CASE REPORT

Intravitreal ranibizumab in choroidal neovascularisation due to multifocal choroiditis and panuveitis syndrome

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SUMMARY

We report the use of intravitreal ranibizumab as initial and only treatment in a case of peripapillary choroidal neovascularisation (CNV) in a patient with multifocal choroiditis and panuveitis (MCP) syndrome. A 54-year-old woman presented with sudden reduced vision in the right eye of 2 weeks duration. A full ophthalmological examination was performed including biomicroscopy, fluorescein angiography and optical coherence tomography. A peripapillary choroidal neovascular membrane with subretinal haemorrhage extending to the fovea was revealed due to MCP syndrome. Three intravitreal injections of ranibizumab were performed with monthly intervals. There was clearance of the subretinal haemorrhage and reduction of the leakage after the first injection. The visual acuity improved to 20/20 in 3 months and remained stable at 2-year follow-up without angiographical leakage. Intravitreal injections of ranibizumab could be tried in cases of CNV due to MCP syndrome with very good response.

BACKGROUND

Multifocal choroiditis and panuveitis (MCP) is an idiopathic inflammatory disorder, affecting the choroid, retina and vitreous characterised by chorioretinal lesions ranging in size from 50 to 350 µm in the posterior pole and periphery.¹ Acute lesions typically appear yellow to grey and often become hyperpigmented similar to those seen in presumed ocular histoplasmosis syndrome.¹ The difference between these diseases is that, in MCP, vitreous and anterior chamber inflammations are present in affected eyes.¹ MCP occurs usually in women between the second and sixth decades of life.^{2,3} The disease is bilateral in the majority of patients, although it usually presents asymmetrically and many involved second eyes may be asymptomatic.¹ MCP tends to be a chronic disorder with recurrent bouts of inflammation. Patients usually present with an acute unilateral decrease in visual acuity, floaters, metamorphopsia, scotoma and photopsia. Local and/or systemic steroids are used as the mainstay therapy to control inflammation in these cases.¹ Although it has been reported that the visual prognosis is relatively good in most patients with MCP, macular oedema, choroidal neovascularisation (CNV) and corticosteroid-induced complications such as cataract and glaucoma are frequent complications, resulting in important vision loss which may be permanent if left without treatment.⁴

CNV may develop in up to one-third of patients as a complication of their disease.¹

Antivascular endothelial growth factor (VEGF) therapy with ranibizumab (Lucentis, Novartis, Switzerland) has demonstrated success in treating CNV for age-related macular degeneration and therefore might be useful for CNV secondary to MCP.⁵

This is a report of a successful treatment of peripapillary CNV in MCP only with three intravitreal injections of ranibizumab and a long-standing follow-up of 27 months without recurrence of the CNV.

CASE PRESENTATION

A 54-year-old woman was referred to our department for sudden, painless impairment of vision in the right eye (OD) for 2 weeks. The visual acuity (VA) was 20/200 OD and 20/20 in the left eye (OS). Biomicroscopy revealed mild anterior uveitis with fine keratic precipitates, vitritis and posterior uveitis with multiple white-yellow dots (about 100 µm each) in a mid-peripheral and anterior equatorial distribution. Same chorioretinal lesions were also present in the OS with mild anterior vitritis. A peripapillary subretinal haemorrhage, with serous detachment, extending to the fovea was revealed. Intraocular pressure was 14 mm Hg in both eyes, using Goldmann applanation tonometer.

INVESTIGATIONS

Fluorescein angiography (F/A) revealed a predominantly classic peripapillary choroidal neovascular membrane with late-phase leakage as well as multiple mid-peripheral lesions with early blockage and late staining (figure 1A,B). In the left eye, there were similar multiple mid-peripheral lesions (figure 1C). OCT scan showed a hyper-reflective lesion related to CNV complex near the optic nerve with serous retinal detachment extending up to the fovea (figure 1D).

Laboratory workup, including full biochemical check, D-dimer test, fluorescent treponemal antibody-absorption, serum lysozyme and ACE, anti-nuclear antibody, antineutrophil cytoplasmic antibody, rheumatoid arthritis test, histoplasmin skin test, toxoplasma IgG, Mantoux test, erythrocyte sedimentation rate, HLA-B27, HLA-B51, HLA-B52, sacroiliac and chest X-ray was normal.

The diagnosis of MCP has been confirmed.

