

New modified iris suture technique for pupillary dilation in aphakic eyes during vitreoretinal surgery

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Abstract

• To describe a modified simple iris suture for pupillary dilation technique during vitrectomy in cases with a miotic pupil. Four translimbal incisions were created with a sharp straight blade at 1:30, 10:30, 4:30, and 7:30 o'clock, respectively. The straight needle of 10-0 polypropylene suture and a Sinsky IOL hook was used to displace the pupillary margin toward the limbus. In 3 cases, four sutures caused a 6-mm to 9-mm square-shaped pupil, and the pupil was allowed to return to a smaller size at the end of the operation. It is simple and may reduce postoperative complications.

• **KEYWORDS:** iris suture technique; pupillary dilation; complication

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INTRODUCTION

Excellent visualization of the peripheral retina and vitreous base is critical for vitrectomy in many complicated vitreoretinal cases. A number of intraoperative techniques have been described to obtain wide pupillary dilation for vitreoretinal surgery, including iridectomy, iris retractors, and Eckardt's iris suture technique^[1-3]. These techniques require special instrument preparation or potentially increase postoperative complications. Here we describe a modified simple iris suture for pupillary dilation technique for aphakic eyes during vitrectomy.

SURGICAL TECHNIQUE

Four translimbal incisions were created with a sharp straight blade(Alcon, Fort Worth, Texas, USA) at 1:30, 10:30, 4:30, and 7:30 o'clock, respectively. The straight needle of 10-0 polypropylene suture (Alcon Co., U.S.) was passed through

the sclera and ciliary sulcus from 10:30 to 4:30 (Figure 1). A Sinsky IOL hook was introduced into anterior chamber through one of the limbus incisions (at 10:30) and used to pull a loop of suture through the translimbal incision. In the same manner, another loop of suture was pulled extraocularly at the 4:30 translimbal incision (Figure 2). The suture was cut into two. Each suture was externally tightened and tied to displace the pupillary margin toward the limbus. A similar procedure was conducted from 1:30 to 7:30 (Figure 3).

RESULTS

We had applied this technique to 3 aphakic eyes with a miotic pupil. Intraoperatively, four sutures caused a 6-mm to 9-mm square-shaped pupil. The sutures were removed at the

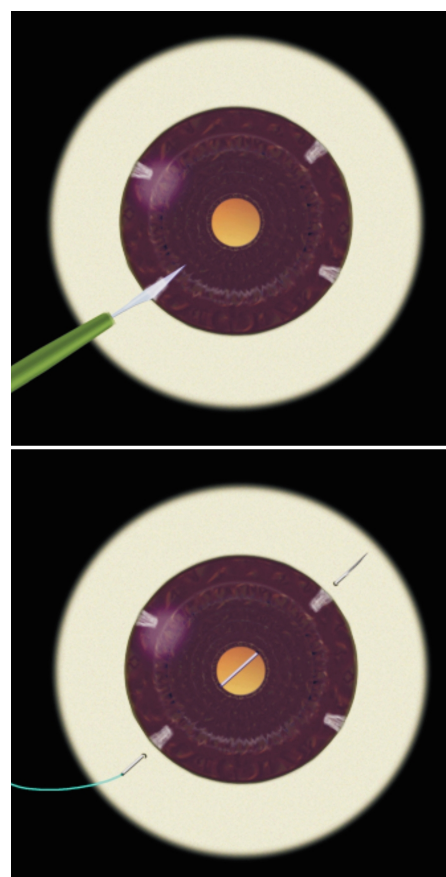


Figure 1 Four translimbal incisions at 1:30, 10:30, 4:30, and 7:30 o'clock were created. The straight needle of 10-0 polypropylene suture was passed through the sclera and ciliary sulcus from 10:30 to 4:30

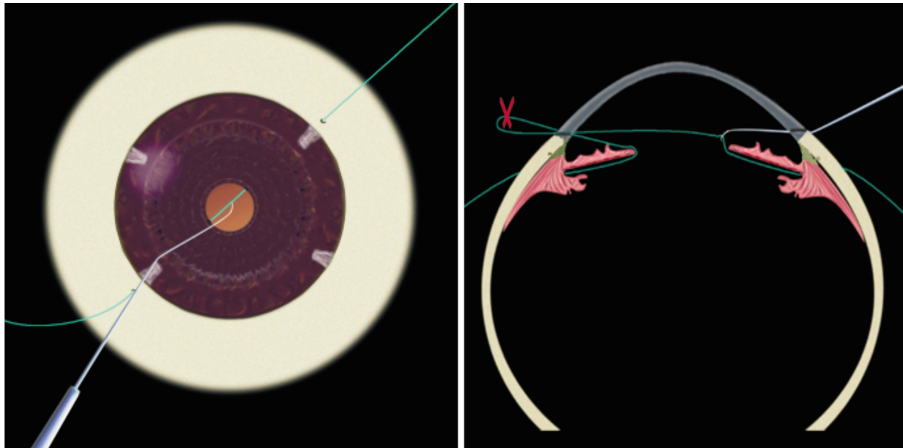


Figure 2 A Sinskey IOL hook was introduced into the anterior chamber through one of the translimbal incisions and used to pull the loop of suture out through the incision

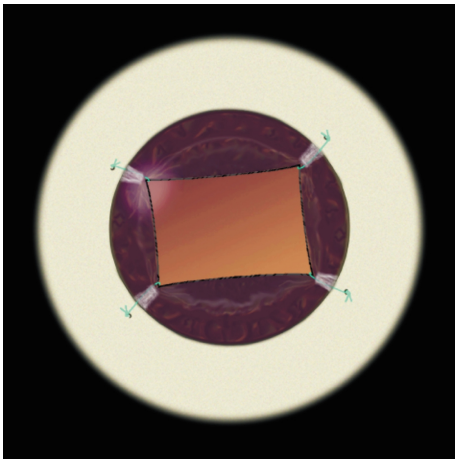


Figure 3 Each suture was tied externally to displace pupillary margin toward the limbus. The four sutures caused an enlarged square-shaped pupil

end of the operation, and the pupil was allowed to return to a smaller size. No eye showed serious complications postoperatively.

DISCUSSION

The most important advantages of our modified technique are related to its simplicity and reduced manipulation. The procedure of needle introductions was inverted compared to Eckardt's methods [2]. Sclerotomies were avoided and suture manipulation was conducted through translimbal incisions, which might reduce sclerotomy-related complications.

Another advantage of this modified technique is that the special preoperative preparation is not required, while iris retractors must be sterilized before use. Moreover, this modified iris suture technique does not interfere with intraoperative contact lens placement. At the end of operation, the sutures were removed and the pupil was allowed to return to a smaller size. Iridectomy could induce a permanent enlarged pupil after operation, which might cause glare and cosmetic problems. Iris suture has little effect on the iris margin and postoperative inflammatory reaction. Temporary sutures are especially helpful if silicone oil is to be used. Maintenance of a small pupillary space helps to prevent later prolepses of the silicone oil from the vitreous cavity into the anterior chamber.

In summary, it is a challenge to maintain pupillary dilation during vitrectomy with a miotic pupil. Compared with other pupillary dilation procedures, it is simple and may reduce postoperative complications by the modified technique of iris suture.

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