Reviewer’s report

Title: Microbiological Analysis of Office-based three-port Microincision Vitrectomy Surgery

Version: 1 Date: 9 September 2013

Reviewer: Nieraj Jain

Reviewer’s report:

Major Compulsory Revisions:

1. Imprecise language: The purpose of the study is not clear at first read through the actual text, and this is due in part to some of the vague language (the abstract is more informative). Phrases such as “microbiological analysis of office-based …vitrectomy” or “microbiological profile of office-based vitrectomy, or “bacterial load,” do not clearly express the objectives of the study. In simpler terms, this paper evaluates the vitreous contamination rate of office-based vitrectomy with the Intrector. The authors should revise the title and avoid the use of such language in the text.

2. Unclear purpose: The surgeries performed were essentially just sample acquisition for culture and lipidomics. These were vitreous biopsies – little more than a vitreous and tap inject procedure – and not representative of the broad spectrum of vitreoretinal surgery. This should be more explicit.

This study therefore most directly addresses the question of whether or not the creation of transconjunctival ports with this particular vitrectomy system leads to high vitreous contamination rates. The setting of the procedure does not seem as relevant - it is hard to imagine that the setting (ie, OR vs. a minor procedure room with sterile technique) would affect this vitreous contamination rate in a measurable way in an uncontrolled study of 37 patients undergoing only a vitreous biopsy. Although the surgical setting is interesting, the authors should place more emphasis on the instrumentation instead - it may be useful to include diagrams/images further detailing the characteristics of the three port-entry systems.

3. Data inconsistency: the results in the abstract do not correspond with the text re: culture results of the undiluted and diluted samples. This is a key result and the inconsistency in the reported data is concerning. The abstract also mentions the evaluation of antibiogram sensitivities but this is not reported in the text.

Miscellaneous compulsory revisions

4. The quoted rate of 0.80% for standard MIVS is very high and an outlier. This is misleading when listed in juxtaposition with the single study reporting a 0.17% rate with the Intrector. (see “Discussion”, paragraph 1) Please revisit the references and only use the strongest studies on modern MIVS endophthalmitis rates.

5. Note that with a single surgeon and prospective uncontrolled design, it is hard
to make definitive conclusions from this study. In the present prospective study, it is likely that the single experienced surgeon can pay meticulous attention to sterile procedure and limit vitreous contamination. The authors should include some comment re: the external validity of this study as a limitation.

6. Note: “avoiding hypotony” (see under "patients and methods, vitrectomy") is misleading, as all these eyes likely had hypotony after removal of a “minimum of 0.5ml” of fluid.

Minor essential revisions:

7. The authors describe their sterile technique and surgical technique in good detail. Please include further details from the figure 1 caption in the paper’s text (ie, not a positive pressure room, no surgical gown).

8. The authors appropriately describe their culture/assay. The low conjunctival culture yield is concerning but the techniques the authors used are consistent with those of other similar studies and the authors appropriately acknowledge this.

9. Please proofread the paper for grammatical and spelling errors prior to resubmission.

Discretionary Revisions

10. Findings don’t entirely support conclusions: The authors imply in the manuscript (not in the abstract) that the findings from the study relate to postoperative endophthalmitis risk. As the authors acknowledge, this has been evaluated in a retrospective series of thousands of patients by Koch et al. It is not clear how the present study relates to endophthalmitis rates with the Intrector. Are there any studies that correlate intraoperative vitreous contamination with postoperative endophthalmitis? Ie, what is the positive predictive value/negative predictive value of intraoperative culture for postoperative endophthalmitis? There is limited literature to this effect, but if the authors wish to make inferences on endophthalmitis rates based on their intraoperative culture, they should address this. Perhaps referencing the cataract literature if there is no relevant PPV literature. Do the authors believe that intraop contamination or postoperative contamination through unsutured sclerotomies is more relevant? This is mentioned in the abstract but not in the manuscript text.

11. It would be informative, but not critical, to note the percentage of patients with a PVD preoperatively. In those without a PVD, was this induced surgically?

12. Were the conjunctival isolates typical for normal conjunctival flora? Please comment briefly on this.