Keratoconus

Keratoconus (literally, conical cornea) is a thinning of the central zone of the cornea, the front surface of the eye. As this happens, the normal pressure within the eye makes the thinner area of the cornea bulge forward slightly.

Keratoconus is an inherited disorder which occurs in about one in 3000 people. It is a recessive condition, requiring genetic factors to be inherited from both parents, so the chances of the children of a person with keratoconus also having the condition are low (around one in 50).

Keratoconus usually becomes apparent between the ages of 10 and 25 years, and is sometimes associated with other conditions such as allergies, infantile eczema, asthma, reduced night vision, double jointedness, and in rare instances, with occasional short bouts of chest pain.

Because keratoconus is a genetic condition it cannot be treated with drugs, but glasses and contact lenses can give good vision, and surgery can be used to treat severe cases. Keratoconus does not cause blindness. Interestingly, about 60 per cent of people with keratoconus go on to tertiary education, compared with 15 per cent of the population as a whole.

The initial symptoms of keratoconus are blurred vision, caused by short-sightedness and astigmatism. These are caused by the cornea changing shape as it bulges forward, and are often indistinguishable from shortsightedness caused by other factors. At this stage, good vision generally can be obtained with spectacles.

As keratoconus progresses, the shape of the cornea becomes irregular, and it is not possible to correct the vision with spectacles alone. In such cases, rigid contact lenses can be used to provide good vision. The contact lenses essentially provide a new, regular front surface for the eye, eliminating the distortions caused by the keratoconus.

Because the cornea continues to change shape, it is important that people with keratoconus have regular examinations to ensure that their contact lenses fit correctly. A poorly-fitting contact lens can cause abrasions and scarring.

In approximately 85 per cent of cases of keratoconus the condition gradually stabilises by the age of 35 years, although exceptions are always possible. In the remaining 15 per cent the condition progresses, and vision and tolerance to contact lenses may deteriorate. For members of this group, a corneal graft may be necessary.

A corneal graft or keratoplasty is an operation in which the thinned area of the cornea is removed and replaced by normal tissue transplanted from a donor cornea. Corneal grafting is used only when all other methods for correcting vision have failed to provide good vision. The success rate for corneal grafts is extremely high, although most people will still need to wear glasses or contact lenses.

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