CASE REPORT

Retinal vasculitis: a novel paradoxical effect of anti-TNF α ?Kaouther Ben Abdelghani,¹ Maroua Slouma,¹ Wady Ben Jalel,² Leith Zakraoui¹

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SUMMARY

Retinal vasculitis (RV) is extremely rare in spondyloarthritis associated with Crohn's disease. Infliximab, a chimeric monoclonal antibody to tumour necrosis factor (TNF) α , is efficient in spondyloarthritis, Crohn's disease and RV. We present the case of a 41-year-old man with a known history of spondyloarthritis associated with Crohn's disease. He was under treatment with infliximab. Four days after his 12th infusion of infliximab, he presented with sudden blurred vision. Although his disease was in remission, ophthalmological examination revealed bilateral peripheral retinal occlusive vasculitis. The patient responded positively to the treatment by laser photocoagulation and peribulbar corticosteroid injection. Infliximab was not stopped. There was improvement in his eye disease. To the best of our knowledge, this is the first case of new onset of RV occurring under infliximab in a patient with Crohn's related spondyloarthritis. This case illustrates the possibility of a paradoxical effect of this kind of therapy.

BACKGROUND

Retinal vasculitis (RV) is an inflammatory disorder of the retina, uveal tract and vitreous body. It can be associated with an underlying systemic infection, neoplasia or inflammatory disorder such as sarcoidosis, Behçet or multiple sclerosis.

Unlike uveitis, which is relatively common in spondyloarthritis (SPA) and Crohn's disease (CD), RV presents a rare event of these diseases.

Infliximab, a chimeric monoclonal antibody inhibiting tumour necrosis factor (TNF) α , can be used to treat refractory RV.^{1 2}

We report a case of new onset RV occurring during infliximab therapy in a patient with SPA associated with CD.

CASE PRESENTATION

A 41-year-old man, with no personal history of diabetes, hypertension and hypercholesterolaemia, was suffering from SPA associated with CD since 7 years. The diagnosis of CD was established according to clinical, radiographic, endoscopic and histological criteria. His disease, diagnosed 7 years previously, was resistant to conventional treatment with prednisone and azathioprine. As he had exacerbation of his symptoms and worsening of laboratory tests, infliximab infusions (5 mg/kg) were then administered every 8 weeks. A good response was observed.

Four days after his 12th infusion, he presented with sudden blurred vision in both eyes. His joint

disease was in remission as attested by the activity score of SPA (BASDAI) at 1.4. His CD was also in remission.

INVESTIGATIONS

Ophthalmological examination revealed a visual acuity of 8/10 in the right eye and counting fingers in the left. Intraocular pressure was normal (18 mm Hg) for both eyes. Dilated fundal examination revealed ischaemic RV in both eyes.

It also showed neovascularisation associated with intravitreal haemorrhages in the left eye. Biomicroscopy of the anterior segment did not show any pathological manifestations. Fluorescein angiography confirmed this bilateral peripheral RV (figure 1) and showed bilateral areas of ischaemia as well as papillitis in the right eye (figure 2).

DIFFERENTIAL DIAGNOSIS

No source of infection and no competing aetiologies were found.

TREATMENT

The patient underwent many sessions of laser photocoagulation treatment every 15 days (figure 3). Then he had a peribulbar corticosteroid injection. Infliximab was not suspended.

OUTCOME AND FOLLOW-UP

There was a rapid improvement in his eye disease with total regression of the vitreous haemorrhage in the left eye. After 20 months, RV, SPA and CD seem to be stable.

DISCUSSION

RV is characterised by inflammation of the vessels of the retina. The classic symptom of RV is a painless decrease in vision as in our patient. Clinical symptoms can also include altered colour perception, metamorphopsia, floaters and scotomas.³ However, some cases may occur without visual symptoms. RV can be idiopathic or with greater frequency associated to other ocular or systemic diseases.⁴ The most common diseases observed are Behçet's disease, sarcoidosis and multiple sclerosis.⁵ In 2012, Rosenbaum *et al* reviewed the charts of 1390 patients with uveitis and found evidence of RV in 207 patients. Behçet's disease was the most common cause.⁵ RV in SPA is very rare.⁵ In fact, anterior uveitis constitutes the most common extra-articular manifestation in SPA,⁶ occurring in 25–30% of cases.⁷ In CD, the incidence of ophthalmological complications varies from 3.5% to 12%.^{8 9} Large spectrums of ophthalmic

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Figure 1 Bilateral peripheral retinal vasculitis.

manifestations from the anterior to the posterior segment have so far been reported in patients with CD,¹⁰ especially uveitis, episcleritis and scleritis.¹¹ Nevertheless, the overall incidence of posterior segment manifestations is low, less than 1% in patients with CD. Thus, RV is an uncommon complication.¹¹ It was noted in 1 patient among 11 patients with CD.⁵ While anterior uveitis in SPA associated with CD is relatively frequent, the occurrence of RV is rare.

The effect of infliximab in the treatment of vasculitis, especially vasculitis associated with rheumatoid arthritis, is mitigated and remains largely empirical.¹² Studies showed that infliximab could be used in the treatment of idiopathic RV refractory to conventional immunosuppressive regimens.¹ Furthermore, previous studies showed that infliximab could ameliorate signs and symptoms of RV and improve visual acuity of patients with Behçet's disease.^{2 13–15} A retrospective study found that infliximab significantly reduced the mean number of relapses and extended the duration of remission during RV.¹⁶ Moreover, infliximab had a rapid therapeutic effect, which is essential to prevent the permanent and irreversible structural damage of the

retina and other ocular structures.¹⁶ However, the exact dosage and frequency of the infliximab protocol is still unknown.¹⁶

The originality of our case remains in RV occurring under infliximab while the joint and bowel disease was in remission. Under these circumstances, RV onset may be regarded as a kind of paradoxical effect of TNF blockers or could have occurred by chance. The paradoxical effects of TNF blockers include uveitis, psoriasis-like lesions, sarcoidosis¹⁷ or inflammatory bowel disease.¹⁸

Paradoxical ophthalmological manifestations, especially uveitis, are mainly observed with etanercept.¹⁹ The reason for the difference between the various TNF inhibitors and risk of developing ophthalmological manifestations remains unclear.

Treatment of new onset uveitis under anti-TNF could be local in most of the cases without discontinuing the anti-TNF.²⁰ Thus, in a study of 19 patients with SPA who developed uveitis under anti-TNF, this treatment was continued in 13 patients with resolution of their eye disease.²⁰ In our case, infliximab was not stopped and treatment by laser photocoagulation and peribulbar corticosteroid injection had led to improvement of the symptoms.

Figure 2 Papillitis in the right eye.

Figure 3 Laser photocoagulation treatment.

CONCLUSIONS

Our case is original because of the new onset of RV in our patient, which is an uncommon complication of SPA associated with CD. In addition, RV occurred under TNF blockers, whereas previous studies showed the efficacy of infliximab in the treatment of RV.

To the best of our knowledge, this is the first case of new onset RV occurring under infliximab in a patient with Crohn's related SPA.

Learning points

- ▶ Retinal vasculitis (RV) is an uncommon ocular manifestation of spondyloarthritis and CD.
- ▶ Consider RV as a paradoxical effect of tumour necrosis factor (TNF) α antibodies.
- ▶ The outcome is favourable with local treatment even without suspending TNF α blockers.

Contributors KBA was involved in conception and design; MS in acquisition of data; WBJ in drafting of the article and LZ in final approval.

Competing interests None.

Patient consent Obtained.

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