

typical package comprising a sealed vial 100 containing a lens implant 102 and a quantity of physiologically acceptable saline solution 104 all contained within a flexible overpouch 106 is shown in FIG. 10.

The diameter of the optical portion 12 of a lens implant in accordance with the present invention is preferably from 3 to 10 mm, more preferably from 4 to 7 mm. The overall length of the lens implant may be from 8 to 15 mm. The non-variable optical surface of the optical portion 12 preferably ranges from plano to 10mm in radius of curvature, preferably from 15 to 30 mm radius of curvature. As stated above the radius of curvature of the optical surface of varying power is varied to adjust the optical power of the lens implant.

The lens implant of the present invention is particularly envisaged for use where a cataract has been removed. However, the lens implant of the present invention may be used to correct refractive errors and myopia without prior cataract extract. Thus, the lens implants of the present invention usually range from plano-convex to biconvex but as shown in FIG. 5, the posterior and anterior face of the optical portion 12 may have curves facing in the same direction which results in a concave-convex lens.

The lens implant of the present invention may include location members such as indentations, recesses or holes to assist in positioning the lens in the middle of the eye. The lens implant can be inserted at the time of cataract extraction or as a secondary implant. The lens can be inserted by the standard procedure.

Whilst it is preferred to insert the lens in hydrated condition from a vial as shown in FIG. 10, the lens implant could be inserted into the eye dry and hydrated subsequently to hydrate and swell it. The advantage of dry insertion is that it allows the lens implant to be inserted through a small wound in the eye.

The lens implant of the present invention may have a built in U.V. filter which is incorporated in the hydrogel. The U.V. filter can be incorporated in the chemical mix as polymerization takes place or a U.V. absorbing function can be built into the polymeric chain.

In a further embodiment of the invention the hydrogel plastic material from which the lens is constructed may be loaded with an ophthalmic medicinal material such as an antibiotic or the like. The ophthalmic medicinal material may be incorporated into the chemical mix as polymerization occurs and would then be contained within the finished lens. The ophthalmic chemical would then be released by the lens in the eye over a period of time to provide the ophthalmic medicinal material as required by the patient.

It is also envisaged that in some cases anterior chamber lens would be incorporated into a posterior chamber of the eye by being reversed.

Modifications and variations such as would be apparent to a skilled addressee are deemed within the scope of the present invention.

I claim:

1. A self-supporting, soft intraocular lens suitable for implantation in the posterior chamber of the human eye to replace the natural crystalline lens, comprising:

an optical portion having an anterior surface and a posterior surface, said optical portion being sufficiently thick and rigid to provide stable optical correction; and

a pair of laterally extending flanges projecting from opposite sides of the optical portion, each flange having an anterior surface and a posterior surface,

said flanges projecting anteriorly in the posterior chamber of the eye to dispose the optical portion away from the iris when the lens is implanted in the eye; said flanges functioning to support and retain the lens in place in the eye following implantation without fixation to the iris of the eye and having sufficient strength and flexibility so that the implanted lens can move slightly along the visual axis of the eye when forces are applied to said flanges so as to prevent said lens from being displaced from alignment with the visual axis,

wherein said lens is formed entirely of a hydrogel and maintains its shape when in hydrated or dehydrated form.

2. An intraocular lens according to claim 1, wherein the flanges are imperforate.

3. An intraocular lens according to claim 1, wherein the hydrogel is hydroxyethyl methacrylate.

4. An intraocular lens according to claim 1, which is of integral construction.

5. An intraocular lens according to claim 1, wherein the posterior surface of the optical portion is convex and the flange means and posterior surface of the optical portion define a single, continuous arc.

6. An intraocular lens according to claim 1, wherein the flanges have a curvature in the range from plano to 10 mm radius.

7. An intraocular lens according to claim 6, wherein the optical portion of the lens is of asymmetrical biconvex construction.

8. An intraocular lens according to claim 6 wherein the optical portion has a diameter of from 3 to 10 mm.

9. An intraocular lens according to claim 8 which has a length of from 8 to 15 mm in a horizontal direction across the eye.

10. An intraocular lens according to claim 1, wherein the optical portion has a non-variable optical surface having a curvature from plano to 10 mm radius.

11. An intraocular lens according to claim 1, wherein the optical portion has a non-variable optical surface having a curvature from 15 to 30 mm radius.

12. An intraocular lens according to claim 1, which is in hydrated form.

13. An intraocular lens according to claim 1, which is in hydrated form and is contained in a sealed vial containing a quantity of physiologically acceptable solution.

14. An intraocular lens implant according to claim 13, wherein the sealed vial is contained in a sealed overpouch.

15. An intraocular lens according to claim 1, wherein the hydrogel contains ophthalmic medication for release into the eye.

16. An intraocular lens according to claim 1, wherein the optical portion of the lens is of asymmetrical biconvex construction.

17. An intraocular lens according to claim 16 wherein the ratio of curvature between the curvature of the posterior face and the curvature of the anterior face is on the order of 3:1.

18. An intraocular lens according to claim 1, wherein the flanges flex when compressive forces are applied thereto and the lens resultantly moves slightly along the visual axis of the eye, whereby displacement of the flanges from the ciliary sulcus or capsular bag of the eye is substantially prevented and alignment of the optical portion with the visual axis of the eye is substantially maintained.