To describe a four-port pars plana vitrectomy using the 25 Gauge system

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Technique:
Using the TSV25 system (Bausch & Lomb), the standard three ports are placed in their usual locations. A fourth trocar is inserted in the inferonasal quadrant. Through this fourth port, a 25 G wide-angle illumination fiber is inserted. This fiber slips snuggly through the trocar but can be advanced and retracted as needed. In order, to illuminate the posterior pole, the light fiber can be advanced into the mid-vitreous cavity. Retracting the light fiber, on the other hand, gives better illumination of the periphery. This allows bimanual surgery, using the 25 G vitrectomy system. A pick or forceps can be used in one hand and scissors in the other which makes it possible to grasp diabetic membranes and remove them more safely. Instead of the forceps or pick, the soft-tipped 25 G extrusion needle can be used to engage these membranes in order allow safer cutting with vertical or straight scissors. With illumination provided through the fourth port, it is also possible to trim the vitreous base while doing scleral depression for a more complete and safer removal of the vitreous. The advantage of the four-port 25 G vitrectomy is that the light fiber and infusion cannula can be placed in any of the four ports. This makes it possible to approach a particular membrane or the retinal periphery from the most advantageous direction while maintaining bimanual capability. Similarly, endolaser photocoagulation can be applied to difficult-to-reach places. Even if bimanual surgery is not necessary, using the 25 G light pipe in addition to the light from the forth port provides excellent wide-field illumination.

Conclusion:
Four-port vitrectomy using the TSV25 system expands the indications for 25 G vitrectomy. The hands-free illumination and the ability to use any of the four ports to approach retinal pathology, allows true and versatile bimanual surgery for a variety of retinal pathologies. This can be particularly useful for diabetic traction detachments. Since this technique is transconjunctival, it is sutureless with minimal damage to the conjunctiva. Healing and visual improvement are usually more rapid.