

c) the second lens characterized as correcting for optical defects associated with the first lens.

In this regard, the implantation step typically includes inserting the second lens into the anterior chamber of the eye, and maneuvering the second lens through the eye pupil area into the posterior chamber. The anterior chamber appears at 32 and the pupil area at 33. Also, the second lens typically consists of soft, compliant synthetic resinous material. Examples are collamer, silicon, and acrylic material. A small slit 100 in the eye will allow folded lens insertion into chamber 32, and unfolding therein. If desired, the lens 20 can be positioned in anterior chamber, with haptic ends 20c and 20d engaging wall 32a.

Also, the selection of the second lens typically includes the steps of determining the diopter characteristics of the first lens in the eye as having a quantitative difference from a desired diopter characteristic associated with good vision, and using said quantitative difference to impart a diopter characteristic to the second lens such that the combined diopter characteristics of the first and second lenses produce good vision. The second lens can be rotated in the posterior chamber, relative to the first lens, into position wherein the combined diopter characteristics of the first and second lenses produce good vision. This is done to correct for astigmatism, where the second lens has different diopter powers at different quadrants. The measurement of the first lens diopter characteristics may be carried out as by conventional optometric vision testing. See also the lens configuration determination in U.S. Pat. No. 4,769,035.

An additional aspect concerns the provision of alternative plate like haptics 40 and 41 for a lens 42, as in FIG. 3, where the latter may be used with such tabular or plate-like haptics for either or both of the two lenses 10 and 20. Perforated, arcuate mesh regions 46 and 47 on 40 and 41 at haptic peripheries allow formation of eye tissue adhesions, to stabilize and locate 40 and 42, in the eye. The haptics engage the chamber interior wall 24'.

Such haptics 40 and 41 may be hingedly operatively connected to lens 42, as at narrowed hinge region 44 in FIG. 4, so that lens 42 in the capsule moves forwardly and rearwardly in conjunction with changes in position of the ciliary muscles 11, as where lens 42 is used for lens 13.

The haptics 40 and 41 may consist of molded synthetic resinous material, such as polypropylene. Filament type haptics as in FIG. 2 may hinge, for the same purpose.

When passively relaxed, the ciliary muscle (to which this mesh has adhesion) is less constricted in pulling away from the center of the optical segment. When the muscle is more constricted, as in response to the brain's desire to focus closer, the direct pressure on the haptic periphery focuses the optic segment forwardly to increase the curvature of the lens leading to effecting of "+" dioptic power. This effect is more pronounced during use of a soft lens such as is characteristic of a collamer lens.

Tabular zones 40 and 41 in FIG. 4 are made relatively stiff, and lens 42 may be made relatively thin. Note outwardly convexly curved peripheral surfaces at 40a and 41a. FIG. 5 shows a lens 59 having filamentary type haptics 50 and 51 with curved outer portions 50a and 51a. Mesh regions 56 and 57 are provided at outer portions 50a and 51a, as shown. Lens 59 has peripheral skeletal structure 60, thinned at 60a, for hinging attachment to the haptics, allow-

ing lens movement as in FIG. 4. In FIGS. 3 and 4 lens edges and tubular haptic edges may have skeletal strengthening as at 70 and 71.

Either of the lenses may be triple folded into very small M or W shape, for insertion through a very small slit in the eye wall, one example being slit 100. Use of collamer lens material facilitates such multiple folding. See my U.S. patent application Ser. No. 08/680,683, incorporated herein by reference, wherein triple folding of the lens accommodates locating mutually compacted elements of the second lens in side-by-side stacked and sandwiched relation, prior to inserting thereof into the eye. The M-shape folded lens is allowed to resiliently unfold in the anterior chamber, and then maneuvered into the posterior chamber, or unfolded in the posterior chamber.

Other type useful lenses are described in my U.S. Pat. No. 5,203,789.

From the foregoing it will be seen that the first and second lens each have haptics attached thereto, said maneuvering of the second lens effected to position the haptics of the second lens in generally perpendicular superimposed relation to the haptics of the first lens; also that the second lens is provided with haptics that remain hingedly operatively attached thereto after completion of said inserting into said eye chamber; also, that the second lens is allowed freedom to move relative to the first lens, in said eye chamber, after completion of said inserting.

I claim:

1. The method of providing corrected vision in an eye wherein a first artificial lens including haptics has been previously placed in the lens capsule of the eye, which includes:

a) providing a second artificial lens to have opposed surfaces, the second lens also having haptics,

b) and inserting said second lens in an eye chamber forward of said capsule and generally rearward of the eye iris and pupil area so that one of said opposed surfaces faces toward said first lens, and so that the second lens remains rotatable relative to the first artificial lens,

c) the second lens characterized as correcting for optical defects associated with the first lens,

d) and orienting the second lens haptics to be out of alignment with the first lens haptics.

2. The method of claim 1 which includes providing said surfaces so that said one surface of the second lens is concave toward said first lens.

3. The method of claim 1 wherein said one surface of the second lens is inserted to extend proximate said first lens and intermediate the cornea and said first lens.

4. The method of claim 1 including inserting said second lens into the anterior chamber of the eye, and maneuvering the second lens through the eye pupil area into said posterior chamber.

5. The method of claim 4 including preliminary triple folding said second lens into M shape, which is then inserted via a small slit into the eye posterior chamber, to resiliently unfold therein, said preliminary triple folding accommodates locating of mutually compacted elements of the second lens in side-by-side stacked and sandwiched relation, prior to inserting into the eye.

6. The method of claim 1 wherein said second lens is a soft, compliant lens.