CASE REPORT

Idiopathic choroidal neovascularisation in pregnancy: treatment options and a successful outcome

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Accepted 3 July 2016

SUMMARY

Choroidal neovascularisation (CNV) is a major cause of visual loss and treatment options aim to halt progression and stabilise vision. We describe a 29-year-old woman who presented with blurred vision and distortion in her left eye while 26 weeks pregnant. She was diagnosed with idiopathic CNV and multiple treatment options were discussed. The patient did not want to undertake any risks from having an anti vascular endothelial growth factor agent during pregnancy. Therefore on discussion with the obstetric team, she elected to have early delivery at 32 weeks followed by a course of intravitreal bevacizumab. Subsequently there was resolution of symptoms and intraretinal and subretinal fluid. CNV is uncommonly seen in pregnancy and there remains no consensus on treatment. We describe the third reported case of idiopathic CNV in pregnancy. Careful patient counselling and close liaison between the ophthalmology and obstetric teams are necessary in this condition to obtain a safe outcome while maximising vision.

BACKGROUND

Choroidal neovascularisation (CNV) arises from the growth of new vessels from the choroidal circulation into the subretinal space via a break in Bruch's membrane, causing significant visual loss. This is most commonly seen in wet age-related macular degeneration, although several aetiologies are documented. CNV is uncommonly seen during pregnancy and has been described in association with high myopia and inflammatory conditions.¹ We describe the third reported case of idiopathic CNV during pregnancy. There remains no consensus on treatment of CNV of any cause during pregnancy and we describe a successful outcome following treatment in this case.

CASE PRESENTATION

A 29-year-old woman presented to the eye emergency clinic with a 2-week history of blurred central vision and distortion in her left eye. She was 26 weeks pregnant, with two previous uncomplicated pregnancies progressing to full term. She described no associated symptoms, had no previous ocular history, was not myopic and her only medical history included hypothyroidism for which she took levothyroxine.

On examination, visual acuity (VA) was 6/6 right eye and 6/36 left eye, anterior segment examination was unremarkable and she had no relative afferent pupillary defect. Fundal examination of the right eye was normal and the left eye revealed a

cream-coloured elevated lesion at the central macula with surrounding haemorrhages (figure 1A–C).

INVESTIGATIONS

An ocular coherence tomography (OCT) scan demonstrated a subretinal abnormality associated with subretinal fluid. Fundus fluorescein angiography (FFA) was arranged from the eye emergency clinic which confirmed the presence of a choroidal neovascular membrane (figure 1D–F), and the patient was referred to the retinal service for further management. However, we advise cautious use of FFA during pregnancy.

TREATMENT

Several potential therapeutic options were discussed:

1. Observation: the natural history of idiopathic CNV in patients under the age of 50 may not have a poor prognosis, with one study reporting final VA of 20/100 or better in 13/19 patients with no treatment,² and a further study reporting 15/20 patients with final VA of 20/60 or better.³
2. Intravitreal injection of an anti vascular endothelial growth factor (VEGF) agent such as bevacizumab (avastin) would be the treatment of choice for CNV, and was our recommended treatment option. However, risks of use during pregnancy are unknown. As a large (149 kD) protein, bevacizumab does not cross the placenta, although there is a theoretical risk to placental vasculature.⁴ Multiple small case reports of its use during pregnancy describe safe outcomes,^{4–6} but one report describes two cases of loss of pregnancy following bevacizumab administration in the first trimester.⁷
3. Intravitreal injection of steroid may have some effect especially if the CNV has an underlying inflammatory cause and has previously been safely used during pregnancy.⁸
4. The patient did not want to take any potential risks associated with the use of an anti-VEGF agent during pregnancy. Therefore after careful counselling of the risks of preterm delivery, the obstetric team suggested an option of early delivery followed by intravitreal anti-VEGF injections.

The patient elected for the last option, and underwent elective caesarean section at 32 weeks, preceded by steroid injection for fetal lung maturation. She had an intravitreal injection of bevacizumab to the left eye at the time of delivery, and further two injections at monthly intervals.

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To cite: De Silva SR, Bibi F, Sim K, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-215787

Figure 1 Colour fundus photograph of the posterior pole of the right eye (A) illustrating normal appearance. Fundus photograph of the left eye (B) with boxed region enlarged in (C) showing a cream-coloured lesion at the macula with surrounding haemorrhage. Image from fluorescein angiogram (D) illustrating a lacy pattern of hyperfluorescence in the central macular region consistent with choroidal neovascularisation, with surrounding hypofluorescence resulting from the presence of haemorrhage. Optical coherence tomography (OCT) scan of the right eye at presentation (E) and at 3 months (G) showing normal appearance. OCT scan of the left eye at presentation (F) illustrating hyper-reflective changes and fluid in the subretinal space causing disruption of normal retinal structure, with resolution of fluid after treatment (H).

OUTCOME AND FOLLOW-UP

The patient's VA improved to 6/9 in the left eye, with resolution of intraretinal and subretinal fluid on OCT scan (figure 1G, H). There were no complications of preterm delivery for the baby in this case. No further treatment has been required with 1 year of follow-up and the patient remains under review to monitor for recurrence.

DISCUSSION

CNV has been described during pregnancy in association with high myopia and inflammatory conditions including punctate inner choroidopathy and presumed ocular histoplasmosis syndrome.¹ Only two cases of idiopathic CNV during pregnancy have been previously described.^{9 10} CNV has a complex aetiology, however, VEGF has an important role in its pathogenesis¹¹ and serum VEGF levels have been demonstrated to be elevated during pregnancy¹² which could potentially contribute to the development of CNV.

We present the third reported case of idiopathic CNV during pregnancy. This patient declined the treatment option

Learning points

- ▶ Choroidal neovascularisation is uncommonly seen during pregnancy and may cause significant visual loss.
- ▶ There remains no consensus on therapy. This patient declined having an antivascular endothelial growth factor agent during pregnancy, and elected for early delivery after extensive discussion with the obstetricians. She had a caesarean section at 32 weeks followed by a course of intravitreal bevacizumab with good outcomes.
- ▶ Treatment options must be carefully discussed with the patient, and close liaison with the obstetric team is required to obtain a safe outcome of pregnancy while maximising vision.

of the use of an anti-VEGF agent while pregnant and therefore a careful decision was made by the obstetric team for early delivery followed by a course of intravitreal

bevacizumab. Good visual outcomes were achieved and there were no complications to the baby of preterm delivery in this case. Of the two previously reported cases, one predated the use of anti-VEGF agents was treated by laser photocoagulation to the site of CNV with good results.¹⁰ The other case presented with mild visual symptoms late in pregnancy that worsened postpartum and was then successfully treated with ranibizumab.⁹

Treatment for CNV during pregnancy aims to halt progression and stabilise vision. Careful patient counselling regarding therapeutic options and close liaison between the ophthalmology and obstetric teams are necessary to obtain a safe outcome while maximising vision.

Contributors SRDS was involved in data collection, drafted the initial manuscript and approved the final manuscript. FB was involved in data collection and approved the final manuscript. KS was involved in and responsible for patient care and approved the final manuscript. MSB was involved in and responsible for patient care, edited and approved the final manuscript.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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