Rachel Freundlich
Rotation #4 - Emergency Medicine

History
Identifying Data:
Full Name: V.C.
Address: Bronx, NY
Date of Birth: 07/29/1983
Date & Time: May 13, 2024 12:30pm
Location: Metropolitan
Religion: Not stated
Source of Information: Self
Reliability: Reliable
Source of Referral: Self
Mode of Transport: Self
Chief Complaint: "My left eye is hurting a lot" x1 day

History of Present Illness:
V.C. is a 40y/o M with PMH of T2DM presenting to the ER with left eye pain and swelling x1 day. Pt reports that he woke up this morning and noticed that his left eye had become swollen and painful. He reports that pain is exacerbated by extraocular movements. He denies any previous injury or trauma to the eye. Pt has not taken any pain medications and does not report any alleviating factors. This has not happened to him before. He notes that his most recent ophthalmology appointment was in October 2023 with normal findings. He does not wear glasses. Pt denies changes in vision, photophobia, foreign body sensation, fevers, systemic symptoms, discharge from the eye, nasal congestion, headache.

Past Medical History:
Present illnesses – T2DM
Past medical illnesses – T2DM
Hospitalized – Denies previous hospitalizations
Childhood illnesses – Denies any illnesses
Immunizations – received COVI-19 vaccine 2021, 2022; received Tdap 2021
Screening tests and results – Unknown

Past Surgical History:
Denies

At home Medications:
Metformin - 500mg PO 2x daily

Allergies:
Denies any food, drug, or environmental allergies.

Family History:

Denies significant family medical history

Social History:
V.C. is a 40 y/o M who currently lives at home with his wife and son. He works as a grocer at a local grocery store.
Habits - Admits one cup of black coffee daily. Denies tobacco, alcohol, and drug use.
Travel - Pt denies recent travel.
Exercise - Pt denies consistent exercise routine.
Safety measures - Admits to wearing a seat belt.
Sleep – Pt reports regular sleep patterns.
Sexual Hx - Pt is currently sexually active with his wife.

Review of Systems:
General – Denies recent weight loss, loss of appetite, generalized fatigue, fever or chills, or night sweats.

Skin, hair, nails – Denies changes in texture, excessive sweating or dryness, discolorations or pigmentations, moles/rashes, pruritus or changes in hair distribution.

Head – Denies headaches, vertigo or head trauma.

Eyes – Admits left eye pain and swelling. Pt does not wear eyeglasses. Denies recent vision changes, photophobia, pruritus. Last eye exam October 2021.

Ears – Denies deafness, pain, discharge, tinnitus or use of hearing aids.

Nose/sinuses – Pt denies nasal mucous discharge, epistaxis or obstruction.

Mouth/throat – Denies bleeding gums, sore tongue, sore throat, mouth ulcer or voice changes.

Neck – Denies localized swelling/lumps or stiffness/decreased range of motion.

Pulmonary system – Denies cough, wheezing, hemoptysis, dyspnea, orthopnea, cyanosis, or paroxysmal nocturnal dyspnea (PND).

Cardiovascular system – Denies chest pain, syncope, edema or known heart murmur.

Gastrointestinal system – Denies abdominal pain, nausea, diarrhea, change in appetite, rectal bleeding, intolerance to specific foods, dysphagia, pyrosis, unusual flatulence or eructations, jaundice, hemorrhoids, constipation, hematemesis.

Genitourinary system – Denies urinary frequency, hesitancy, nocturia, urinary urgency, flank pain, oliguria, polyuria, or dysuria.

Nervous – Denies seizures, headache, loss of consciousness, sensory disturbances, ataxia, loss of strength, change in cognition / mental status, weakness or recent onset memory loss.

Musculoskeletal system – Denies deformity or swelling, redness or arthritis.

Peripheral vascular system – Denies peripheral edema, discolorations, coldness or trophic changes.

Hematological system – Denies history of easy bruising, anemia, lymph node enlargement, or prior history of DVT/PE.

Endocrine system – Denies polydipsia, polyphagia, heat or cold intolerance, excessive sweating prior to admission, hirsutism, or goiter.

Psychiatric – Denies history.

