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QUESTION:

A short note on eye defects

Myopia: (nearsightedness) This is a defect of vision in which far objects appear blurred but near objects are seen clearly. The image is focused in front of the retina rather than on it usually because the eyeball is too long or the refractive power of the eye's lens too strong. Myopia can be corrected by wearing glasses/contacts with concave lenses these help to focus the image on the retina. your eyeball is too long or the cornea -- the protective outer layer of your eye -- is too curved, the light that enters your eye won't focus correctly. Images focus in front of the retina, the light-sensitive part of your eye, instead of directly on the retina. This causes blurred vision. Doctors call this a refractive error.

High myopia: It's a more serious form of the condition, where the eyeball grows more than it is supposed to and becomes very long front to back. Besides making it hard to see things at a distance, it can also raise your chance of having other conditions like a detached retina, cataracts, and glaucoma.

Degenerative myopia: Also called pathological or malignant myopia, it is a rare type you usually inherit from your parents. Your eyeball gets longer very quickly and causes severe myopia, usually by the teenage or early adult years. This type of myopia can get worse far into adulthood. Besides making it hard to see things at a distance, you may have a higher chance of having a detached retina, abnormal blood vessel growth in the eye (choroid neovascularization), and glaucoma.

Symptoms:

Headaches

Squinting

Eye strain

Eye fatigue when you try to see objects more than a few feet away

Children with myopia often have trouble reading the blackboard at school.

Treatment;

*An eye exam can show you if you're myopic. Glasses, contacts, or refractive surgery can usually correct the problem.

*When you have myopia, your prescription for glasses or contact lenses will be a negative number. The more negative the number, the stronger your lenses will be. For example, -3.00 is stronger than -2.50.

*Your prescription helps the eye focus light on your retina. That clears up your vision.

*Eye surgery can improve your vision so much you may no longer need to wear glasses or contacts. The most common procedures for myopia are

2)Hypertropia; is a condition of misalignment of the eyes (strabismus), whereby the visual axis of one eye is higher than the fellow fixating eye. Hypotropia is the similar condition, focus being on the eye with the visual axis lower than the fellow fixating eye. Dissociated vertical deviation is a special type of hypertropia leading to slow upward drift of one or rarely both eyes, usually when the patient is inattentive.

Causes;

Hypertropia may be either congenital or acquired, and misalignment is due to imbalance in extraocular muscle function. The superior rectus, inferior rectus, superior oblique, and inferior oblique muscles affect the vertical movement of the eyes. These muscles may be either parietic, restrictive (fibrosis) or overactive effect of the muscles. Congenital cases may have developmental abnormality due to abnormal muscle structure, usually muscle atrophy / hypertrophy or rarely, absence of the muscle and incorrect placement. Specific & common causes include:

Superior oblique Palsy / Congenital fourth nerve palsy

Inferior oblique overaction

Brown's syndrome

Duane's retraction syndrome

Double elevator palsy

Fibrosis of rectus muscle in Graves Disease (most commonly inferior rectus is involved)

Surgical trauma to the vertical muscles (e.g. during scleral buckling surgery or cataract surgery causing iatrogenic trauma to the vertical muscles).

Symptoms;

- *Trouble focusing on nearby objects
- *Headaches
- *Blurry vision
- *Eye strain
- *Fatigue or headache after you do a close-up task such as reading

If you have these symptoms when you wear glasses or contacts, you may need a new prescription.

Hyperopia Diagnosis

All it takes to diagnose farsightedness is a basic eye exam. Your doctor will have you read a chart across the room. If that test shows hyperopia, they'll use a device called a retinoscope to look at how light reflects off your retina. They'll also use a phoropter – a testing device -- to help them decide on the best prescription for glasses or contacts

Treatment;

- *Correction of refractive errors by glasses
- *Prism therapy (if tolerated, to manage diplopia)
- *Vision Therapy
- *Patching (mainly to manage amblyopia in children and diplopia in adults)
- *Botulinum toxin injection
- *Surgical correction

Surgical correction of the hypertropia is desired to achieve binocularity, manage diplopia and/or correct the cosmetic defect. Steps to achieve the same depend on mechanism of the hypertropia and identification of the offending muscles causing the misalignment. Various surgical procedures have been described and should be offered after careful examination of eyes, including a detailed orthoptic examination focussing on the disturbances in ocular motility and visual status. Specialty fellowship trained pediatric ophthalmologists and strabismus surgeons are best equipped to deal with these complex procedures.