Artiflex Lens

Over the past few years the Artiflex lens has been developed from an earlier lens design called Artisan. Artiflex lenses are made from a combination of an ultraviolet absorbing Polysiloxane optic, and rigid haptics (the part that attaches the lens to the iris) made from Perspex CQ UV (polymethylmethacrylate - PMMA). These lenses can be used to correct myopia (from -2D to -14.5D), and astigmatism can now also be corrected with a toric version of the lens.

Since the range of optical defects correctable by the Artiflex lens overlaps with that which can be achieved with LASIK, or with Artisan, or Implantable Contact Lens (ICL) surgery, for some people there may be a choice between the treatments, decided upon by the following factors:

LASIK advantages:

Easily adjusted optical outcome and generally effective correction of astigmatism.
Possibly less risk of severe adverse complications as the surgical procedure does not penetrate the eye.
Cheaper than Artiflex lens surgery.

LASIK disadvantages:

LASIK may be contra-indicated if the cornea is too thin, or if there are topographic signs suggestive of keratoconus.
LASIK causes irreversible changes to the corneal structure, and if too much corneal tissue is removed the cornea may undergo ectasia leading to poor vision and loss of correction.

The quality of the optical correction with LASIK may sometimes not be as good as that achieved by an Artiflex lens, especially in high degrees of myopia. This is because the final optical surface created can be less regular than that of a manufactured lens, due to variables in the surgical procedure and the wound healing process.

If needed, fitting of contact lenses may be difficult post-operatively, due to the irregular shape of the cornea.

Artiflex advantages:

Potentially reversible.
Good quality correction of spherical or astigmatic optical defects.
No change in ease of contact lens correction post-operatively, should this is needed.
Possibility of adjustment or correction of final optical outcome by LASIK surgery (Bioptics).
Because the lens is tethered to the iris, the pupil size in low light conditions will be slightly constrained, and this helps to diminish the occurrence of glare from the edge of the Artiflex lens optic.

Artiflex disadvantages:

Intraocular lens implantation carries an extremely small but unavoidable risk of introduction of infection into the eye. This is a very serious complication which can lead not only to loss of vision, but even to loss of the eye.

Intraocular surgery also carries the risk of damage to other structures in the eye, such as the lens, the iris, and the trabecular meshwork, giving potential complications of cataract, glaucoma, iritis, and also possible retinal complications such as cystoid macular oedema and retinal detachment.

Intraocular surgery causes some irreversible loss of corneal endothelial cells. Loss of these cells diminishes the functional reserve of the cornea, and could ultimately contribute to corneal failure due to endothelial cell depletion.

Because of the close proximity of the Artiflex lens to the cornea, corneal complications may possibly be more frequent than with ICL implantation, especially if there is loss of fixation of the Artiflex lens to the iris.

The optical outcome may not be accurate, and can only be adjusted by replacement of the Artiflex lens or additional surgery such as LASIK.

The quality of vision obtained in low light conditions may be impaired if the size of the dilated pupil exceeds the size of the optical portion of the Artiflex lens.

Since the long-term acceptability of Artiflex lenses has not been established, there remains the possibility that lenses implanted in young adults now, will need to be surgically removed at some point in the future, and such further surgery would add to the risk of potential complications.

Because of the risk of complications such as glaucoma, insertion of an Artiflex lens makes regular long term follow-up advisable.

The presence of the Artiflex lens may be noted on close inspection of the eye.

Artiflex surgery is more expensive than LASIK.

Artiflex Lens Surgery

The insertion of the Artiflex lens is carried out with either local or general anaesthetic. In a local anaesthetic, drops are put into the eye to constrict the pupil and anaesthetise the cornea. With local peribulbar anaesthesia, an injection of local anaesthetic is made beside the eye. A 3.2 mm incision is made at the edge of the cornea, and the lens is inserted into the eye and carefully clipped to the iris tissue.

When an Artiflex lens has been inserted in position in front of the pupil, it can impede the flow of aqueous fluid to some extent (the front part of a normal eye (anterior segment) is filled with aqueous fluid which circulates from the ciliary body, through the pupil, to the trabecular meshwork in the angle between the iris and the cornea). To avoid problems of aqueous obstruction, a small opening (iridotomy) is created in the iris to allow some of the aqueous fluid to by-pass its normal route through the pupil.

Since the surgical incision is small it is usually self sealing, so no sutures are required. After the operation antibiotic drops are given to help prevent infection, and steroid drops to suppress inflammation. Visual recovery is rapid, with functional vision virtually straight away and stabilisation of refraction after some weeks.