, as well as Mantoux test and chest X-ray, was requested. All results were negative. We requested serology for *Bartonella henselae* on 2 more occasions (6 and 12 weeks after the beginning of the symptoms, respectively), but negative results were obtained once again. At the

6th week of follow-up, optic disk neovascularization had developed toward the nasal retina, which required retinal photocoagulation (Figure 3a). Photocoagulation was repeated at the 12th and 18th week revision since bunches of new vessels were observed (Figure 3b, c). At the 32nd week of follow-up neovascularization had regressed, optic atrophy had developed, and VA was counting fingers (Figure 4).

DISCUSSION

Our patient presented with a picture of neuroretinitis, which was associated with an ischemic nasal branch retinal vein occlusion and periphlebitis. Serology for *Bartonella henselae* was negative. Reported sensitivity for IIF test for *Bartonella* diagnosis is around 90%.³ Our case may have fallen in the 10% of expected



FIGURE 1 Retinography of the left eye on admission (posterior pole): Florid disk edema with a partial macular star are observed

false-negative results. Our patient presented with thrombosis and sheathing of retinal veins. Cases of neuroretinitis with occlusive vasculitis have been reported, most of them associated with *Bartonella* infection.¹ Our patient developed optic disk neovascularization. The latter has been reported previously in one patient with CSD neuroretinitis.⁴ *Bartonella* species stimulate endothelial cell proliferation through induction of vascular endothelial growth factor production by host cells.⁵ This, together with the retinal ischemia,

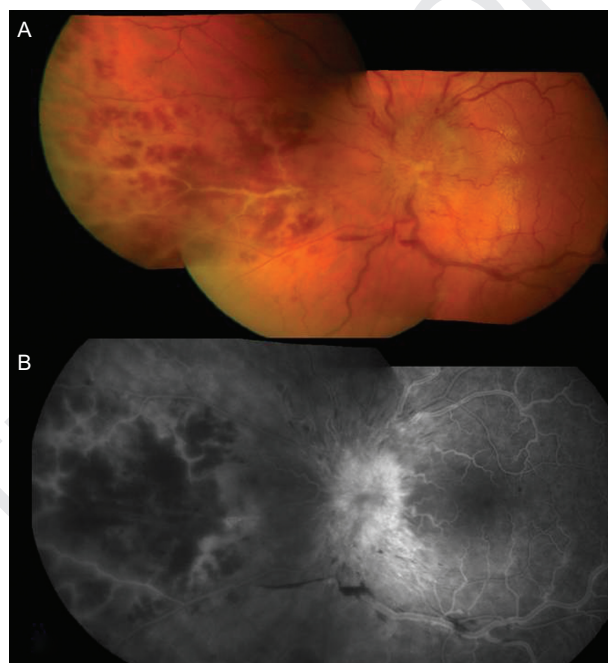


FIGURE 2 (A) Retinography of the left eye on admission (nasal retina) showing sheathing of nasal retinal veins and profuse hemorrhages. (B) Fluorescein angiography of the left eye on admission showing severe capillary closure in the nasal retina.

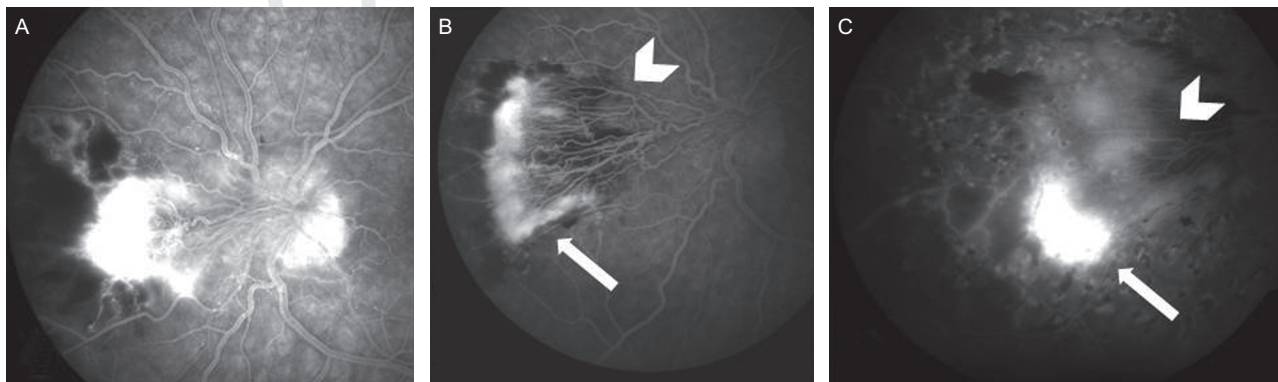


FIGURE 3 Fluorescein angiography of the left eye during 18 weeks of follow-up: (A) 6th week follow-up visit: (a) bunch of new vessels growing towards the nasal retina from the optic disk is observed. Hyperfluorescence of the optic disk is observed due to edema. (B) 12th week follow-up visit: a new bunch of new vessels (arrow), distal to the previous ones, which had regressed (arrow head). (C) 18th week follow-up visit: further new vessels (arrow) had developed distal to the previous ones which had also regressed (arrow head). Leakage of the optic disk is not observed due to development of atrophy.

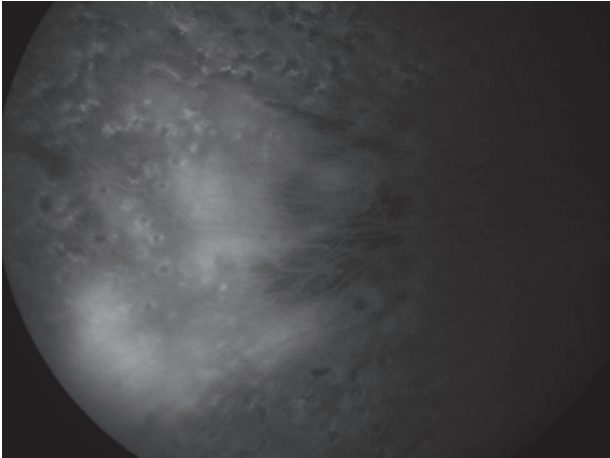


FIGURE 4 Fluorescein angiography of the left eye on 32th follow-up visit: mild hyperfluorescence of regressed bunches of neovascularization.

is probably the origin of the neovascularization in our patient. We treated the patient with ciprofloxacin. Other therapeutical options that can be considered for CSD neuroretinitis include rifampin, doxycycline, erythromycine, trimethoprim-sulfamethoxazol, and intramuscular gentamicine.¹

In summary, our patient presented with a neuroretinitis and retinal vein thrombosis. Retinal ischemia and optic disk neovascularization with an aggressive evolution complicated the clinical picture.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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