

Refrakcione anomalije kod dece predškolskog uzrasta

Refraction Anomalies in Preschool Children

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Apstrakt

Zdravo oko podrazumeva kvalitetnu vidnu oštrinu na daljinu i blizinu bez napora. Oko predstavlja vrstu mračne komore (*camera obscura*) sa unutrašnje strane, obloženu pigmentnim slojem. Svetlosni zraci u unutrašnjost oka ulaze kroz zenicu koja automatski reguliše njihovu količinu. Sa druge strane složeni, sabirni optički sistem omogućava stvaranje lika predmeta na mrežnjači, tačnije u makuli (foveji). Ovde deluju dva faktora zajedno: prelomna moć optičkog sistema i dužina oka. Odnos između dužine oka i prelomne moći sočiva bez učešća akomodacije naziva se refrakcijom. Izučavanje refrakcije i akomodacije podrazumeva primenu optičkih zakona o prelamanju svetlosti na živom oku. Stanje kada su dužina oka i prelomna moć sočiva podešeni tako da omogućavaju stvaranje jasnog, oštrog lika u makuli (foveji) naziva se emetropija.

Refrakcione anomalije (ametropia) nastaju kada je poremećen odnos između dužine oka i prelomne moći sočiva. Poremećaj refrakcije može biti kornealnog, lentalnog ili aksijalnog porekla.

Kornealna ametropija:

- kornealna miopija – kod keratokonusa i keratoglobusa,
- kornealna hipermetropija – kod zaravnjenja rožnjače (*cornea plana*),
- kornealni astigmatizam – usled različite zakrivljenosti rožnjače u svim meridijanima.

Lentalna ametropija:

- lentalna miopija – kod pomeranja sočiva napred (subluxatio) usled bubrenja sočiva kod katarakte ili skleroze nukleusa sočiva,
- lentalna hipermetropija – najčešće usled afakije, a ređe usled pomeranja sočiva unazad.

Aksijalna ametropija:

- miopija – bulbus je izdužen i osovina može da bude čak 25 – 30 mm,
- hipermetropija – bulbus je smanjen, postoji blag stepen mikroftalmusa.

Najčešće se javljaju aksijalne, zatim lentalne, a najređe kornealne refrakcione anomalije. U svim slučajevima stvara se nejasan lik na mrežnjači. Predstavljaju najčešće promene koje se sreću u oftalmološkoj praksi, a to su: dalekovidnost – hipermetropi, kratkovidnost – myopia i astigmatizam – astigmatizmus.

Kod emetropije, miopije, hipermetropije prelomljeni zraci se seku u jednoj tački i oni predstavljaju osnovne vidove refrakcije, dok je astigmatizam kombinacija osnovnih vidova refrakcije.

Abstract

A healthy eye implies quality visual acuity at a distance and near without effort. The eye is a type of dark chamber (*camera obscura*) covered with a pigment layer on the inside. Light rays enter the interior of the eye through the pupil, which automatically regulates their amount. On the other hand, a complex, collecting optical system enables the creation of an image of an object on the retina, more precisely in the macula (fovea). Here, two factors work together: the refractive power of the optical system and the length of the eye. The relationship between the length of the eye and the refractive power of the lens without the participation of accommodation is called refraction. The study of refraction and accommodation implies the application of laws of optics on the refraction of light on the living eye. The condition when the length of the eye and the refractive power of the lens are adjusted in such a way as to allow the creation of a clear, sharp image in the macula (fovea) is called emmetropia.

Refractive anomalies (ametropia) occur when the relationship between the length of the eye and the refractive power of the lens is disturbed. The refractive error can be of corneal, lental or axial origin.

Corneal ametropia:

- Corneal myopia - in keratoconus and keratoglobus,
- Corneal hypermetropia - when the cornea is flattened (*cornea plana*),
- Corneal astigmatism - due to the different curvature of the cornea in all meridians.

Lens ametropia:

- Lental myopia - when the lens moves forward (subluxatio) due to swelling of the lens due to cataract or sclerosis of the lens nucleus,
- Lens hypermetropia - most often due to aphakia, and less often due to backward movement of the lens

Axial ametropia:

- Myopia - the bulb is elongated and the axis can be as much as 25-30mm
- Hypermetropia - the bulb is reduced, and there is a mild degree of microphthalmus

The most common are axial, then lens, and the rarest corneal refractive anomalies. In all cases, a vague image is created on the retina. They represent the most common changes encountered in ophthalmological practice, namely: farsightedness - hypermetropia, shortsightedness - myopia and astigmatism - astigmatism.