Physical

General: 40 y/o M appears A&Ox3 in NAD, dressed appropriately for the weather, well groomed looking about the stated age of 40.
Vital Signs:
BP: Seated: 133/89
HR: 85 BPM
R: 18 min unlabored
T: 98.8F (forehead)
O2 Sat: 100% room air
Weight: 154 BMI: 22.74

Physical Exam:
Skin: Non diaphoretic. Warm and moist, with good turgor. Nonicteric, no erythema, pigmentation, lesions, unhealed scars, or tattoos.
Hair: Normal hair distribution. No lesions, lice, or seborrhea.
Nails: No clubbing, lesions or infection. Capillary refill <2 seconds in upper extremities.
Head: Normocephalic, atraumatic, non tender to palpation throughout. No swelling noted.
Eyes:

- Right eye
  - No swelling, foreign body, erythema, discharge or hordeolum present
  - IOP 17mmHg with automated tonometer
  - PERRLA, EOM intact with no nystagmus
  - Visual Acuity: 20/10
  - Conjunctiva: no injection, chemosis, exudate or hemorrhage
  - Fluorescein stain: No corneal abrasion or fluorescein uptake
  - Sclera white, cornea clear, conjunctiva pale pink
- Left eye:
  - Swelling and erythema of skin and L orbit, chemosis

- No foreign body, discharge or hordeolum present
- IOM 23mmHg with automated tonometer
- PERRLA, EOM intact with mild reported pain with movement
- Visual Acuity: 20/20
- Conjunctiva: conjunctival injection, no exudate or hemorrhage noted
- Fluorescein stain: No corneal abrasion or fluorescein uptake

Ears: Symmetrical and appropriate in size. No lesions, scars, scabs, erythema or tenderness present. Ear canal nonerythematous, no masses, foreign bodies present. Cone of light, tympanic membrane noted.
Nose: Nasal mucosa pink with no discharge or bleeding noted. No bony deformities or tenderness present. Septum midline.
Sinuses: Sinuses nontender to palpation.
Lips: Pink, moist, and well hydrated.
Mucosa: Pink, no masses, well hydrated, nontender, no leukoplakia.
Palate: Pink, intact with no lesions, scars, erosion.
Teeth: Good dentition.
Gingivae: Pink, moist, no hyperplasia, masses, lesions, discharge.
Tongue: Pink, well papillated, no masses, lesions, deviations. Frenulum intact.
Oropharynx: No exudates, masses, lesions, foreign bodies. Tonsils present with no exudate.
Uvula: pink, no edema.
Neck: Trachea midline. No masses, lesions, scars. FROM, no stridor, 2+ carotid pulse, no thrills, no bruits noted bilaterally, no cervical adenopathy, JVD noted.
Thyroid: Non-tender, no palpable masses, no thyromegaly, no bruits noted.
Chest: Symmetrical, no deformities, no trauma. Respirations unlabored.
Lungs: Chest expansion and diaphragmatic excursion symmetrical. Tactile fremitus symmetric throughout. Normal breath sounds throughout.
Heart: No JVP present. Irregular rate, irregular rhythm. S1 and S2 are distinct with no murmurs, S3 or S4. No splitting of S2 or friction rubs appreciated.
Abdomen: Nontender. Abdomen is nondistended with no striae or pulsations noted. No CVA tenderness appreciated. Normoactive bowel sounds present with no aortic/renal/iliac or femoral bruits. No guarding with no rebound tenderness. No hepatosplenomegaly to palpation.
Rectal: not performed
Neuro Exam: Mental status normal with no focal deficits.
PVS: Extremities are warm and without edema. No varicosities or stasis changes. Calves are supple and nontender. Pulses are 2+ and symmetric.
MSK: No erythema, warmth or crepitus noted. FROM bilaterally in upper and lower extremities.

Differentials:

Periorbital Cellulitis- the patient's presentation with chemosis, erythema, mild pain with EOM without the presence of trauma suggests periorbital cellulitis.
Orbital Cellulitis - although less likely than periorbital cellulitis in this patient, due to the patient's appearance with chemosis, pain with EOM and erythema there is concern for orbital cellulitis.

