Astigmatisms impact in routine life

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Abstract:

Purpose-To analyzes the visual and functional impact in astigmatic individual in routine life.

Resent finding:

Astigmatism is the most common refractive error now days. Some studies anticipated the prevalence of astigmatism in children to be as high as 34%, which may increase with age.

Blurred or distorted vision is a symptom of astigmatism, person with astigmatism may feel difficulties while attempting to perform certain tasks like Driving –which may presents a particular challenge for individual, but not all astigmatic individuals feel the same. As we know, in a normal or emetropic eye, light passes through the different media of eye such as cornea and lens, and then reaches a single focal point on a end part of eye, which known as retina, when everything works properly, and all rays focus accurately onto the retina, allowing sharp and clear vision.

Astigmatic eyes are a condition of refractive error. Which may occur due to several factors like, most common is a physically lengthened eye. This "football" shape, as light passes through the different media of eye such as cornea and lens, and then not reaches as a single focal point on retina, hence all rays are not focus accurately onto the retina which may not allow sharp and clear vision.

The impacts of different aspect of astigmatism, at various points of view were scrutinized keeping in mind the end goal to decide the base level of astigmatism that brought about a decrement in visual implementation. Barely any examinations has appeared to decrease separate visual acuity and close work and also useful errands of everyday activities, for example as reading and driving (Higgins et al., 1998; Chung et al., 2007; Wood et al., 2014[1,2,3]).

While there has been broad research into the effects of spherical refractive distort on clinical, visual and functional tests of visual acuity, but there is only limited research investigate the effects of blurred vision caused by uncorrected astigmatic ametropia and this is an important issue given the relatively high prevalence of astigmatism in the population (Fan et al., 2004; Read et al., 2007; Hashemi et al., 2011[4, 5, 6,]).

Various studies have investigated the astigmatism impact on visual acuity (Villegas et al., 2006), and visual, functional performance investigated such as reading (Casagrande et al., 2013[7, 8]). However, investigation of the effect of a range of astigmatic powers and axis orientations on these measures has not been undertaken and was one of the main aims of the studies

Distinguish Astigmatism

Distinguish astigmatism is a routine procedure of eye examination by an optometrist or Ophthalmologist. As astigmatism can strongly affect visual acuity, optometrist regularly deduct it while analyzing visual status using letter charts and other procedure like astigmatism fan, dial, Placido's disc, stenopic slit etc to check the qualitative refractive error. As difficulty in reading smaller letters is usually indication of a vision disorder. Which would deduct by an optometrist or ophthalmologist.

Keratometer is a instrument by which we can deduct the corneal astigmatism, which has recently become more common in ophthalmic clinics, it transmit light on an eye, then measure its reflection in order to determine the shape of the cornea. By this instrument we can measure the corneal astigmatism (quantitative measurement) which diagnose by illuminating abnormally shaped eyes.

Management of Astigmatism.

The basis principal of correction of refractive errors like myopia and hypermetropia are equally applicable to the correction of astigmatic error. Small error produces symptoms. Meticulous subjective and objective refraction should be perform and prescribe as per best corrective visual acuity. In high astigmatic error there may be considerable difficulties in effecting correction like asymmetric correction between two eyes may leads to an artificial hetrophoria when looking through corrective lenses in any position except center of lens, also there may be change in the size of image like minification, magnification distorted as well. If the astigmatic correction is high or if we prescribe the 1st time the astigmatic correction, it may well advice to worn for spatial distortion like up and downs in the floor and tilting of horizontal surface, the user adjust him/herself and distorted image symptoms may disappear after short time.

In high astigmatism error we may prescribe contact lens, which may difficult to fit/adapt by 1st time user but once accurately fit /adapt, will give very good and satisfactory results. We can also opt for surgical correction.

A different option for correcting astigmatism is a corneal procedure called Ortho-k or Orthokeratology**,** it a painless, noninvasive procedure, the patient wears a series of specially designed rigid contact lenses to gradually reshape the curvature of the cornea. Laser surgery can also treat some types of astigmatism. The laser changes the shape of the cornea by removing a small amount of eye tissue.

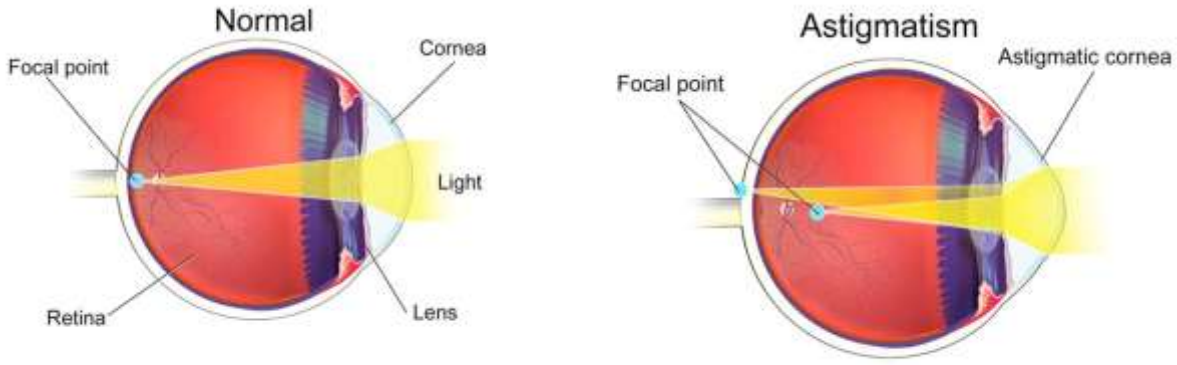
Introduction:

Astigmatism is a common vision condition that causes blurred vision. It occurs when the cornea (the clear front cover of the eye) is irregularly shaped or sometimes because of the curvature of the lens inside the eye. An irregularly shaped cornea or lens defocuses the light

properly on the retina which is also known as the light-sensitive surface at the back of the eye. As a result, vision becomes blurred at any distance. This can lead to eye discomfort and headaches.

