

Biconcave Worst-Fechner Lens | Feasibility Studies

In February 1986 Worst developed a biconcave minus power phakic Claw® Lens, which was implanted by Fechner in November 1986. The lens was called the Biconcave Worst-Fechner Claw® Lens. Between 1987 and 1991 approx. 300 of these Biconcave Worst-Fechner Claw® Lenses were implanted in various centers in Europe by Worst, Fechner, Krumeich, Budo and Menezo. These pilot studies, several of which have been reported in the literature (see chapter 10), indicate that the postoperative lens-related complications were below the FDA Grid values for AC lenses.

The following statements seem justified:

- The surgical risk is no greater than that of a cataract operation with IOL implantation
- The post-operative refraction can be determined accurately with the van der Heijde formula
- The postop results are stable (unless the axial myopia increases)
- Although the lens optic is thicker in the periphery than in the center, gonioscopic examination did not show any risk of touch to the endothelium
- The lens can be removed with a procedure which is no more traumatic than the implantation itself.

Correction of Myopia by Implantation of a Concave Worst Iris Claw Lens Into Phakic Eyes

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Abstract

Purpose: The Worst-Fechner Biconcave Lens for the correction of myopia in phakic eyes is fixated to the anterior iris.

Methods: Of the 125 eyes implanted between November 1986 and November 1990, 109 eyes ("core group") had a follow-up period of at least 12 months (mean, 25.0; range, 13 to 51). Sixty-eight of these eyes were reexamined at Giessen University Eye Clinic by an independent investigator using a laser flare cell meter; 23 of the eyes also were examined by iris fluorescence angiography.

Results: Seventy-five of the 109 eyes (68.8%) were corrected within 1.00 diopters of the desired refraction, and only 10 eyes (9.2%) deviated more than 2.00 D from the calculated correction. The anatomical results were characterized by good fixation, absence of glaucoma, inflammation, and leak from iris vessels. However, the corneal endothelium was damaged in five eyes by surgical trauma, three resulting in corneal edema. In addition, in five eyes the endothelial density decreased during the follow-up period despite an uncomplicated operation, resulting in corneal edema in one eye. These eyes may have had anterior chambers that were too shallow (*Refract Corneal Surg 1991; 7:286-298*) These eyes may have had anterior chambers that were too shallow. (*Refract Corneal Surg 1991;7:286-298.*)

Negative Implant - A retrospective study

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Abstract

Purpose: Implantation of a negative power intraocular lens is one of the options for surgical correction of high myopia.

Methods: We studied 36 eyes with a Worst-Fechner Claw Lens, implanted in Groningen between March 1987 and November 1991. The preoperative myopia ranged from -7.00 to -30.00 diopters. Twenty-one eyes had a follow-up period of more than 12 months. The IOL power was calculated with the van der Heyde method.

Results: Correction within 1 diopters of emmetropia has been achieved in 55% of the cases. Deviation of more than 2 diopters occurred in 25%. In 24 eyes the best corrected postoperative visual acuity improved. Due to the IOL the retinal image increases in size as compared to spectacle correction. In none of the cases complications were encountered during surgery. In the postoperative period one IOL had to be replaced because of an error made in the calculation of the lens power.

In one case endothelial decompensation occurred, probably due to a combination of compulsive eye rubbing and a preexisting cornea guttata. The rim of the IOL optic is the part which is the closest to the endothelium. Our recommendation is that one should avoid indentation of the cornea. No other serious complications occurred in this study. *Documenta Ophthalmologica; 1993*