CASE REPORT

Valsalva haemorrhagic retinopathy in pregnancy after yoga

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SUMMARY

A 35-year-old pregnant Caucasian woman at 27 weeks gestation presented with sudden onset painless loss of vision and a large floater in her left eye while doing yoga. She was found to have a dense vitreous haemorrhage with a small preretinal haemorrhage. Ultrasound imaging confirmed the haemorrhage and showed no other retinal damage. She was diagnosed with valsalva haemorrhagic retinopathy and was treated conservatively. After 5 months of follow-up, this woman had had a normal delivery and her haemorrhages and vision loss had resolved.

BACKGROUND

Valsalva haemorrhagic retinopathy usually presents with acute vision loss and occurs when a rise in intrathoracic/abdominal pressure is transmitted to the venous pressure in the eye causing rupture of superficial retinal capillaries. It is usually associated with an episode of straining. Pregnancy may also predispose to this condition.¹ We present an unusual case of valsalva haemorrhagic retinopathy in a pregnant woman after yoga.

CASE PRESENTATION

A 35-year-old pregnant Caucasian woman at 27 weeks gestation presented with sudden onset painless loss of vision and a large floater in her left eye following a head down posture (head below bottom) while doing yoga. The woman was otherwise fit and takes no regular medication. Visual acuity was 6/5 and HM (hand movements) in the right and left eyes, respectively, anterior segments were normal and a dense vitreous haemorrhage

with a small preretinal haemorrhage superior to the optic disc was visualised in the left eye (figure 1).

INVESTIGATIONS

B-scan ultrasound examination revealed no obvious retinal breaks (figure 2). Blood pressure was 131/80 at presentation and blood tests including full blood count and coagulation were normal.

DIFFERENTIAL DIAGNOSIS

A diagnosis of valsalva haemorrhagic retinopathy was made.

TREATMENT

Conservative management was initiated.

OUTCOME AND FOLLOW-UP

Five months following the incident, her visual acuity had improved to 6/5 - 2 in the left eye, her preretinal haemorrhage had completely resolved and her vitreous haemorrhage had almost resolved. She was 8 weeks postpartum and had had a normal vaginal delivery.

DISCUSSION

Valsalva manoeuvres typically result in superficial retinal haemorrhages (subinternal limiting membrane or subhyaloid/premacular) with a predilection for the macula. Subretinal and vitreous haemorrhages can also occur. Reported triggers in pregnant women are vomiting, stooling, heavy lifting and labour.¹

Pregnancy predisposes to valsalva retinopathy through several mechanisms including raised intra-abdominal pressure from an enlarging uterus¹ and an increase in the frequency and intensity of valsalva manoeuvres² (eg, vomiting). Furthermore, several case reports have described valsalva retinopathy during labour, where it is postulated that the severe strains associated with vaginal labour may lead to retinopathy through the same mechanisms.³

The prognosis of this condition is variable although most reported cases describe an excellent visual outcome (6/6 or better).¹⁻⁹ Moderate visual outcomes (6/18 or better) are presumably due to the toxic effects of a premacular haemorrhage on the retinal pigment epithelium or the formation of an epiretinal membrane.^{2 10}

Management options for this condition include observation, neodymium:YAG (Nd:YAG) laser hyaloidotomy and pars plana vitrectomy. Most reported cases in pregnancy were managed

Figure 1 Colour fundus photograph of the left eye showing a vitreous haemorrhage with a preretinal haemorrhage superior to the optic disc (arrow).

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Figure 2 Ultrasound scan (B-scan) of the left eye showing a vitreous haemorrhage (small arrow) with no obvious breaks in the retina (large arrow).

conservatively with a good outcome.^{1–7} Nd:YAG laser hyaloidotomy, which is used to drain the premacular haemorrhage into the vitreous cavity, has also been used successfully with haemorrhage resolution and a return to 6/6 vision.^{8,9} There is some debate as to whether a caesarean section should be considered in a woman who has had valsalva retinopathy during her pregnancy, due to the increased strain associated with vaginal delivery.⁶ However, to date, the literature does not support this with no reported cases of deteriorating valsalva retinopathy after vaginal delivery.³

To our knowledge, valsalva retinopathy has not been reported in the literature in association with yoga. Certain yoga exercises, for example breathing techniques ('pranayama'), involve manoeuvres similar to the valsalva manoeuvre and have been associated with complications such as subcutaneous emphysema, air in the retropharyngeal spaces and pneumomediastinum.¹¹ Our case did not involve any breathing techniques, but did involve posturing with the head below the level of the buttocks. Nevertheless, we still propose that the same mechanism is at play—a rise in intra-abdominal/thoracic pressure coupled with pregnancy leading to ruptured retinal capillaries.

Our case report highlights that valsalva retinopathy should be considered in any pregnant woman who presents with sudden onset painless loss of vision preceded by an episode of straining. The causes of valsalva retinopathy in pregnancy are not restricted to the reported triggers mentioned in the literature, but can result

from fairly innocuous actions such as yoga postures. Our case report also supports conservative management for this condition and adds to the body of evidence that suggests that valsalva retinopathy is not a contraindication for vaginal delivery.

Learning points

- ▶ Ruptured retinal capillaries due to an elevation in intrathoracic/abdominal pressure cause valsalva haemorrhagic retinopathy.
- ▶ Pregnancy predisposes to this condition due to an increase in abdominal pressure due to an enlarging uterus.
- ▶ This condition can occur in pregnancy with very little strain/exertion.
- ▶ This condition is usually treated conservatively with a good outcome.
- ▶ This condition is not a contraindication for vaginal delivery

Competing interests None declared.

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