Case Study #4
PEDIATRIC CASE STUDY

SCENARIO
Mary Jennings has brought her son Joe to your office. Joe is a 6-year old Jordanian male. He presents with the complaint of an itchy red eye. Mary states that it was crusted with dry yellowish drainage several times this morning. Joe has complained to Mary frequently about pain in his eye."

TENTATIVE DIAGNOSES
Based on the information provided so far, what are the potential diagnoses?

Potential Diagnoses	Provide rationale to support each potential diagnosis based on information provided above.
Conjunctivitis	**Acute, itchy red eye with yellow crusting in the canthus, pain in eye**
Corneal abrasion/eye trauma	**Pain in eye, ocular redness, increased lacrimation on affected side, unilateral, acute**
Herpes simplex blepharitis	**Pain in eye, ocular redness**
Iritis	**Pain in eye, ocular redness, unilateral usually**
Glaucoma	**Pain in eye, redness, increased lacrimation in affected eye, can be unilateral in acute glaucoma**

HISTORY
Below is the history obtained from the mother/child. What are the significant findings that will help you narrow down to a specific diagnosis?

Requested Data	Data Answer
Allergies	**None known.**
Medications	**None.**
Recent changes in health	**No problems until present complaint. Last checkup 3 months ago.**

Chief complaint: onset, location, quality, aggravating/alleviating factors	**Joe describes burning, itching, and pain in OD. States that pain is not "too bad." Mary describes a thick yellow drainage. States it looks like pus. Joe's eyelids got stuck together by drainage. Joe denies a change in vision and blurred vision. Pain is bad when he looks at bright lights. Mary states warm wet washcloths have helped relieve burning**
Associated manifestations	**No history of recent or concurrent respiratory infection.**
Associated symptoms	**Denies history of throat pain, ear pain, rhinorrhea.**
History of exposure to conjunctivitis	**None.**
History of swimming in chlorinated or contaminated water	**Has swam two times in the past week in nonchlorinated pool.**
History of trauma to eye	**None.**
History of exposure to chemical	**None.**
Recent cold sores or exposure to herpes lesions	**None.**
Recent history of impetigo	**None, but his younger brother was started on Keflex 3 days ago for impetigo on his face.**
Family members with eye problems	**Joe has two younger siblings who do not have any eye symptoms.**
Past medical history	**Normally healthy. No hospitalizations or surgeries.**

PHYSICAL EXAM

Significant portions of PE based on the chief complaints

SYSTEM	FINDINGS	RATIONALE
Skin	**Skin is pink and supple, no lesion noted.**	**Overall quick assessment of visible skin should be performed. Particular attention should be given to the face.**
Heart sound	**S_1 and S_2 normal, without murmur**	**Provides baseline information.**
Breath sounds	**Clear to auscultation**	**Allows the NP to determine if there has been respiratory involvement.**

Vital signs	**T (oral) 98. HR 84, RR 22, BP 88/56**	**Gives an indication of possible infection.**
Ear, nose, throat	**TMs pearl gray bilaterally. Nares patent and free of drainage. No pharyngeal erythema or edema. No oral lesions.**	**Gives an indication of possible infection.**
Eyes **Eyes (cont.)**	**OS sclera white, without injection, erythema, or edema. OD edema of eyelids present. Crusted yellow drainage on lashes. Conjunctiva markedly inflamed. Cornea and eyelid margins without ulceration. PERL with positive red reflex bilaterally. Visual acuity reveals OD 20/20, OS 20/20.0**	**Needs to evaluate eyes thoroughly to identify possible diagnoses. Visual acuity should be completed for all patients with eye problems. It is vital for patients with decreased vision. This test may be painful if the child has photophobia.**
Fundoscopic	**Discs well marginated. No AV nicking**	**Provides a quick indication of eye health. This test may be difficult owing to photophobia and constriction of pupils.**
Lymphatics	**No palpable lymph nodes in the head of neck.**	**Palpation of lymph nodes can provide an indication of infection.**

DIFFERENTIAL DIAGNOSES

Provide the significant positive and negative data that support or refute your diagnoses.