Most people have some amount of astigmatism. Small amount of astigmatism usually doesn't affect vision or daily routine activities and it may not require treatment as well. Mos of the time astigmatism occurs with other visual conditions it may be associate with spherical refractive errors, spherical refractive error may be myopic or hyperopic.

The cause of astigmatism is unknown. It may be genetic and is usually present from birth. It can decrease or increase over time. A routine eye examination may deduct the astigmatism after thoroughly eye examination procedure optometrist/ophthalmologist may prescribe spectacle or that correct the astigmatism by altering the way light enters in the eye. it may be other procedure like prescribe Contact lens or treat by Orthokeretology(Ortho-K). It's a painless, noninvasive procedure; the patient wears a series of specially designed rigid contact lenses to steadily re-shape the curvature of the cornea. Laser surgery can also treat some types of astigmatism. The laser changes the shape of the cornea by removing a small amount of eye tissue.



Astigmatic cornea distorts the focal point of light in front of and/or behind the retina

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CAUSES ASTIGMATISM

Blurred or distorted vision is a symptom of astigmatism, person with astigmatism may feel difficulties while attempting to perform certain tasks like Driving –which may presents a particular challenge for individual, but not all astigmatic individuals feel the same. As we know, in a normal or emetropic eye, light passes through the different media of eye such as cornea and lens, and then reaches a single focal point on the end part of eye, which is called the retina, when everything works properly, and all rays focus accurately onto the retina, allowing sharp and clear vision.

In addition, the curvature of the lens inside the eye can change, resulting in an increase or decrease in astigmatism. This change frequently occurs in adulthood and can precede the development of naturally occurring cataracts. Sometimes astigmatism may develop following an eye injury or eye surgery.

Astigmatism also occurs due to a relatively rare condition called keratoconus in which the cornea becomes progressively thinner and cone-shaped. This result in a large amount of astigmatism, which causes poor vision, which cannot be clearly corrected with spectacles. People with keratoconus usually need contact lenses for clear vision and in due course may need a corneal transplant.

DRIVING DIFFICULTIES

Even with correction may make driving a risky activity. Which may cause a hazard in night driving because in night driving , astigmatic vision and may cause unwanted reflection from opposite side vehicle, possibly due to pupil dilation in low light conditions and irregular shape of cornea , which can intensify focal difficulties.

Even during the day, people with astigmatism can experience problems with light and some may see halos, blurring, and severe distortion in certain conditions. sometimes to the point that activities that require a high degree of visual acuity – such as driving or continues working on the computers – become very difficult .

Most astigmatic individuals wear either spectacles or contact lenses. Spectacle may create glare, which is especially noticeable with artificial lighting after dark. Individual may complaint with Contact lenses due to end of the day contact lens may dehydrate and due to dryness, it may cause difficulties in night driving.

Driver with Astigmatism

If night driving is a particular concern, then certain steps may help. Glasses with anti-reflective coating may good option to reduce glare in night , if the individual is not satisfied with the transparent anti reflection coating may opt for ambarmatic (yellow) tint with anti reflection coating, which would increase contrast in night driving. For contact lens user use the lubrication drop or good quality lenses with may give max lubrication to the eye.Despite all advances in corrective technology, some individuals with astigmatism may still find difficulties while diving at night.

Driving without astigmatic correction and with astigmatic correction.

Conclusion:

Country like India are considered fastest growing in health care and our Government is coming forward to eliminate the avoidable blindness and adopting new treatment plan to improve the quality of life for their residents. Hence its increasing the responsibility of health care providers for implementation of various astigmatism and Ametropia management plans. So if we plan some research time to time and outcome can be taken in positive way to help global initiative of vision 2020 or Right the Sight. Our Indian Government is also investing more into research and developed activities for introducing better treatment plan for avoidable blindness at very ostensible value.

Blurred or distorted vision is the most common complaint by an individual. The actual severity of the symptom is highly unpredictable – people with calm cases may go through life without even noticing any defects in their vision, while more severe astigmatism often requires extensive correction and may notice by individual very easy. As we have done the screening at few corporate houses some fleet drivers and found that small amount astigmatism is not noticed by individuals and they are not aware of such correction, so when we have done the refraction and visualize the work performance, we found that if we do regular eye examination at the school going age and if any correction require we should prescribe the correction to avoid any visual un-development. In our study 450 individual require spectacle correction among 1200 screening in corporate houses at Jaipur ,165 deducted 1st time astigmatism and 285 require spherical correction along with astigmatic correction. When we have given spectacle to all 1st time deducted refractive errors, we found that work efficiency has been improved and employee is working more efficient at there work.

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