

# **T**raumatic **R**etinal **D**etachment

Y.Alizadeh M.D.

GUMS

2021

# Traumatic Retinal Detachments

- It represents a category of rhegmatogenous RD with particular epidemiological characteristics, special prognostic & therapeutic considerations, & often important socioeconomic & medical-legal implications.

# TrRD: The Importance of Accurate Characterization as Traumatic

- A more extensive ophthalmic examination for associated, occult, traumatic pathology may be indicated.
- The prognosis of the contralateral eye may be affected.
- Health insurance & disability insurance benefits

# TrRD: Diagnosis of Traumatic Etiology is Often Problematic

- There is no consensus on a clear definition for TrRD in the literature.
- TrRD frequently develops months or years after trauma.
- Traumatic retinal breaks that may lead to TrRD usually occur at the time of trauma, but their diagnosis is often delayed.
- About %50 of contusion related TrRDs lack any late objective sign of trauma.
- Trauma that may be inconsequential for an anatomically normal patient may precipitate a TrRD in a patient with a pre-existent condition predisposing to RRD.
- Occasionally patients who claim TrRD exaggerate or fabricate history of trauma for secondary benefit.

# TrRD: EPIDEMIOLOGY

- Relative Prevalence: 6-19%
- Closed blunt trauma (70-86%) , most commonly from missile injuries
- Open trauma is associated with a high incidence of TrRD (29% to 40%).
- Male: 68-92%
- Mean age for TrRD is about 28 years, versus 53 years for non-traumatic RRDs.
- In patients under 30 years of age, 40% of RRDs are traumatic.

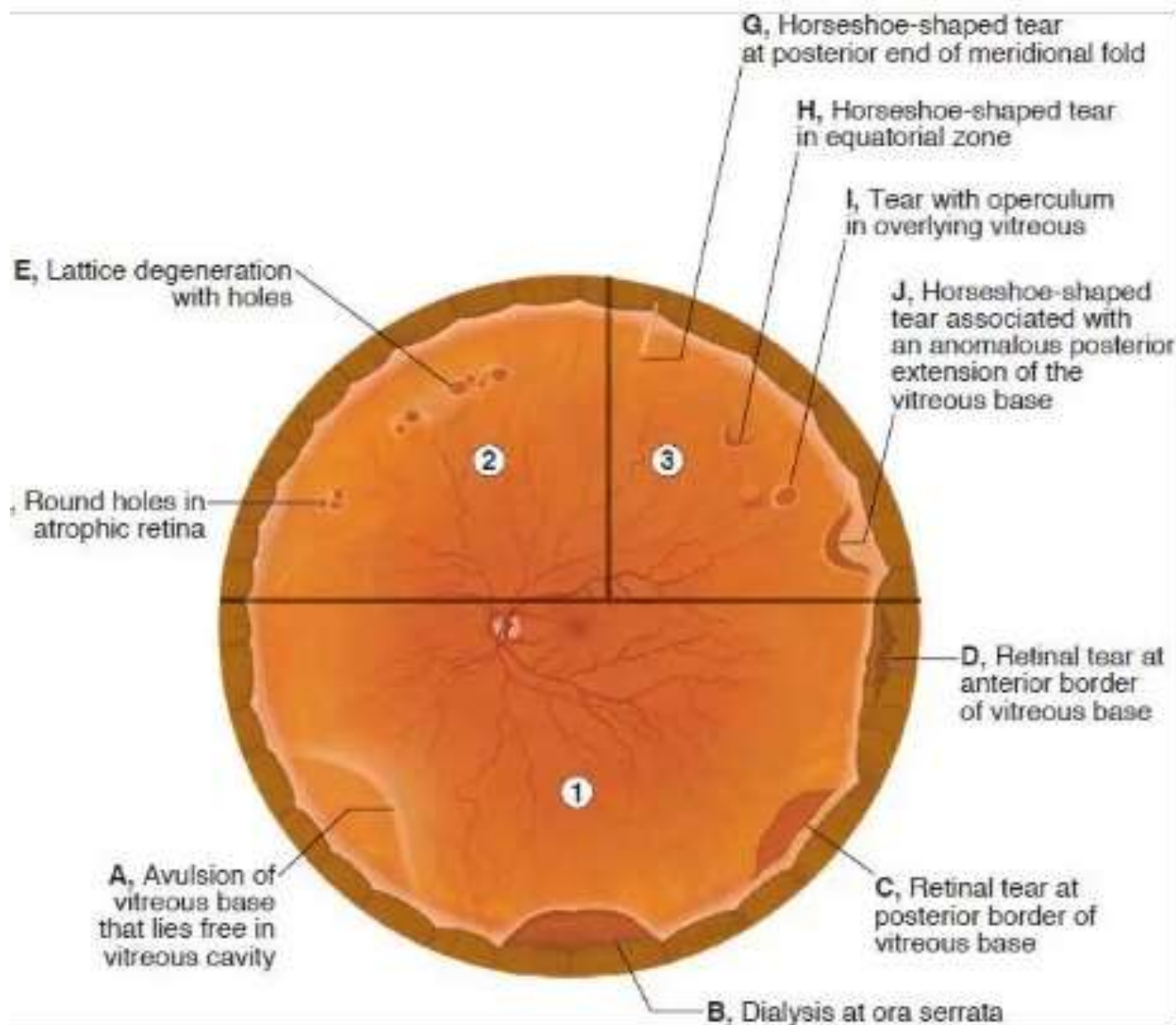
# Pathophysiology of Traumatic Retinal Detachment

