

Modified Scharioth's technique of scleral fixation of intraocular lens

Sir,

We read the article^[1] in May 2017 edition of your reputed journal. We have been employing the "scleral tuck technique" described by the authors in the past to fixate intraocular lens (IOL) to sclera in the absence of capsular support. However, we encountered that, out of six eyes where we employed this technique, in one eye, haptic on one side got dislodged within few days of the surgery, which we had to refixate using glue. We presumed that, in the absence of glue (which is used in "scleral flap technique" and not in "scleral tuck technique"), simply tucking the haptic may not be adequately secure in early postoperative period.

The first publication of "scleral tuck technique" is of Scharioth *et al.* in 2010 of 63 eyes with 7-month follow-up as mentioned in the article. However, one can appreciate that there has not been any publication reporting either large number of patients or very long-term results after that. The fact that scleral tuck technique was more or less replaced by scleral flap technique with glue leads to the presumption that it was not found secure by surgeons and needed further modifications. However, the exact reason for this shift is not apparent from the literature. Now, there is renewed interest in scleral tuck technique and authors share a modification to make it more secure. To make "scleral tuck technique" more secure, we have modified the step of tucking of haptic. Instead of just making a tunnel in single plane and tucking the haptic, we do it in four steps as depicted in Fig. 1. In step 1, a scleral groove of half thickness is made just in front of the scleral port from which the haptic has been exteriorized. Then, a bent 30-gauge needle is passed from the base of the groove and it comes out on the surface after traversing about 1 mm of the sclera. In step 2, the haptic is tucked in this groove and comes out on the surface again. In step 3, a new groove is made in front of this exteriorized haptic and it remains intrasclerally. Finally, in step 4, the haptic is tucked in this groove. Thus, instead of a groove in single plane haptic comes out of sclera, it goes in, and then comes out

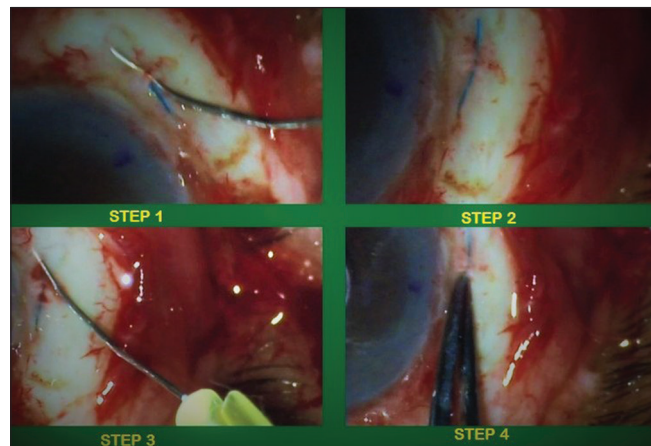


Figure 1: Four steps of author's modification

again before finally getting buried intrasclerally. This locks the haptic by the forces of scleral tissue acting on haptic in opposing directions by virtue of intraocular pressure. Thus, ensuring watertight closure with slightly higher intraocular pressure before ending the surgery is also an integral part of this technique. This is not possible in glued IOL technique as the site has to be kept dry for glue to act, and hypotony in immediate postoperative period is inevitable. Fig. 2 compares the end result of the two techniques.

We believe that "scleral tuck technique" has several advantages over "scleral flap technique." It is less time-consuming as it avoids scleral dissection and it is cost-effective as it does not require glue. Fibrin glue besides increasing cost has other issues such as availability, quality, and its off-label use. By watertight closure, postoperative hypotony, and its sequelae-like vitreous hemorrhage, macular edema and choroidal detachment are avoided. By incorporating modification suggested by us, "scleral tuck technique" can be made more secure and the incidence of re-intervention can be reduced.

In the past 6 months, seven eyes of six patients have been operated with modified technique. All eyes had visual recovery from one line less than preoperative best-corrected vision with aphakic glasses to upto two lines better to their best-corrected preoperative visual acuity. No intraoperative complications were encountered except tearing of superficial scleral flap during step 2 in one eye. One eye had some vitreous hemorrhage during sclerotomy which delayed visual recovery till it absorbed spontaneously in 15 days. There has been no incidence of haptic breakage, late erosion, or endophthalmitis in any of these patients.

In the modified technique, parts of the haptic are lying over the sclera but these do not cause any foreign body sensation as these are under conjunctiva and tenon capsule, and second, the end of the haptic is securely buried into the sclera. In a prize-winning film at ASCRS Film Festival 2015, Yamene *et al.* demonstrated a technique ([instagrid.me/y/AQiXqbp-A1k](https://www.instagram.com/yamene1980/)), where exteriorized haptic lies over the sclera and its tip is flanged like the end of a dumbbell to prevent its slippage into the sclera. In comparison to that, in our modification, only segments

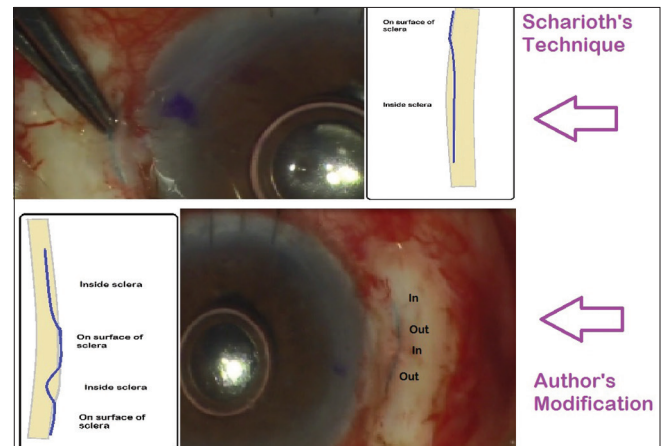


Figure 2: Comparison of Scharioth's and author's technique of "scleral tuck"

of haptic lie over the sclera and its end is securely buried into the sclera. We believe that this will prevent extrusion of the haptic tip out of the conjunctiva in late postoperative period.

More cases and longer follow-ups are required to compare the results of this modification with the established techniques of scleral flap and scleral tuck. This is the reason this has been presented as correspondence so that others can also evaluate this modification.

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Conflicts of interest

There are no conflicts of interest.

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