Blurred vision during exacerbation of ulcerative colitis

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A 36-year-old man with a 3-year history of biopsy-proven pancolitis was referred to our hospital. His clinical course had a relapsing remitting pattern of bloody diarrhoea responsive to both steroids and mesalazine. On hospital admission he had a 7-day history of bloody diarrhoea. On physical examination, he was conscious, alert, oriented and haemodynamically stable. The patient's lungs were well ventilated. Abdominal examination showed no abnormality, but there was fresh blood on rectal examination. Laboratory examination disclosed leucocytosis $15.7 \times 10^9/l$ (predominantly polymorphonuclear leucocytes). Erythrocyte sedimentation rate was 106 mm/h. There was thrombocytosis ($409 \times 10^9/l$) and elevated C-reactive protein (40 mg/l). Haemoglobin level, haematocrit, prothrombin time, liver function tests and serum iron were all normal. Colonoscopy showed exacerbation of ulcerative colitis with multiple pleomorphic ulcerations varying in size from 5 mm to several centimetres and multiple inflammatory polyps of 2–3 cm. Heavy inflammation with crypt abscesses was seen histologically. He was treated with prednisone 60 mg per day and mesalazine 1500 mg per day with an improvement of the diarrhoea. During the 2 days of hospitalisation, the patient had an acute onset of red, irritated left eye with blurred vision. Ocular studies of the right eye were all normal. Ocular studies of the left eye revealed a visual acuity of 0.5 (normal 1); split lamp biomicroscopy revealed episcleritis close to the limbus with corneal shining; intra-ocular pressure (by applanation tonometry) was normal (15 mmHg); ophthalmoscopic examination demonstrated a venous retinal vessel occlusion in the inferior fields with retinal swelling affecting the macula and haemorrhages in the inferior fields. A fluorescein angiography examination was performed (figure 1).

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Figure 1 Fluorescein angiogram of the left eye. (A) Early arterial phase; (B) late phase

Questions

- 1 What does the figure show?
- 2 How should this condition be treated?

Answers

QUESTION 1

In figure 1(A), the early arterial phase of fluorescein angiogram shows a delayed filling of inferotemporal venous vessels and multiple haemorrhages in the inferior retinal fields. In figure 1(B), the late phase of the angiogram shows oedema in the inferior retinal fields and macula. In summary, these findings show occlusion of the retinal vessel with retinal oedema affecting the macula.

QUESTION 2

Therapy should be directed toward the underlying bowel disease.

Argon laser photocoagulation was used in our patient in order to stop the retinal oedema which was affecting the macula. After three treatment sessions visual acuity improved. One year later, the visual acuity of the left eye was 0.8 and marks remaining on the retina as the result of photocoagulation and a venous-venous shunt close to the optic disk were seen in the fluorescein angiography (figure 2).

Figure 2 Fluorescein angiogram of the left eye one year later. (A) Neither retinal oedema nor haemorrhages were seen; the arrow shows the marks remaining on the retina as the result of photocoagulation. (B) The arrow shows a venous-venous shunt close to the optic disk

Discussion

Ocular disease in association with ulcerative colitis was first described by Crohn in 1925 when he recorded two cases of corneal inflammation and conjunctivitis with ulcerative colitis. It is now an uncommon but well-established extra-intestinal complication with an incidence of 3.5–11.8% in various large series of inflammatory bowel disease.^{1 2} Ocular features commonly include conjunctivitis, episcleritis, iritis, corneal ulceration and keratitis. Arterial and venous thromboses are known complications of inflammatory bowel disease. Any vascular system may be involved, including the retinal vasculature.

The occurrence of thrombosis does not appear to correlate well with the duration, activity or extent of intestinal inflammation. It can precede, coincide with, or follow the overt manifestations of the colitis with a tendency to flare during exacerbation of colitis.³ In our patient, thrombotic retinal vascular occlusion occurred during a severe exacerbation of his ulcerative colitis and this was universal. Many conditions may predispose an individual to central or branch retinal vein occlusions, including alterations of blood flow, altered viscosity of the blood, and abnormalities of the coagulation system (increased levels of factor V, factor VIII, fibrinogen and anti-phospholipid-antibodies or decreased levels of antithrombin III and protein S) and of the vessel walls.^{3 4} Thrombocytosis occurs frequently in patients with inflammatory bowel disease and it is uncertain whether thrombocytosis alone can cause thrombosis.

Retinal vascular disease may have been related to the immune nature of the underlying disease.³⁻⁵ Immunological mechanisms involved in the pathogenesis of ulcerative colitis are complex. An exact immunological relationship with any of the recognised ocular manifestations of ulcerative colitis is unknown. Plasma cells containing IgG and IgA have been found throughout chronically inflamed vessels with C3, IgG and IgA demonstrable immunohistochemically in the endothelium of episcleral veins.

Final diagnosis

Thrombotic occlusion of venous retinal vessels in ulcerative colitis.

Keywords: ulcerative colitis; thrombosis; retinal vascular disease; fluorescein angiogram; argon laser photocoagulation

1 Petrelli E, McKinley M, Troncale F. Ocular manifestations of inflammatory bowel disease. *Ann Ophthalmol* 1982;14:356–60.

2 Keyser B, Nowotny A. Retinal vascular disease in ulcerative colitis. *Am J Ophthalmol* 1994;118:395–6.

3 Ruby A, Jampol L. Crohn's disease and retinal vascular disease. *Am J Ophthalmol* 1990;110:349–53.

4 Duker J, Brown G, Brooks L. Retinal vasculitis in Crohn's disease. *Am J Ophthalmol* 1987;103:664–8.

5 Jampol L, Isenberg S, Goldberg M. Occlusive retinal arteriopathy with neovascularization. *Am J Ophthalmol* 1976;81:583–9.