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Figure 1 (A) Red-free fundus photograph showing peripapillary subretinal haemorrhage extending to the fovea. (B) F/A showing classic peripapillary choroidal neovascular membrane with late-phase leakage. (C) F/A late phase of left eye with multiple mid-peripheral lesions with late staining. (D) Optical coherence tomography scan showing a hyper-reflective lesion related to choroidal neovascularisation near the optic nerve with serous retinal detachment extending to the fovea.

DIFFERENTIAL DIAGNOSIS

All pathological conditions which may mimic MCP such as

- ▶ Sarcoidosis
- ▶ Syphilis
- ▶ Tuberculosis
- ▶ Presumed ocular histoplasmosis syndrome

TREATMENT

Owing to the mild anterior uveitis and vitritis, only topical steroid eye drops every 2 h were administered.

An off-label intravitreal injection of ranibizumab was recommended for the treatment of peripapillary CNV. The patient was fully informed and signed an informed consent. She received an

intravitreal dose of 0.05 mL (10 mg/mL) ranibizumab (Lucentis) under aseptic conditions using 27 G needle through the infero-temporal pars plana region, 4 mm from limbus.

OUTCOME AND FOLLOW-UP

One month later there was absorption of the subretinal haemorrhage, remarked reduction of serous detachment and the VA improved to 20/60. Patient continued the injections on monthly basis after full ocular examination (including best corrected VA, biomicroscopy and OCT scans). One month after the third injection VA improved to 20/20, in F/A there was no active leakage of the CVN and there was complete absorption of the serous detachment (figure 2A,B). There were no complications

Figure 2 The right eye 4 months after the initial presentation of the patient. (A) Red-free fundus photo showing fibrosis of the peripapillary choroidal neovascularisation (CNV). (B) Late phase of fluorescein angiography showing staining but no leakage of the CNV.

during or after the treatment procedure and during the whole follow-up period.

VA remained stable in our 27 month follow-up period. During the follow-up period (which was consisted of monthly examinations initially, followed by bimonthly visits later), the patient suffered from three episodes of mild iritis (two in the OS and one in the OD) which were easily treated only with topical corticosteroids. There was no need for systematic immunosuppressive therapy.

DISCUSSION

Ranibizumab is a monoclonal antibody approved by FDA for the treatment of CNV due to age-related macula degeneration.⁶ It is a humanised monoclonal antibody which acts by blocking the biological activities of all isoforms of VEGF penetrating the full retina thickness.⁷

VEGF is a growth factor specific for endothelial cells, regulator of angiogenesis and potent inducer of vascular permeability.⁸ Its role in ocular neovascular diseases, such as choroidal neovascularisation, diabetic retinopathy and other is well studied. In humans, high levels of VEGF-A expression are found in CNV tissue excised from patients with AMD.⁹ In addition, VEGF has an important proinflammatory role due to its role in vascular permeability.¹⁰

Thus inhibition of VEGF could result in reduction of permeability, reduction of inflammation and reduction of neovascularisation. Consequently, the use of anti-VEGF therapy in CNV due to other inflammatory causes such as MCP may be proved a beneficial treatment with no or mild complications.

CNV in MCP syndrome is a frequent complication with poor prognosis if left as it is. Current treatment options include Argon laser photocoagulation, photodynamic therapy and local and systemic corticosteroids. All these have limitations and potential serious complications.

Fine *et al*¹¹ reported a case series of six eyes and concluded that bevacizumab and ranibizumab were effective at improving visual acuity over 6 months in patients with multifocal choroiditis-associated CNV.

Although a large number of patients, with longer follow-up period, suffering from inflammatory CNV, are required to establish the effectiveness and safety of this therapy, together with the clarification of the treatment protocol using ranibizumab alone or in combination therapies, we believe that our proposal of intravitreal ranibizumab may be a useful treatment approach in such cases.

Competing interests None.

Learning points

- ▶ Multifocal choroiditis and panuveitis (MCP) is an idiopathic inflammatory disorder, affecting the choroid, retina and vitreous characterised by chorioretinal lesions in the posterior pole and periphery.
- ▶ Although it has been reported that the visual prognosis is relatively good in most patients with MCP, macular oedema, choroidal neovascularisation (CNV) and corticosteroid-induced complications such as cataract and glaucoma are frequent complications, resulting in important vision loss which may be permanent if left without treatment.
- ▶ Intravitreal injections of ranibizumab could be tried in cases of CNV due to MCP syndrome with very good response.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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