

# Ophthalmic Pathology in a 16 year old Hispanic Male Concussion Patient

*“Can my concussion cause a rash?”*

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SPARCC  
Sports Medicine • Rehabilitation • Concussion Care



- Patient is a 16 year old Hispanic male that initially presented to the Emergency Room one day after sustaining a right-sided head injury associated with a brief loss of consciousness during football practice.
- Presenting symptoms (At ER):
  - Severe frontal retro-orbital headache
  - Achy, throbbing forehead pain radiating into his eyes
  - Photophobia
  - Hyperacusis
  - Dizziness
  - Neck pain and Cervical spine tenderness
- Unremarkable non contrast CT of head and cervical spine
- Unremarkable PMH
- **Patient diagnosed with a concussion at ER based on clinical signs/symptoms**



Source: Radiopedia

# Day 3



- Re-evaluated at the ER due to:
  - Progressing Right Eye pain and headache
  - Nausea and vomiting
  - New painful rash over the right face
  - Severe right-sided facial pain
  - Photophobia bilaterally (R>L)
- Infectious Disease consulted



## CBC

- H/H: wnl
- WBC: wnl
- Diff:
  - neutrophils: 75%
  - lymphocytes: 15.8%

## BMP WNL

HSV swab pending

HIV testing negative

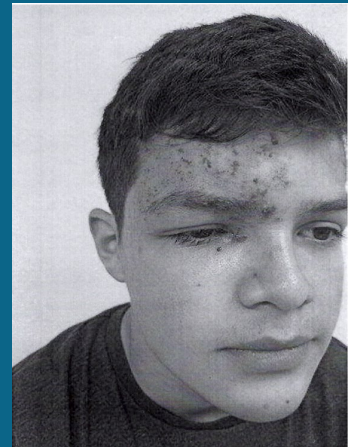
Urine GC/Chlamydia negative

Referred for Follow up at Concussion  
Clinic, Ophtho, along with ID clinic FU

# Physical Exam (Day 6)



- **Gen:** Slight distress, well-appearing
- **Skin:** erythematous maculopapular rash in a dermatomal pattern on right forehead with vesicles on an erythematous base
- **HEENT:** extra ocular movements intact, pupils equally round and reactive to light and accommodation, no scleral icterus, Swelling, lack of involvement of cornea, severe photophobia on right
- **Neck:** non-tender over cervical spine, full range of motion, with end range stiffness
- **Psychiatric:** WNL
- **Neurologic:** Cranial nerves II through XII clinically intact. Severe tenderness along V1 dermatome. Motor and sensory neurologic testing intact in all 4 extremities. Normal muscle bulk and tone throughout, DTR's +2/+2 symmetric in all 4 extremities Normal gait . Strength 5/5.
- **VOMS** Deferred due to severe oculomotor symptoms.
- **BESS testing:** double leg-0 errors, tandem-2 errors, single-deffered
- **MSK:** moving all extremities equally, full strength, no atrophy



# Testing (Cont)

## Day 6

SCAT Score: 80

King Devick

Deferred due to ocular pain

Bertec Force Plate Testing

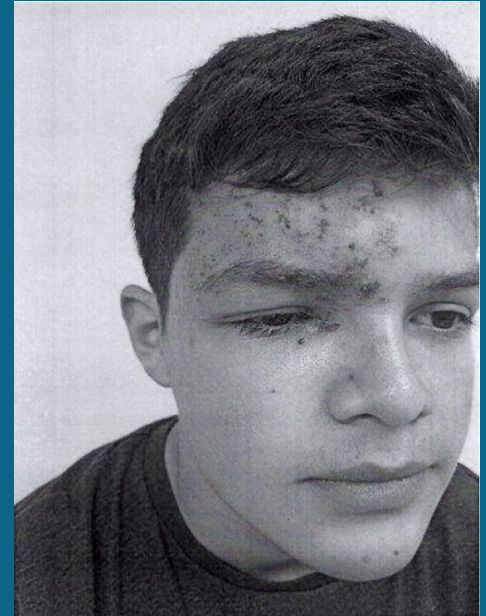
Mild abnormalities vestibular neuromuscular testing

ImPACT Testing

Deferred due to severe symptoms

Exercise Tolerance Testing

Deferred due to severe symptoms



# Differential Diagnosis

- Herpes Zoster Ophthalmicus
- HSV 1
- Preseptal Cellulitis
- Orbital Cellulitis
- Atopic Dermatitis
- Eczema Herpeticum

# Final Diagnosis

Diagnosis: Mild traumatic brain injury with associated morbidity of transient immunosuppression causing Herpes (VZV) Zoster Ophthalmicus.



# Treatment (Day 6)



- **Concussion Clinic Treatment:**

- Neurontin 300mg capsule 1PO tid for pain
- Vestibular/cervical spine rehab exercises and stretches
- Benadryl OTC ointment and Benadryl 25-50mg PO PRN at bedtime for itch
- Ondansetron ODT 4-8 mg PO prn (used week 1-2 only)

- **Ophthalmology Treatment:**

- Erythromycin 5 mg/ GM ointment
- Prednisone Acetate 1% suspension

- **Infectious Disease Treatment:**

- Acyclovir 800 mg 1 tab PO qid x 14 days

# Course (Week 2)

## Improvement in Symptoms

- Photophobia
- Headache
- Rash
- SCAT Score: 50
- Begins Part Time School

## Testing

- King Devick
- Vision I: 16.25 II: 16.84 III: 18.06
- ImPACT approaching baseline
- AR Step 1 Tolerated

# Week 3

## Improving Symptoms

SCAT: 30

Tolerating half time school

## Testing

KD Vision I: 13.94 II: 14.72 III: 14.50

ImPACT baseline

AR Step 3

NPC normal

# Week 5

## Asymptomatic

SCAT: 0

Transitioning to full time school

## Testing

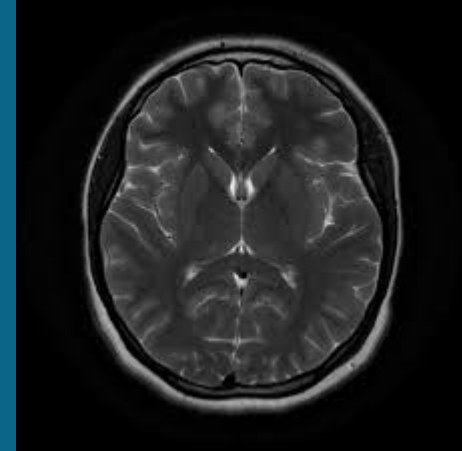
Tolerates AR Step 5 (Maximum Exertion)

Cleared for non contact sports

# Return to Play

## Week 7

- Patient tolerating school full time
- Tolerating progressive return to low risk sports per concussion guidelines.
- MRI brain normal



# Week 11

Cleared by ID and  
Ophthalmology

Continued clearance for  
contact sports



# Final Thoughts



1. Mild traumatic brain injury and transient immunosuppression.
2. Additive effect of HZO and concussion on visual symptoms.
3. HZO and complication of concussion treatment and/or delay in recovery.