DIAGNOSIS	POSITIVE DATA	NEGATIVE DATA
Allergic conjunctivitis	**Itchy, redness, edema of eyelids, normal visual acuity**	**Unilateral, no history of seasonal allergies, pain is usually not associated with allergic conjunctivitis, clear drainage is associated with allergic conjunctivitis**

Bacterial conjunctivitis	Itchy, redness, edema of eyelids, purulent drainage, eyelid sticking together, normal visual acuity and pupillary reactivity Same bacteria that caused his brother's impetigo could be the culprit of his eye infection, photophobia; discomfort "pain not that bad", no palpable preauricular nodes.	
Chemical conjunctivitis	Redness, itchy, normal visual acuity,	Has not been in chlorinated pool. Eyes are not dry. Usually bilateral since both eyes would have been exposed to chemical.
Viral conjunctivitis	Redness, burning, could have been transmitted in a contaminated pool, unilateral	No preauricular nodes palpable, rarely itching associated with viral conjunctivitis ; no recent upper respiratory infection; photophobia usually not symptom; discharge from eye should be watery if its viral.
Corneal abrasion/eye trauma	Unilateral, eye pain, acute, photophobia,	Visual aquity is not decreased, increased lacrimation should not be purulent, no history of recent eye trauma or does not wear contact lenses, no ulcerations seen on exam;
Herpes simplex blepharitis	Itchy, discharge, inflamed eye lid margins, This type of blepharitis is more common in children than adults.	No redness, no herpetic lesions on skin, no palpable preauricular nodes

Iritis	**Inflamed conjunctiva, pain, photophobia, acute**	**No decreased visual acuity in PE as you would expect to find in iritis, pupils are equal (would expect small pupillary size of affected eye) No blurred vision reported; itching is not an a reported symptom with iritis**
Glaucoma	**Lid edema, redness, pain, photophobia**	**Glaucoma is children in rare, cornea without cloudiness, increased lacrimation in eye should not purulent, fundus exam was normal (would expect optic nerve atrophy, congestion or cupping) Pupils not fixed or oval.**

DIAGNOSTIC TESTS

Based on the history and PE, the following tests were ordered. The test and results are provided. You will need to provide a rationale to support the use of this test or provide documentation why you would not order this test in this case.

DIAGNOSTIC TEST	RESULTS	RATIONALE
Eye culture and gram stain	**Test not done.**	**This test is usually not recommended for mild conjunctivitis with a suspected viral, bacterial, or allergic origin.**

DIAGNOSES

Based on the data provided, what are the appropriate diagnoses for Joe?
List all appropriate diagnoses for Joe in priority order.

Diagnoses	Rationale

1. Bacterial conjunctivitis	**1. Itchy, redness, edema of eyelids, purulent drainage, eyelid sticking together, normal visual acuity and pupillary reactivity Same bacteria that caused his brother's impetigo could be the culprit of his eye infection, photophobia; discomfort "pain not that bad"**

THERAPEUTIC PLAN

Provide answers with scientific basis for the following questions about Joe's treatment plan. Provide APA references when indicated.

(1) What therapeutic agent would you use in planning care for Joe?

Azithromycin 1% solution - one drop in affected eye BID for 2 days, then once daily for the next 5 days.

If itching is causing a lot of concern, I would suggest Ketoifien ophthalmic one drop in eye every 8 to 12 hours, only twice daily. It is over the counter as TheraTears and is relatively inexpensive (10 dollars a bottle) and rapid onset of action because of high concentration in the eye.

(2) What is your rationale for choosing this particular agent?

- Azithromycin in active in against Gram positive microbes (patient has been exposed to impetigo, and the bacterial mostly associated with that is staphococcus aureas which is Gram positive).

- The dosing is just twice a day for 2 days and once a day for 5. This will help with medication compliance with the medication.

(3) What education does Mary need to provide relief for Joe and decrease the risk of reinfection?

-Educate patient and mother that conjunctivitis is very contagious and can easily be spread to other household members. The patient should not touch his eyes and frequently wash his hands. And do not share face towels, wash cloths…and such. Don't touch eye with eye applicator.

- Teach the proper technique of using an eye drop:

Have mother tilt his head back and look upward. Pull down the lower eyelid to make a pouch. Hold the dropper directly over eye and place one

drop into the pouch. Have him then look downward, gently eyes, and place one finger at the corner of eye (near the nose). Apply gentle pressure for 1 to 2 minutes before opening eyes. This will prevent the medication from draining out.

- If patient uses the OTC TheraTears, then they must wait at least 5 minutes before applying this. If they give it right after the antibiotic it will only flush out the antibiotic drop.

- Patient also needs to stay out of school until eye no longer has exudate or at least been on medications for 24 hours.

- Follow up is usually not indicated for mild cases that resolve without problems.

Uphold, C.R & Graham, M.V. (2013). *Clinical Guidelines in Family Practice,* 5th ed. Barmarrae Books: Gainesville.