Retinopathy of Prematurity (ROP)

Retinopathy of Prematurity (ROP) is an eye disease among babies born before 38 weeks. Eyes develop during the last 12 weeks of pregnancy. Babies born before full term may not have fully developed eyes. ROP is more common in babies that weigh less than 2 pounds 12 ounces (2 ¾ pounds or 1250 grams) at birth.

About ROP

Blood vessels near the retina of the baby’s eyes are one of last parts to develop. The retina is the inner lining of the eye that has nerves. It receives light, turns what is seen into messages, and then sends these messages to the brain. If the eye was a camera, the retina would be the digital film.

- Normal blood vessels start at the back of the eye near the optic nerve and grow out and around the eyeball to the retina and front of the eye.

- When a baby is born early, if the blood vessels have not yet reached the retina, they may stop growing. The retina does not get enough oxygen or nutrients. The blood vessels begin to grow abnormally. The new blood vessels are fragile and can break or bleed easily which causes scarring on the eye. As the scars heal and shrink, the fragile blood vessels can detach the retina from the back of the eye.

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**Testing for ROP**

After birth, all premature babies are tested for ROP and other eye problems. Eye drops are used to dilate a baby’s eyes. The doctor will tell you if there is a concern with eye health.

**What ROP means for my baby**

Your baby’s care depends on the seriousness of ROP. There are five stages:

- **Stage 1:** mildly abnormal blood vessel growth
- **Stage 2:** moderately abnormal blood vessel growth
  
  *Most babies have Stage 1 or 2 and will heal without treatment.* This means the blood vessels go back to normal and vision develops normally.
- **Stage 3:** severely abnormal blood vessel growth
  
  Babies with Stage 3 may heal complete without further treatment and have normal vision. Some may have lazy eye or nearsightedness as the condition heals. Your baby’s doctor may want to treat the condition if there are signs or concerns with the blood vessels.
- **Stage 4:** severely abnormal blood vessel growth that are pulling or have pulled part of the retina away from the eye wall. It is also called a partially detached retina.
- **Stage 5:** severely abnormal blood vessel growth with the retina completely detached.
  
  *Stages 4 and 5 require treatment* to repair the retina to protect vision.

**Treatment**

The most common treatments for ROP are:

- **Cryotherapy:** Blood vessels near the retina are carefully frozen to reverse the abnormal growth. The cold often causes the blood vessels to shrink and go away, replaced with healthy blood vessels.
- **Laser therapy:** A laser is used to burn away the blood vessels near the retina to protect it from being detached. This treatment also works to shrink abnormal blood vessels, replacing with healthy blood vessels.
For the most serious cases of ROP, these treatments may be used:

- **Scleral buckle**: A silicone band can be placed with surgery around the eye to help the retina flatten out against the eye wall. This is used when the retina has started to pull away or prevent detachment. The band is removed over months or years as the eyes grow.

- **Vitrectomy**: This surgery is used to remove some of the fluid inside the eye called vitreous fluid. When the fluid is removed, the surgeon adds saline in its place as a cushion for the eye. The surgery also allows the removal of scar tissue near the retina. This can prevent further detachment, and helps to protect long-term vision.

**Follow Up**

Babies with ROP may be at a higher risk for vision problems. It is important to get regular eye exams as your baby grows and develops to check their eye sight.

▶ Talk to your doctor or others on your health care team if you have questions. You may request more written information from the Library for Health Information at (614) 293-3707 or email: health-info@osu.edu.