Dear Author,

Please check these proofs carefully. It is the responsibility of the corresponding author to check against the original manuscript and approve or amend these proofs. A second proof is not normally provided. Informa Healthcare cannot be held responsible for uncorrected errors, even if introduced during the composition process. The journal reserves the right to charge for excessive author alterations, or for changes requested after the proofing stage has concluded.

The following queries have arisen during the editing of your manuscript and are marked in the margins of the proofs. Unless advised otherwise, submit all corrections using the CATS online correction form. Once you have added all your corrections, please ensure you press the “Submit All Corrections” button.

AQ1. Please provide academic degrees for all authors.

AQ3. Currently your figures will appear in black and white for the print edition. If you would like to pay for Figures 1 and 2 to print in color, please indicate so that we may request a cost estimate.

Note

1. As the Figure captions have been taken from the given PDF, AQ2 has been ignored. Please check the Figure captions.
Any figure submitted as a color original will appear in color in the journal’s online edition free of charge. Color reproduction in the print edition is available if the authors, or their funding body, bear the associated costs. The charge for the first color page is USD $1000, second and third pages are charged at USD $500 each. For four or more pages please contact us for a quote. All orders or inquiries must be made on or before the proof due date.

1. Article details
   - I wish to pay for color in print. The manuscript (CATS) ID of my article is: _________________ (six digit number)
   - Article title: ________________________________________________________________________________________
   - Author name: ______________________________________________________________________________________
   - Please detail the figure/part numbers for color printing: _________________________________________________

<table>
<thead>
<tr>
<th>Number of color pages</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total price</td>
<td>$1000</td>
<td>$1500</td>
<td>$2000</td>
<td>Contact us for a quotation</td>
</tr>
</tbody>
</table>

Number of color pages: ____________ Total color costs: ________________ (see table above)

2. Payment options
   An invoice or credit card payment will be raised when the issue containing your paper is sent to press.

   EITHER pay by credit card

   - Credit Card □ Please charge my AMEX/VISA/masterCard(delete as appropriate)
   - Card No ________________ / ________________ / ________________ / ________________ / ________________ Exp.date ________________ / ________________
   - CVV number (last 3 or 4 digits on reverse of card):
   - Name on credit card:
   - Address where registered
   - Signature: _____________________________ Date: _____________________________

   OR invoice to: ______________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
   Signed: _____________________________ Date: _____________________________
   Print name: ____________________________

Scan and email the completed form to the journal’s production editor

NOTES
If requested, and if possible, at proof stage we can group images from various pages onto one page to reduce color costs. Please give guidance in your proof corrections if this is the case. Color costs are by PAGE not per image, and size has no relevance.

RightsLink author reprints are manufactured separately from the printed journal and are printed in black and white by default. Author reprints ordered prior to your color in print order being processed will be printed in black and white. If you wish to order color reprints of your article, please wait until your color in print order is processed then access the RightsLink reprint ordering link where you will be able to select an option for color.

If you do not wish to pay for color printing, please ensure that all figures/images and legends are suitably amended to be read, and understood, in black and white. It is the author’s responsibility to provide satisfactory alternatives at proof stage. Please access the instructions for authors for further guidance on figure quality at: http://informahealthcare.com/oii
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. 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* 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**
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%. Our case may have fallen in the 10% of expected 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. Our patient developed optic disk neovascularization. The latter has been reported previously in one patient with CSD neuroretinitis. *Bartonella* species stimulate endothelial cell proliferation through induction of vascular endothelial growth factor production by host cells. This, together with the retinal ischemia,

![Figure 1](image1.png)

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

![Figure 2](image2.png)

**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](image3.png)

**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.
Neuroretinitis and Optic Disk Neovascularization

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.

REFERENCES


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, erythromicyn, trimethoprim-sulfamethoxazol, and intramuscular gentamicin.1