

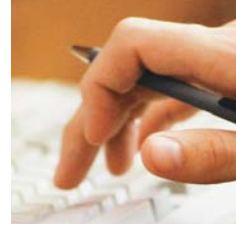


Pregnancy and ocular complications

Eye series - 22

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Case history

Sarah, aged 32 years, attends for a pre-pregnancy health check. She is generally healthy but has a strong family history of diabetes. She wears glasses for moderate myopia. Several of her friends have noticed eye changes during pregnancy and she asks about possible eye problems in pregnancy.

FEEDBACK

Answer 1

The eye is commonly affected during pregnancy. Anterior changes include increased corneal thickness, reduced corneal sensitivity and a steepened corneal curvature. Fluid retention can lead to swelling of the cornea. The patient will complain of blurred vision. Corneal nerve function will also be affected as a result of the oedema. Reduced sensitivity may reduce tear production and increase the possibility of dry eye, infection and localised trauma. Contact lens users may find it increasingly difficult to continue wear during pregnancy as a result. This is relatively common in the last trimester of pregnancy. Corneal oedema will also change the curvature of the front of the eye that can lead to refraction changes. These changes will often be temporary, however they may continue until breastfeeding has ceased. The patient should be aware of possible fluctuations in vision, and that glasses prescribed during this time may become unsuitable. Corrective procedures such as laser refractive surgery are contraindicated during this time. Intraocular pressure has been shown to decrease during pregnancy. Several mechanisms have been suggested for this including increased tissue elasticity that further increases aqueous outflow. This could be advantageous in patients that suffer from glaucoma with improvement of the disease during pregnancy. Central serous retinopathy caused by a

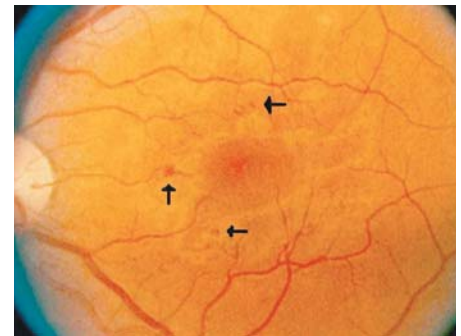


Figure 1. Microaneurysms

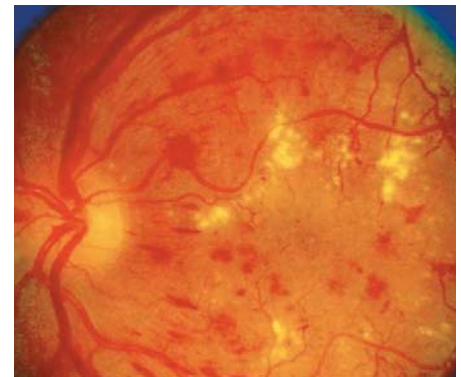


Figure 2. Severe diabetic retinopathy

leakage of fluid between the fine layers of the retina has been reported through pregnancy and will lead to distorted vision. This condition will commonly occur during the last trimester and will resolve spontaneously in the months following delivery. Visual field changes have been reported during pregnancy. Defects include enlarged blind spots, bitemporal loss and generalised constriction of field. Hormone changes may lead to an increase in size of the pituitary gland and thereby compression of the optic nerve at the chiasm. Previously asympto-

Question 1

What ocular side effects may be expected during pregnancy?

Question 2

Can she use eye drops if necessary?

Question 3

What is the likelihood of developing diabetes during pregnancy?

Question 4

Can diabetes lead to serious ocular complications in pregnancy?

Question 5

What ocular monitoring or treatment is required for diabetics in pregnancy?

Question 6

Can other health complications during pregnancy cause eye problems?

matic pituitary tumours may also increase during pregnancy leading to visual acuity and field loss. Patients with visual field loss during pregnancy should be referred to a specialist immediately for further investigation.

Answer 2

The effects of various ocular medications on pregnancy and the health of the fetus are not fully understood, and therefore in the majority of cases should be used with caution. Dry eyes as a result of pregnancy can be treated as necessary with nonpreserved artificial tears that should provide adequate relief without concern of side effects. More viscous lubricants or gels may be required in severe cases.

Commonly used glaucoma medications include beta blockers and more recently prostaglandins. Beta blockers should be discontinued before pregnancy and breastfeeding to avoid systemic complications for the fetus or baby. Prostaglandins are frequently used to induce labour and termination so should be avoided, although studies have not proven any link between use of ocular prostaglandins and birth difficulties.¹ Some antibiotics are considered safe to use during pregnancy including erythromycin and the various quinolones. Chloramphenicol, tobramycin, and tetracycline should be avoided.

Although systemic corticosteroids are usually contraindicated in pregnancy, topical drops have not been shown to cause any particular side effects to the fetus. Instruction to the patient and special care to occlude the punctum when applying the drops will assist blocking further absorption into the body. Mydriatics may be required in various cases of intraocular inflammation. Continued use in pregnant or breastfeeding women is contraindicated due to possible hypertensive effects on the fetus or baby. Occasional use during examination should have no effect.

Answer 3

Gestational diabetes commonly occurs during weeks 24–28 of pregnancy, resolving shortly after delivery and affects up to 8% of pregnant

women. Some women are at higher risk of developing gestational diabetes including those over 30 years, those with a family history of type 2 diabetes, and overweight women. Indigenous Australian and Torres Strait Islander women are also at a higher risk of developing complications during pregnancy.

Answer 4

Gestational diabetes poses a very low risk of developing significant ocular complications. Macular oedema resulting in blurred vision has been reported in patients with gestational diabetes. Patients who have additional health complications such as proteinuria and hypertension have shown a greater tendency to develop this ocular complication. Patients with pre-existing diabetes have been observed to develop related ocular complications during pregnancy. Approximately 10% of diabetic patients with no previous retinal changes (retinopathy) have shown some minor progression during pregnancy. Patients with minor retinal changes such as microaneurysms (*Figure 1*), haemorrhages and cottonwool spots (nonproliferative retinopathy) will generally be stable, although some patients may notice a temporary increase in the condition. These changes often improve toward the third trimester and postpregnancy. Up to 45% of patients with severe changes before pregnancy (proliferative retinopathy) may progress during the course of pregnancy (*Figure 2*).

Answer 5

Changes in vision due to macular oedema usually resolve after delivery, and require no further treatment unless severe. Diabetic retinal changes should be monitored closely by an ophthalmologist during pregnancy. However, due to the temporary nature of the majority of these changes, surgical treatment should be delayed, if possible until after delivery. As the risk of developing severe complications is higher in patients with proliferative retinopathy, prophylactic laser treatment before pregnancy may be indicated. Women with advanced diabetic eye disease should be strongly advised to see

their eye specialist when considering the decision to become pregnant. A baseline ophthalmological examination should be undertaken at a minimum, with follow up each trimester depending on the severity of pre-existing conditions. The patient should be seen immediately if ocular symptoms are noticed.

Answer 6

Pregnancy may lead to several health conditions that can cause eye complications. The onset of clinical hypertension during pregnancy occurs in around 5% of women, commonly after week 20, and can lead to ocular disease.^{2,3} Blurred vision is the commonest symptom, although patients may also complain of distorted vision (photopsia) or scotomas. Clinical signs may include exudates, retinal and vitreous haemorrhages. In severe hypertensive crisis, swollen optic discs may be seen. Occlusive vascular disorders caused by the hypercoagulable state of pregnancy can lead to retinal vein occlusions. This may cause permanent vision and visual field loss.

References

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