

Exam findings correlated with ocular injury in orbital fracture patients



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INTRODUCTION

Orbital fractures are often associated with ocular injury, but no current guidelines exist on when ophthalmology evaluation is warranted. Early physical exam findings may help determine whether a patient is at higher likelihood of having sustained a concomitant ocular injury and may require early ophthalmologic assessment.

OBJECTIVES

- > To create a retrospective database of orbital fracture patients presenting to the emergency department
- > To determine which early physical exam findings in orbital fracture patients are associated with ocular injury and warrant further investigation by an ophthalmologist prior to reconstruction.

DESIGN

Retrospective cohort study

Data source: Level I Trauma Center patient registry

Inclusion criteria

- Adult patients
- Emergency department visit
- Orbital fracture diagnosis by ICD9/10 code

Exclusion criteria

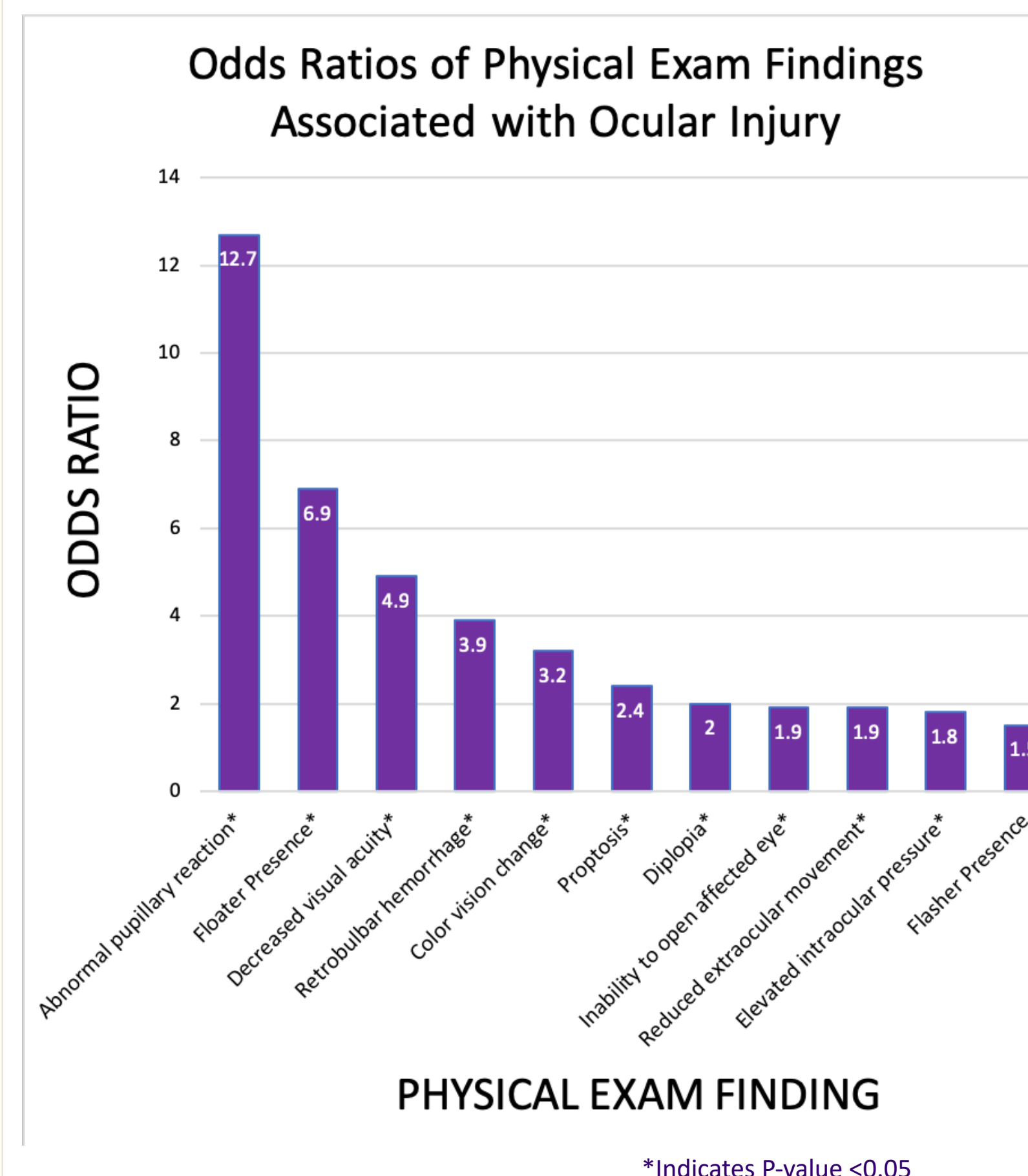
- Prior orbital pathology
- Prior ocular pathology
- Incomplete ophthalmologic assessment

Data collected:

- Demographics
- Exam findings on initial presentation
- Presence of ocular injury as diagnosed by ophthalmologist

RESULTS

Variable	N = 535
Gender n(%)	
Male	408 (76%)
Race	
African American/Black	67 (13%)
White	369 (69%)
Asian	29 (5%)
American Indian or Alaska Native	20 (4%)
Other	22 (4%)
Unavailable/Unknown	28 (5%)
Age (mean)	43
Mechanism	
Struck	196 (37%)
Fall	149 (28%)
Motor vehicle related	97 (18%)
Other	93 (17%)



CONCLUSIONS AND FUTURE DIRECTIONS

- > Orbital fracture patients are at high risk for concomitant ocular injuries, with 37% of the patients in this cohort were diagnosed with ocular injuries
- > This study validated existing research showing an association between ocular injury, decreased visual acuity, and abnormal pupillary reaction
- > Additional early exam findings associated with ocular injury included retrobulbar hemorrhage, elevated intraocular pressure, inability to open the injured eye, color vision change, presence of floaters, reduced extraocular movement, proptosis, and diplopia
- > Future analysis will assess whether additional patient factors may be associated with ocular injury including mechanism of injury and which walls were fractured

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