Anophthalmia and Microphthalmia

Anophthalmia and microphthalmia are often used interchangeably. Microphthalmia is a disorder in which one or both eyes are abnormally small. Anophthalmia is the absence of one or both eyes. These rare disorders develop during pregnancy. They can be associated with other birth defects. Other names for these disorders are:

- Anophthalmos.
- Microphthalmos.
- Small eye syndrome.

CAUSES

Causes of these conditions may include:

- Genetic changes (*mutations*).
- Abnormal chromosomes.
- Environmental factors may increase the risk, such as exposure to:
  - X-rays.
  - Chemicals.
  - Drugs.
  - Pesticides.
  - Toxins.
  - Radiation.
  - Viruses.
- Sometimes the cause cannot be determined.

TREATMENT

- There is no treatment that will create a new eye or restore vision for severe cases.
- Some less severe forms of microphthalmia may benefit from medical or surgical treatments.
- In almost all cases, improvements to appearance is possible.
  - Children can be fitted for an artificial (*prosthetic*) eye for cosmetic purposes. This also promotes socket growth.
- A newborn with the disorder will need to visit several eye care professionals. These include those who specialize in:
  - Pediatrics.
  - Vitreoretinal disease.
  - Orbital and oculoplastic surgery.
  - Ophthalmic genetics.
  - Prosthetic devices for the eye.
- Each specialist can provide information and possible treatments resulting in the best care for the child and family.
  - The specialist in prosthetic diseases for the eye will make *conformers*. These are plastic structures that help support the face and encourage the eye socket to grow. As the face develops, new conformers will need to be made. A child with Anophthalmia may also need to use expanders in addition to conformers to further enlarge the eye socket. Once the face is fully developed, prosthetic eyes can be made and placed. Prosthetic eyes will not restore vision.

HOW DO CONFORMERS AND PROSTHETIC EYES LOOK?

A painted prosthesis that looks like a normal eye is usually fitted between ages one and two. Every few weeks a child will progress to a larger size conformer until about two years of age. If a child needs to wear conformers after age two, the conformers will be painted like a regular prosthesis. This will give the appearance of a normal but smaller eye. The average child will need three to four new painted prostheses before the age of 10.

HOW IS MICROPHTHALMIA MANAGED IF THERE IS SOME VISION IN THE EYE?

Children with microphthalmia may have limited sight (*residual vision*). In these cases, the good eye can be patched to strengthen vision in the other eye. A prosthesis can be made to cap the affected eye. This will help with cosmetic looks (*appearance*) and keep the remaining sight.

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