- Traumatic retinal breaks almost always occur at the time of trauma.
- Symptoms of a traumatic retinal break typically occur in close temporal association with the trauma, immediately or within several days.
- Indirect ocular trauma sufficient to cause a retinal tear is usually associated with obvious physical signs of face or head injury.

# TrRD: Types of retinal breaks

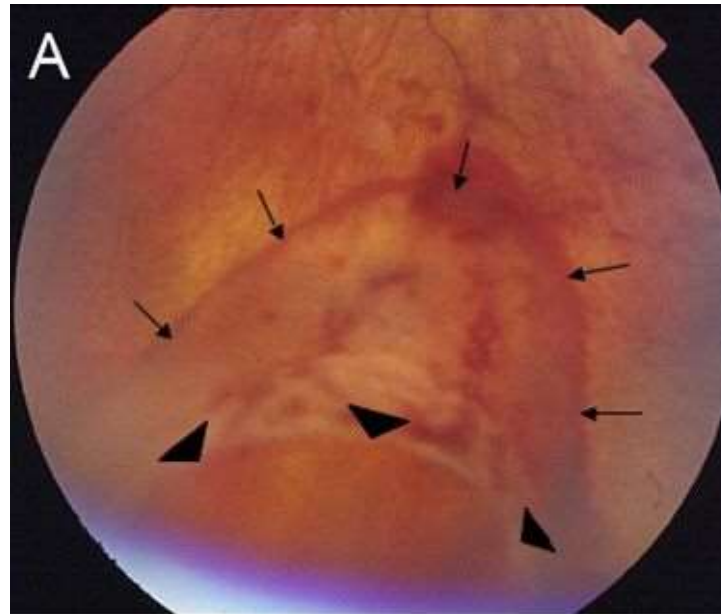
- Retinal dialysis: 69%- 83% ( 6% in non-traumatic RRD)
- 68% of dialyses are caused by trauma (blunt trauma)
- 87.5% of superonasal dialysis have been reported to be traumatic in origin, as compared to 56% for inferotemporal breaks.
- Bilateral dialysis are infrequently related to trauma.
- *Avulsion of the vitreous base is pathognomonic for severe direct ocular trauma and is usually associated with retinal dialysis.*
- Giant retinal tears occur in about 8%-25% of TrRDs, much more commonly than in non-traumatic RRD.
- Tiny breaks near the ora serrata may be caused by trauma to the zonule with traction on aberrant zonular fiber.

