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A Sutureless Self-Retaining Infusion Cannula for Pars Plana Vitrectomy

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Purpose: Pars plana cannulas are widely used to maintain intraocular pressure during vitreous surgery. A common practice is to place a suture through partial-thickness sclera and use the loops at the ends of the suture to encircle the wing like protuberance of the cannula. This procedure is time consuming and expensive. We describe a new sutureless infusion cannula designed to be used with either a conventional or sutureless vitrectomy procedure.

Methods: The cannula has a beveled 20-gauge tubular shape. The total intra-ocular length of the cannula is 5 mm. The cannula has two semi-circular hooks. It is placed through a 20-gauge sclerotomy entry, and rotated clockwise. Its hooks enter deep in the adjacent sclera, and the cannula becomes stable. It is attached by a flexible Silastic tubing to an 18-gauge needle adapter for connection to standard infusion equipment. Ten consecutive patients undergoing primary three-port vitrectomy pars plana participated in the study. Four of 10 had sutureless sclerotomy done. Timing of the procedure, its complications and the possibility of exchange of the site of the infusion line during the surgery was evaluated.

Results: The cannula was placed with no major complications all cases, except for one case with scleral laceration in a myopic eye. In all cases, the procedure took less than 10 seconds to be done. In 3 cases, the site of the infusion line was changed, during the procedure with no further complications.

Conclusion: The sutureless infusion cannula we developed can be used in either sutureless or standard sclerotomy. Its placement is fast and the location can be changed during the procedure. No major complications were seen.