In emmetropia, myopia, and hypermetropia, the refracted rays intersect at one point and they represent the basic types of refraction, while astigmatism is a combination of the basic types of refraction.

Miopia – kratkovidost

Kod kratkovidosti se javlja jaka prelomna moć sočiva i velika dužina oka. Predmeti koji se nalaze u daljini ne mogu se videti jasno, jer mesto stvaranja jasnog lika se nalazi ispred mrežnjače (makule). U kliničkom pogledu kratkovidost se deli na: benignu (školsku) i malignu (progredirajuću) miopiju.

Hypermetropia – dalekovidost

Kod dalekovidosti se javlja slaba prelomna moć sočiva i mala dužina oka. Mesto stvaranja jasnog lika se nalazi iza mrežnjače (makule). Postoje sledeći oblici dalekovidosti: totalna hipermetropija, latentna hipermetropija i manifestna hipermetropija.

Astigmatizmus

Refrakciona anomalija koja je uslovljena nepravilnom zakrivljenošću rožnjače tako da je prelomna moć rožnjače različita u raznim meridijanima. Postoji pravilan (regularis) i nepravilan (irregularis) astigmatizam. Pravilan astigmatizam može biti: prost astigmatizam (as. simplex), složeni (as. compositum) i mešoviti (as. mixtum).

Postoje slučajevi da refrakcija oba oka nije ista – anisometropia. Jedno oko može da bude emetropno, a drugo da ima bilo koji vid refrakcije.

Refrakcione anomalije se leče korekcijskim staklima (konkavna, konveksna, cilindrična, sferocilindrična), kontaktnim sočivima i refraktivnom hirurģijom.

Refrakcione anomalije se sreću u 2–4% dece predškolskog uzrasta. Ako se ne otkriju na vreme i adekvatno ne koriguju, dovede do slabovidosti i razrokosti.

Cilj ovog rada je bio da se analiziraju refrakcione anomalije kod dece predškolskog uzrasta na teritoriji Opštine Kuršumljaja. Pregledano je 141 dete u Očnoj ambulanti Doma zdravlja. Bilo je 76 dečaka i 65 devojčica. Najčešća refrakciona anomalija bila je kratkovidost, zatim astigmatizam, pa dalekovidost. S obzirom na to da je veliki broj dece bez simptoma, rano otkrivanje i adekvatna korekcija predstavljaju glavni cilj u borbi protiv slabovidosti.

Myopia - short-sightedness

In myopia, there is a strong refractive power of the lens and a large length of the eye. Objects located in the distance cannot be seen clearly because the place of creation of a clear image is located in front of the retina (macula). Clinically, myopia is divided into benign (school) and malignant (progressive) myopia.

Hypermetropia - farsightedness

In farsightedness, there is a weak refractive power of the lens and a short length of the eye. The place of creation of a clear image is located behind the retina (macula). There are the following forms of farsightedness: total hypermetropia, latent hypermetropia, and manifest hypermetropia.

Astigmatism

A refractive anomaly is caused by the irregular curvature of the cornea so that the refractive power of the cornea is different in various meridians. There is regular (regularis) and irregular (irregularis) astigmatism. Regular astigmatism can be simple astigmatism (as. simplex), complex (as. compositum), and mixed (as. mixtum).

There are cases where the refraction of both eyes is not the same - anisometropia. One eye can be emmetropic, and the other can have any type of refraction.

Refractive anomalies are treated with corrective glasses (concave, convex, cylindrical, spherocylindrical), contact lenses, and refractive surgery.

Refractive anomalies are found in 2-4% of children of preschool age. If they are not detected in time and not adequately corrected, they lead to low vision and farsightedness.

The aim of this work was to analyze refractive anomalies in children of preschool age in the territory of the Municipality of Kuršumljaja. 141 children were examined in the eye clinic of the Health Center. There were 76 boys and 65 girls. The most common refractive anomaly was nearsightedness, followed by astigmatism and farsightedness. Given the large number of children without symptoms, early detection and adequate correction are the main goals in the fight against low vision.