# Types of retinal breaks

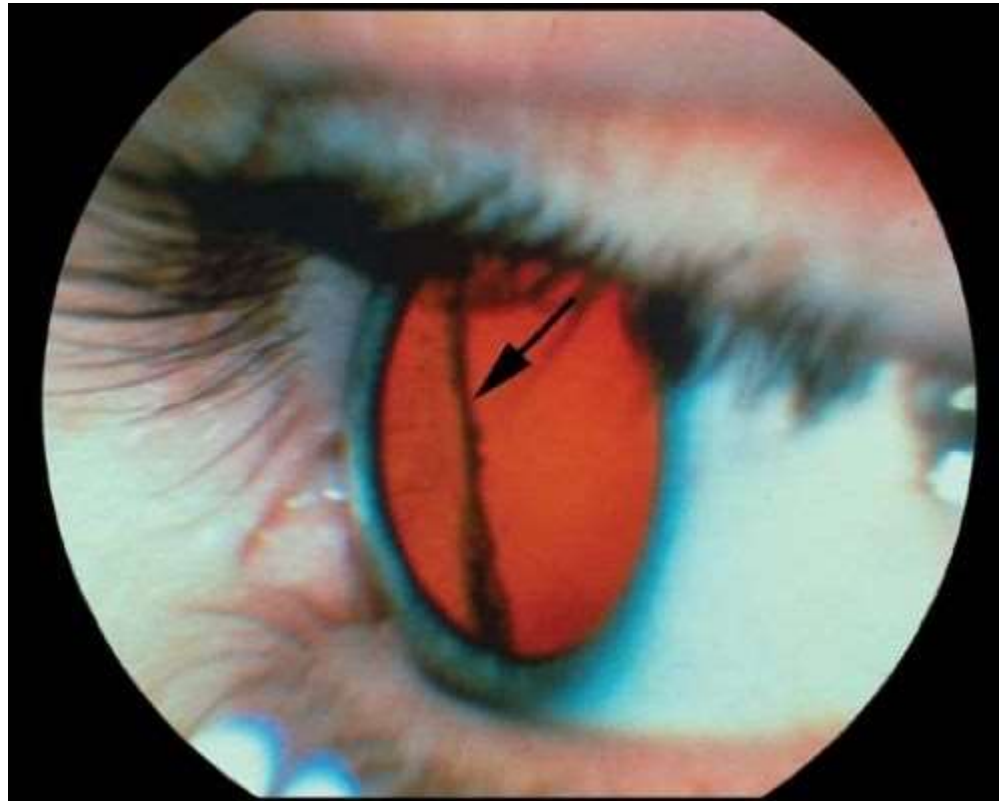


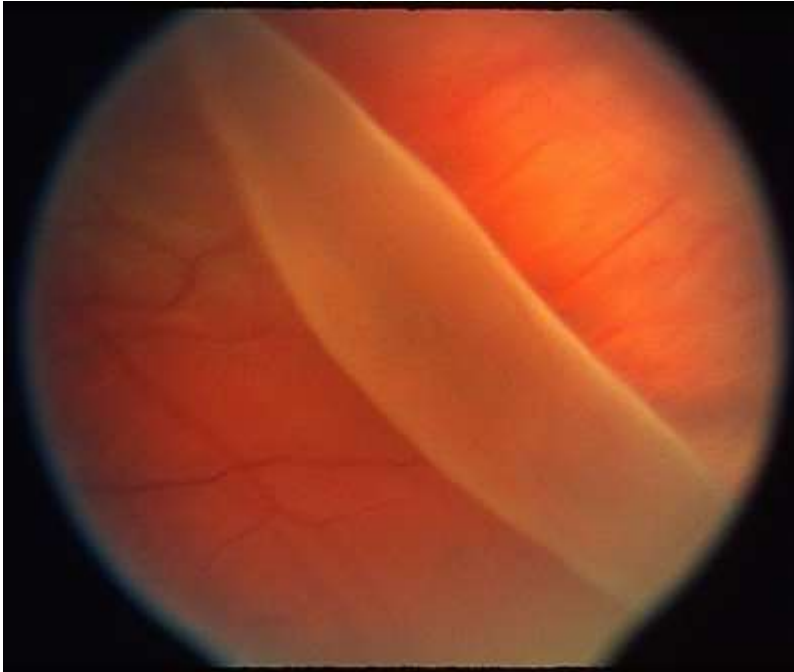


# Retinal dialysis



# Avulsion of the vitreous base





Giant retinal tear



Retinal dialysis

# Horseshoe tear



# Traumatic Retinal Breaks Often Cause Delayed TrRD

- TrRD usually occurs after a delay of months to years.
- The mean interval for postcontusion TrRD is 5 years (30% more than 10 years)

# Diagnostic Criteria for TrRD

- The diagnosis of TrRD must be based on the history and physical examination.

# Diagnostic Criteria for TrRD: History

- Acute ocular symptoms, particularly those typical for retinal tear or PVD occurring within hours to a few days of a trauma are particularly important & suggest traumatic causal relationship.
- Symptoms of actual TrRD rather than traumatic tear are much less important in establishing causal relationship to trauma.

# Diagnostic Criteria for TrRD:

## Physical Examination

- Signs of ophthalmic as well as non-ophthalmic trauma are important in helping characterize a RD.
- Demarcation lines indicate the limit or high water mark of retinal detachment that has been stationary for at least 3 months.
- A RRD with 3 concentric demarcation lines is an indication of a long standing RRD of at least 9 months duration and thus cannot have been caused by a more recent trauma.
- Proliferative vitreoretinopathy is not a reliable indicator of duration because it can occur within weeks of RRD or much later.



# Take home message

While most TrRDs occur in young males, epidemiological characteristics should not be used to establish causal relationship.

**Thank you for your attention**