Congenital defects of the eye

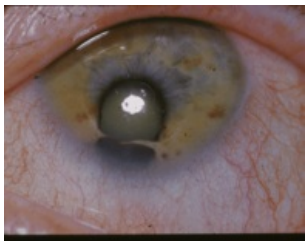
Due to the relative complexity of development, there are many different developmental defects, but their frequency is not high. We consider the period from the 20th-40th day as a critical period in terms of eye development of the intrauterine development.

Congenital retinal detachment

Congenital retinal detachment is caused by non-fusion of the inner and outer layers of the eyeball, leaving the intraretinal space unclosed. We distinguish between partial and complete separation of the neuronal and pigment layer of the retina. This defect can occur, for example, due to the uneven growth of both layers of the retina, or it can be a secondary condition, when the originally fused layers split secondarily.

Coloboma

Colobomas are cleft defects arising when the choroidal cleft fails to close in the sixth week of intrauterine development. This condition most often affects the iris (coloboma iridis), when a notch is developed in the lower sector of the iris, due to which the pupil has the shape of a keyhole. However, coloboma can also penetrate deeper and affect the ciliary body, choroid or optic nerve.



Coloboma

Membrana iridopupillaris persistens

If the central part of the iridopupillary membrane does not disappear, the pupil does not fully form, this membrane remains in the pupil in front of the lens. It mostly persists in the form of cobwebs and its presence does not interfere with vision, the excess tissue usually atrophies.

Congenital Glaucoma

Increased intraocular pressure in newborns is usually caused by impaired outflow of aqueous humor due to faulty development of the sinus venosus sclerae. As a rule, this is a hereditary disorder, but the cause can be rubella infection of the mother in early pregnancy.

Congenital Cataract

It is a congenital opacity of the lens, the cause of which is usually genetic disposition. However, turbidity can also occur if the mother is infected with rubella during the critical period (from the 4th to the 7th week of the intrauterine development of the embryo). The cause of this damage to the lens can also be congenital galactosemia, when clouding of the lens appears approximately in the second week after birth, because galactose from breast milk appears in the newborn's blood, which cannot be adequately processed.

Aphakia, aniridia

Congenital absence of the lens, aphakia, or congenital absence of the iris, aniridia, are disorders that are usually caused by a disorder in induction during the development of these organs. Both disorders are very rare.

Persistence of hyaloid artery

The distal part of the hyaloid artery usually disappears during development, but there may be a condition where a visible band of cells remains behind it or a cyst develops.

Congenital eyelid ptosis

Drooping eyelids are usually caused by a disorder in the development of the levator palpebrae superioris muscle or a disorder of the III. cranial nerve (nervus oculomotorius). It also occurs as a symptom of Horner's syndrome (eyelid ptosis, miosis, enophthalmus).

Cryptophthalmia

The disorder is caused by the absence of eyelids, leaving the eye covered with skin. The eyeball reaches small dimensions, the cornea and conjunctiva are usually not present at all. Eyelashes and eyebrows are also usually missing.

Cyclopia

Cyclopia - a condition where the eyes partially or completely fuse - it is a rare anomaly. The single eye is then placed medially in the common orbit. This defect, like synophthalmia - the secondary fusion of two separate eyes - has a number of transitional forms. It is associated with defects incompatible with life Brain and Skull.

Microphthalmia

The reduction of the eye can either occur under the influence of other defects of the eye structures, or the eye can be completely developed in a reduced form while preserving all the structures. The affected side of the face is usually underdeveloped, the defect may be associated with other defects – for example, cleft face or trisomy 13 (Patau syndrome). Simple microophthalmias arise as a result of infectious influences - for example Toxoplasma gondii, herpes simplex or infection with cytomegalovirus. In the case of eye development disorder in the fourth week (when the eye sac is formed), severe microophthalmia occurs, which is accompanied by the absence of a lens and the entire eye is essentially undeveloped. If the defect occurs during the eighth week or later, microphthalmia occurs with minor associated defects.

Anophthalmia

A condition where all eye tissues are missing. Eyelids tend to be developed, but not eyeballs. In some cases, traces of ocular tissues are recognizable histologically. We Ddistinguish between primary and secondary anophthalmia. Primary anophthalmia occurs when the development of the eye stops in the fourth week, so there is no formation of an eye sac. Secondary is then associated with faulty brain development and thus represents one of several defects.

Links

Related Articles

- Eye (histology)
- Development of the visual system

References

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