Author’s response to reviews

Title: Incidence of endophthalmitis after 23-gauge pars plana vitrectomy

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Reviewer reports:

Sung Soo Kim (Reviewer 1): To evaluate the incidence of postoperative endophthalmitis after 23 gauge PPV, population should be clearly isolated by its surgical technique. In this report, 2 cases of 3 endophthalmitis received combined surgery including phaco emulsification. Phacoemulsification affect the risk of postoperative endophthalmitis.

Identifying real risk of endophthalmitis after 23G PPV needs exclusion of cases which received combined surgery such as phacoemulsification, penetrating keratoplasty, and glaucoma filtering surgery.

Author reply: Thank you for the suggestion. Besides the combined phacoemulsification, we have excluded cases with intraocular surgery within 6 months.
A 5-year multi-center retrospective data from Latin America showed that the incidence of endophthalmitis after small-gauge PPV without combined phacoemulsification was 0.028% (3 of 10,845) and 0.021% (1 of 4,717) for 23-gauge and 25-gauge, respectively.

Parolini et al. reported that none of 943 eyes after 23-gauge vitrectomy (38% combined with phacoemulsification + IOL implantation). Although Chen et al. reported that an apparent increase of the rate of endophthalmitis (2.17%, 1 of 46) after combining phacoemulsification cataract and 25-gauge vitrectomy compared to only 25-gauge vitrectomy (0.23%, 1 of 431), the sample size was too small to draw a conclusion. Shimada et al. reported that the incidence of postoperative endophthalmitis was 0.0299% (1 of 3343 eyes) for 25-gauge vitrectomies. The case had combined with phacoemulsification. However, it was not sure the 3343 eyes enrolled with combined surgery or not. In our study, the incidence of endophthalmitis was slightly higher (0.094%) for eyes with 23-gauge PPV and combined phacoemulsification surgery, compared to eyes with single 23-gauge PPV (0.054%). However, due to very rare number of endophthalmitis, it was not powerful enough to draw a statistical (p=1.0) or clinical conclusion.

Hence, with currently available retrospective studies, we do not have sufficiently powered to assess if combined cataract surgery and small gauge vitrectomy increases the risk of postoperative endophthalmitis.

Per the reviewer’s suggestion, we have added the incidence of both combined surgery and non-combined surgery (Results section, 1st paragraph), similar as some of the previous studies.

References


3 cases of 3979 cases is very small number and it means endophthalmitis after 23 G PPV is very rare complication.

Author reply: Yes, the incidence is rare. The incidence of endophthalmitis after 23-gauge vitrectomy, no matter with or without combined phacoemulsification, ranged from 0 to 0.075% (see references below).

References


However, types of combined surgery, suture of surgical incision, and other possible risk factors are not evaluated in this report.
Author reply: Per the reviewer’s suggestion, we have added the information on combined phacoemulsification surgery (Results section, 1st paragraph; Discussion section, 3rd paragraph).

In this study, we have excluded cases “sutures for any of the 3 sclerotomy incisions”, which was described in the Methods section (1st paragraph).

The putative risk factors, including immunosuppression, intravitreal adjuvants, postoperative tamponade, subconjunctival antibiotics and systemic antibiotics, were described in the Discussion part.

And postoperative follow up period and delayed reaction is not described.

Author reply: For the 3 cases of endophthalmitis, postoperative follow up information was presented in original Table 2. All these cases were followed up for 10-73 months, we believe there were no delayed reaction.

I think this report looks like case report show relatively low incidence of endophthalmitis after 23G PPV, but not suitable for scientific publication.

Author reply: The incidence of endophthalmitis was rare (ranged from 0 to 0.075%). Hence the case with endophthalmitis was only a few out of thousands of cases. This does not mean this report is case report or case series since the population of the study is the thousands of cases.

Stephan Hoffmann, MD, Ph.D (Reviewer 2): The manuscript "Incidence of endophthalmitis after 23-gauge pars plana vitrectomy" by Lin et al reports the occurrence of endophthalmitis in a group of 3979 eyes receiving 23-gauge pars plana vitrectomy. The manuscript is well written and reports an endophthalmitis incidence of 0.075% in this group.

Despite the interesting topic, the manuscript can be improved before publication:
1. The authors should provide informations about the health status of the patients receiving a vitrectomy without endophthalmitis development. The health status of these patients should be compared with the health status of the endophthalmitis patients after vitrectomy.

Author reply: Per the reviewer’s suggestion, we have provided information on age, gender, health status (hypertension, diabetes mellitus; we have excluded patients with cancer, HIV, or taking drugs that may influence the immune system), combined phacoemulsification, intravitreal use of triamcinolone, and endotamponade of the patients receiving a vitrectomy without endophthalmitis in the new Table 1.

However, direct comparisons between the two groups were not powerful to draw a statistical or clinic conclusion since the sample sizes in these two groups are of great difference (3976 vs. 3). These comparisons were not commonly reported in previous studies either.

2. Furthermore the surgery time of these two groups should be compared; also the training status of the surgeon would be of interest for the endophthalmitis development.

Author reply: Thank you for the suggestion. However, the surgery time of these two groups was not record. Furthermore, due to different surgery type, surgeons, and great unequal sample sizes, the direct comparison seemed ambiguous.

All the three surgeons are senior vitreoretinal surgeons with at least 10-year experiences on vitrectomy surgery. The average number of the vitrectomy surgeries was at least 500.

3. Use of pharmacological agents (triamcinolone) for vitrectomy should be mentioned in both groups.

Author reply: See the reply of question 1.

4. Use of an endotamponade at the end of surgery should also be mentioned and compared.

Author reply: See the reply of question 1.
5. Small spelling mistakes should be corrected

Author reply: we have checked and revised the spelling mistakes throughout the manuscript.

After these improvements, the manuscript should be ready for publication.