Acute angle closure glaucoma - unlikely due to patient's IOP
Conjunctivitis - unlikely due to lack of discharge / other associated symptoms
Uveitis - unlikely due to lack of changes in vision, photophobia, PERRLA

HSV Keratitis - unlikely due to normal fluorescein test

Labs: (right most column)

BASIC/COMPLETE M...	
Anion Gap	11.0
Sodium	138
Potassium	4.1
Chloride	101
CO2	26.0
BUN	14.0
Creatinine	0.5 ↓
Glucose	68 ↓
Calcium	9.3
Magnesium	2.3
eGFR(cr)	132.2
Osmolality Calc	285

CBC W/WO DIFFEREN...	
WBC	6.63
RBC	4.68
HGB	14.5
HCT	41.2
MCV	88.0
MCH	31.0
MCHC	35.2
RDW	11.9 ↓
PLT	305
MPV	9.7

RENAL FUNCTION PA...	
Sodium	138
Potassium	4.1
Chloride	101
CO2	26.0
BUN	14.0
Creatinine	0.5 ↓

DIABETES								
Glucose								68 ↓
POC Glucose	193 ↑	234 ↑		151 ↑			113 ↑	
Hemoglobin A1C			7.8 ↑					

Imaging:

CT Maxillofacial with IV contrast:

- mild left preseptal/facial cellulitis
- left maxillary medial incisor radicular cyst, with discontinuity of the buccal cortex, and suggestion of tiny subperiosteal abscess
- sinus findings as above
- enlarged adenoids, palatine, and lingual tonsils

Assessment:

V.C. is a 40 y/o M presenting with left eye pain and swelling x1 day. Left eye appears with upper and lower eyelid swelling with conjunctival injection and erythema. Pt denies changes in vision, photophobia,

recent eye trauma or injury. Negative fluorescein staining, no evidence of corneal abrasion. Left IOP 23mmHg. CT Maxillofacial reveals mild left preseptal/facial cellulitis.

Plan:

- Left eye pain and swelling 2/2 to preseptal cellulitis
- Pt provided Toradol (15mg) injection for pain in ER
- Pt prescribed Augmentin (875-125mg BID for 10 days). First dose given in ED. Prescription sent to pt's preferred pharmacy. Pt provided instructions to complete antibiotic course
- Urgent referral to Optho provided
- Pt provided education regarding preseptal cellulitis
- Pt stable for discharge
- Pt provided with strict return instructions if EOMs become increasingly painful, changes in vision occurs, fever develops or symptoms worsen

Article:

Studies have suggested that the addition of corticosteroids in the management of periorbital and orbital cellulitis may be beneficial in regards to reducing swelling, pain, length of hospital stay (for those admitted) and surgical intervention. This study looks at this question further to better understand the benefits of corticosteroids in this diagnosis. One RCT was included in this meta analysis. The study divided subjects into two groups - one group received antibiotics alone and the other group received antibiotics plus corticosteroids (oral prednisolone). The study looked at outcomes such as length of hospital stay, use of IV antibiotics, pain, fever, periorbital edema, and extraocular movements. Patients that received corticosteroids in addition to antibiotics were in the hospital for an average of 14 days compared to 18 days for those that received antibiotics alone. The duration of IV antibiotics for those in the control group was 11 days compared to 8 for those receiving dual treatment. No evidence of significant pain reduction was found in the group that received corticosteroids, although they tended to have pain relief sooner than those receiving antibiotics alone. No difference in swelling was noted after 1 week amongst the two groups. Those that received corticosteroids tended to experience improved EOMs faster than those not receiving corticosteroids.

Based on these research findings, it seems that there are benefits to including corticosteroid treatment for periorbital and orbital cellulitis. However, there is concern for immune suppression with the use of corticosteroids and the data is not particularly convincing regarding the necessity of corticosteroids for these patients. Therefore, antibiotics remain the standard of care when treating these patients.

Kornelsen E, Mahant S, Parkin P, et al. Corticosteroids for periorbital and orbital cellulitis. *Cochrane Database Syst Rev*. 2021;4(4):CD013535. Published 2021 Apr 28. doi:10.1002/14651858.CD013535.pub2