

# Case of Domestic Violence-Related Injury Leading to Ruptured Globe

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## INTRODUCTION

- Domestic violence (DV) is experienced by 1 in 4 women and 1 in 10 men in the United States.<sup>1</sup>
- 45% of DV injuries involve the eyes.**<sup>2</sup>
- DV disproportionately burdens individuals from lower socioeconomic status and racial/ethnic minorities.<sup>3</sup>
- During the COVID-19 pandemic, this number of DV-related traumatic injuries is believed to have increased.<sup>3</sup>
- Globe rupture following DV is rarely reported in the ophthalmic literature.

## CASE PRESENTATION

A 31-year-old male presented to the ED with significantly decreased vision in the right eye. He reported pain and the ability to only see shadows OD. That morning, the patient's partner shattered a mirror and stabbed the patient in the arm with glass. At that time, the patient believed no other trauma was sustained.

	OD	OS
Visual Acuity	20/60	20/20
IOP	3	18
Pupils	No rAPD	No rAPD
EOM	Normal	Normal
Lids/Lashes	Normal	Normal
Conjunctiva/Sclera	Full thickness superonasal scleral laceration ~5mm; nasal conj erythema	White and quiet
Cornea	1+ posterior stromal folds	Clear
Anterior Chamber	4+ cell, trace layering hyphema	Deep and quiet
Iris	Normal	Normal
Lens	Trace PSC	Clear
Fundus	Attached retina with no intraocular foreign bodies	Normal

## WORKUP

The diagnosis of zone II globe rupture OD was made, and IV antibiotics were administered.

**B-scan** and **CT scan** were ordered.

The patient was taken to the OR for **open globe repair**. The wound was closed with 9-0 interrupted nylon sutures. An intravitreal injection of 0.1 mL of Vancomycin 1mg/0.1 mL and 0.1 mL of Ceftazidime 2mg/0.1 mL was given. Subconjunctival dexamethasone and Ancef were also given. Pred Forte and moxifloxacin drops were started.

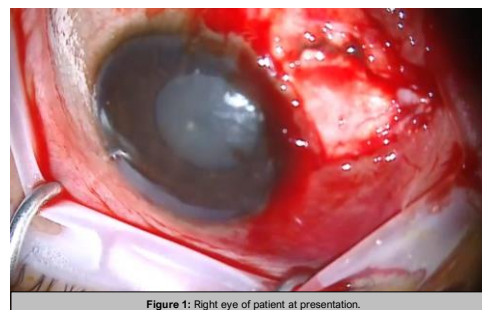


Figure 1: Right eye of patient at presentation.

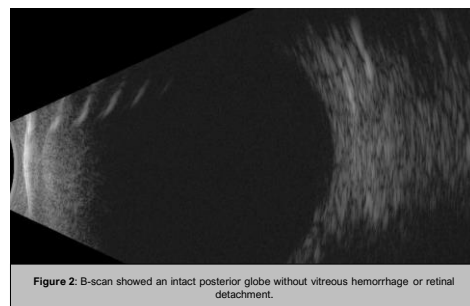


Figure 2: B-scan showed an intact posterior globe without vitreous hemorrhage or retinal detachment.

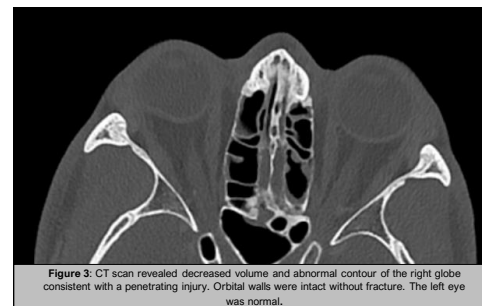
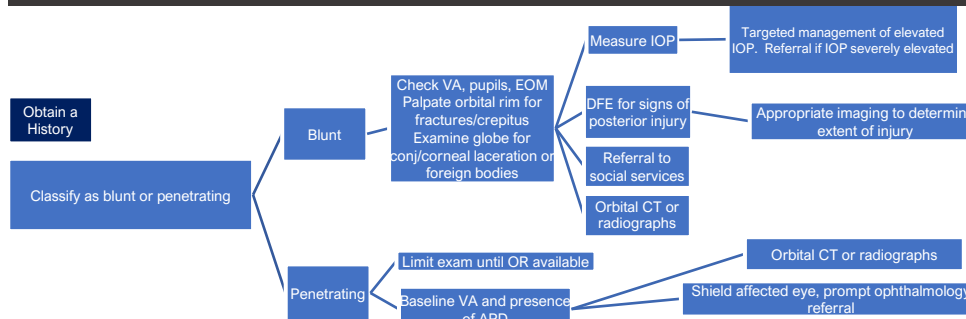


Figure 3: CT scan revealed decreased volume and abnormal contour of the right globe consistent with a penetrating injury. Orbital walls were intact without fracture. The left eye was normal.

At the POM1 visit, the patient retained 20/20 vision OU.

## MANAGEMENT GUIDE



## LITERATURE REVIEW

**Domestic violence may represent up to 20% of ocular traumas presenting to emergency departments.**<sup>4</sup> One study found that domestic violence was the cause of injury in 7.3% of adult female orbital fracture patients.<sup>5</sup> However, only 30% of injured females and 20% of males who are DV victims receive medical treatment.<sup>6</sup>

**NEISS-AIP was queried for eye injuries from 2006 to 2016.**<sup>7</sup> Females are more likely to present with DV-related ocular injury, especially younger females. However, men can also be victim to DV, and were more likely to present with injury due to fire or burns secondary to DV. The Black population is at higher risk of DV.

**390 open globes evaluated at MEEI between 2013 and 2016.**<sup>8</sup> 8 patients reported open globe injuries related to DV with one patient presenting with bilateral open globe injuries (total 9 eyes or 2.3% of open globe injuries). All patients were female and average age was 41. Visual acuity on presentation ranged from CF to NLP (with 6 of 9 eyes NLP on presentation). Mechanism of injury included blunt trauma in 3 patients and penetrating trauma in 5 patients. Four patients had associated orbital fractures and one patient had multiple other facial fractures. Four patients had facial lacerations requiring repair. All eyes underwent initial exploration and 8 out of 9 eyes were closed primarily. The best final visual acuity was 20/200 in two eyes and count fingers in one eye. 6 of 9 eyes remained NLP.

**The Wills Eye Hospital ED identified 79 women with DV-injury over a 6-month period.**<sup>9</sup> 86% of injuries were the result of blunt trauma from a closed fist. The most common ocular diagnoses were periorbital contusion (76%) and subconjunctival hemorrhage (68%), whereas orbital fractures were present in 14%, and open globes in 4%.

**The University of Iowa found DV to be the fourth leading cause of traumatic ocular injury in 190 women.**<sup>10</sup> 16 patients (8.4%) experienced DV-related ocular traumas, with everyone sustaining scleral laceration or ruptures and 80% of those patients ultimately required enucleation.

## CONCLUSION

- DV-related ocular injuries can be vision threatening and include intraocular hemorrhage, traumatic cataract, retinal detachment, and globe rupture. This case highlights the management of DV-related trauma in individuals who present with globe rupture.
- A CME course produced by the AAO on DV provides screening techniques and additional information on how to best support these patients.

## REFERENCES LINK