Using catheter needles to deliver an intraocular lens for intrascleral fixation

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A new method for delivering intraocular lens (IOL) haptics through sclerotomies for intrascleral fixation using catheter needles was evaluated in pig eyes. A bent catheter needle was used to penetrate the surgical corneal wound from the presumed sclerotomy. Extraocularly, the leading haptic of the IOL was fixated between the external tube and the internal needle of the catheter needle. The fixation was strong enough to support the IOL and to extract the leading haptic through the sclerotomy site. The trailing haptic was fixated using another catheter needle extraocularly and was subsequently delivered through another sclerotomy site. Guiding with a needle was the only intraocular manipulation when delivering the trailing haptic and catheter needle through the sclerotomy. This new method is easy and safe and does not require special devices compared with other methods. Clinical evaluation in human eyes should be performed.

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In cases that lack capsular support, ie, eyes with traumatic cataract, severe pseudoexfoliation, and severe capsular damage, scleral suture fixation of the intraocular lens (IOL) is the only way to fixate the posterior chamber IOL in an appropriate position. Although a method for scleral suture fixation of the IOL has been developed,[1] it is complicated. A method of intrascleral sutureless fixation of the IOL was proposed by Gabor and Pavlidis[2] and Agarwal et al.[3] Intrascleral sutureless fixation has been gaining popularity over scleral suture fixation because it is easier and does not require sutures.

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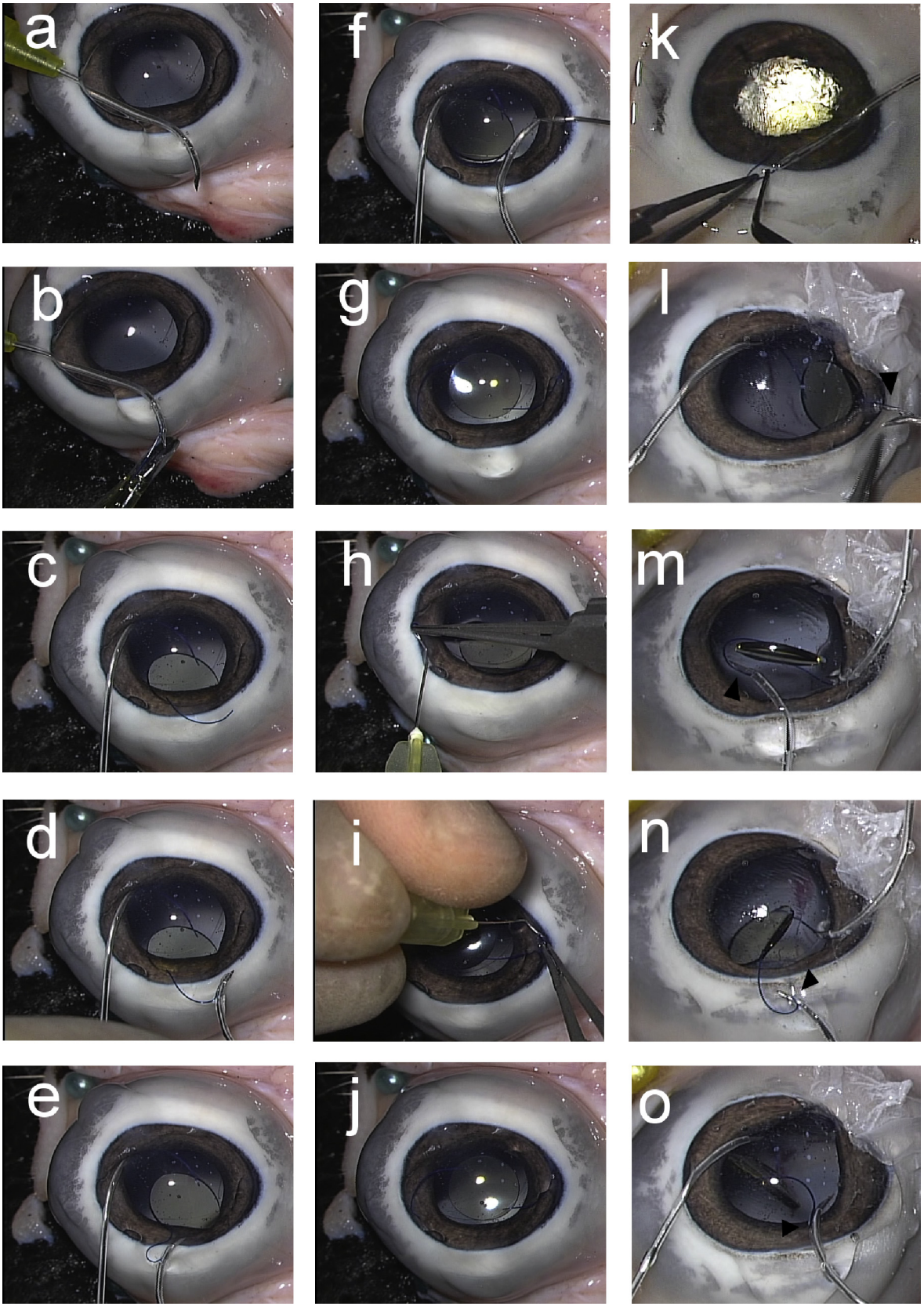
Several techniques for intrascleral sutureless fixation of the IOL have been reported[2–8] and can be separated into 2 major categories. The first category involves the use of 2 forceps to handle the IOL haptics[2–6] and the second category involves the use of forceps and a guide needle.[7,8] However, the current standard techniques require special forceps and intraocular manipulation to handle the haptics. A skilled assistant may be required to hold the leading haptic and to hold the IOL so it does not drop into the vitreous cavity.

With the established small-incision IOL suturing techniques, the IOL does not drop into the vitreous cavity because the leading haptic is held by sutures. Intraocular lens suturing can be performed extraocularly. We initially sought a new material to replace the 10-0 sutures required for intrascleral fixation and subsequently devised a new method that uses 2 catheter needles to deliver haptics through the sclerotomy with minimal intraocular manipulation. We found that haptics can be fixated using a catheter needle between the internal needle and the external tube. The fixation was strong enough to support the IOL and to pull out the haptic, and most of the procedure can be performed extraocularly. The method was evaluated in aphakic pig eyes and modified for efficiency. The research was performed in accordance with the Association for Research in Vision and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