Penetrating and perforating ocular trauma is often devastating and may lead to complete visual loss in the traumatized eye and subsequent compromise of the fellow eye. Repair of any corneoscleral laceration with prompt closure of the globe remains the gold standard in the management of a salvageable eye following penetrating and perforating ocular injuries. However, a significant proportion of traumatic injuries are complex, requiring early vitreoretinal intervention to preserve vision. Unfortunately, despite prompt vitreoretinal intervention, prognosis for vision preservation often remains guarded. A retrospective analysis at a level 1 trauma center was performed to evaluate the time course, rates, and outcomes following pars plana vitrectomy for vision preservation due to vitreoretinal disease.

## Methods

Eyes that underwent open globe repair following ocular trauma at San Antonio Military Medical Center, a level 1 trauma center, between 01 January 2014 and 30 Dec 2016 were examined. Specific factors evaluated include mechanism of injury, defect size and complexity, ocular trauma score, zone of injury, associated orbital trauma, and time from injury to surgical intervention. A subset analysis was conducted specifically on those eyes requiring subsequent pars plana vitrectomy for vision preservation due to vitreoretinal disease.

## Results

Patients who underwent pars plana vitrectomy tended to suffer less complications, but showed comparably less improvement in visual acuity at six months following repair. Overall, patients requiring pars plana vitrectomy following open globe repair generally had more severe injuries. Although rates of complications were relatively high, a significant improvement in visual acuity was demonstrated at six months post-operatively.

## Conclusion

Penetrating and perforating ocular injury and initial globe repair, a retrospective analysis at a level one trauma center

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### Purpose

- Penetrating and perforating ocular trauma is often devastating and may lead to complete visual loss in the traumatized eye and subsequent compromise of the fellow eye. Repair of any corneoscleral laceration with prompt closure of the globe remains the gold standard in the management of a salvageable eye following penetrating and perforating ocular injuries. However, a significant proportion of traumatic injuries are complex, requiring early vitreoretinal intervention to preserve vision. Unfortunately, despite prompt vitreoretinal intervention, prognosis for vision preservation often remains guarded. A retrospective analysis at a level 1 trauma center was performed to evaluate the time course, rates, and outcomes following pars plana vitrectomy after traumatic ocular injury and initial globe repair.

### Methods

- Eyes that underwent open globe repair following ocular trauma at San Antonio Military Medical Center, a level 1 trauma center, between 01 January 2014 and 30 Dec 2016 were examined. Specific factors evaluated include mechanism of injury, defect size and complexity, ocular trauma score, zone of injury, associated orbital trauma, and time from injury to surgical intervention. A subset analysis was conducted specifically on those eyes requiring subsequent pars plana vitrectomy for vision preservation due to vitreoretinal disease.

### Results

- Patients who underwent pars plana vitrectomy showed improvement of visual acuity from 2.5 logMAR following initial injury to 1.5 logMAR 6 months following pars plana vitrectomy, equivalent to 20.1 ETDRS letters gained. Post-operative complications included one case of endophthalmitis (2.3%) and sixteen cases of proliferative vitreoretinopathy (37.2%).

### Conclusion

- Overall, patients requiring pars plana vitrectomy following open globe repair generally had more severe injuries. Although rates of complications were relatively high, a significant improvement in visual acuity was demonstrated at six months post-operatively.

### References


The authors have no financial interests to disclose.