DIAGNOSIS	MANAGEMENT	CONSULTATION	DISPOSITION
1.Caustic keratoconjunctivitis	Immediate and copious irrigation with tap water or sterile normal saline until tear-film pH = 7. *Solids*: lift particles out with dry swab before irrigation *Acids*: minimum of 2 L *and* 20 min *Alkalis*: minimum of 4 L *and* 40 min	Ophthalmologist must come to ED if there is any abnormal visual acuity or objective finding on examination after sufficient irrigation, with exception of expected injection of conjunctiva secondary to treatment.	May discharge only if tear film pH = 7 *and* no findings on examination except conjunctival injection *and* ophthalmologist can reevaluate next day.
2.Blepharitis Inflammation of eyelid margins often a/w crusts on awakening, FB sensation, and tearing.	None except artificial tears for dry eye.	Outpatient referral only for treatment failure after 2 wk.	Discharge with instructions to apply warm compresses to eyelids for 15 min qid and scrub lid margins and lashes with mild shampoo on washcloth bid.
3.Chalazion Inflammation of meibomian gland causing subcutaneous nodule within the eyelid.	None.	Outpatient referral only for treatment failure after 2 wk.	Discharge with instructions to apply warm compresses to eyelids for 15 min and gently massage nodule qid.
4.Dacrocystitis and dacroadenitis Eye tearing and inflammation of lower eyelid inferior to lacrimal punctum finding redness and tenderness over nasal aspect of lower lid and adjacent periorbital skin.	First r/o periorbital cellulitis (#9) and orbital cellulitis (#7). Inspect for obstruction of punctum by SLE, may express pus by pressing on sac, PO Rx for nasal and skin flora if not admitting.	Ophthalmologist may admit if systemically ill, case is moderate or severe, or no social support for patient. Ask about culturing before Rx if admitting, then Rx same as for periorbital cellultitis (#9).	May discharge mild cases with PO analgesics and antibiotics (e.g., amoxicillin/clavulanate), and instructions to apply warm compresses to eyelids for 15 min and gently massage inner canthal area qid.
5.Hordeolum (a.k.a. stye) Abscess in eyelash follicle or modified sebaceous gland at lid margin: *external* or *internal* based on side of lid margin that abscess is pointing.	*External*: Warm compresses often all that is needed, may Rx anti-*Staph* ointment bid. *Internal*: PO Rx for β-lactamase *Staph*.	Outpatient referral only for treatment failure after 2 wk.	Discharge with instructions to apply warm compresses to eyelids for 15 min and gently massage abscess qid.
6.Inflammatory pseudotumor* Nonspecific idiopathic retrobulbar inflammation with eyelid swelling, palbebral injection of conjunctiva, chemosis, proptosis, blurred vision, painful or limited ocular mobility, binocular diplopia, edema of optic	Measure IOP. Evaluate for infection, diabetes mellitus, and vasculitis with CBC, BMP, UA, and ESR. Obtain axial CT of brain and axial and coronal CT of orbits and sinuses.	IOP > 20 mm Hg may be surgical emergency, Rx to decrease IOP in ED.	May discharge if no systemic problems, no findings of particular concern on CT, and IOP > 20 mm Hg. Start high-dose PO steroids after discussion with ophthalmologist and ensure reevaluation in 2–3 days.

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disk, or venous engorgement of retina.			
7.Orbital cellulitis* Eyelid swelling, redness and warmth of skin overlying orbit, tenderness of skin overlying bone palbebral injection of conjunctiva, and chemosis. Differentiated from periorbital cellulitis by *presence* of any finding of fever, ill appearance, blurred vision, proptosis, painful or limited ocular mobility, binocular diplopia, edema of optic disk, or venous engorgement of retina.	Measure IOP. Start IV Rx with second-generation cephalosporin (e.g., cefuroxime, cefoxitin, or cefotetan) or with ampicillin/sulbactam to cover sinus and skin flora. Alternative Rx is ticarcillin/clavulanate, piperacillin/tazobactam, vancomycin, or clindamycin + third-generation cephalosporin (e.g., cefotaxime or ceftriaxone).	IOP > 20 mm Hg may be surgical emergency, Rx to decrease IOP in ED. Obtain blood cultures and start antibiotics. Axial and coronal CT of orbits and sinuses to r/o FB, retrobulbar abscess, orbital gas, subperiosteal abscess, osteomyelitis, and changes in cavernous sinus. Consider LP.	Admit all cases of orbital cellulitis.
8.Orbital tumor* Blurred vision, proptosis or other displacement of globe, painful or limited ocular mobility, or binocular diplopia (but can be asymptomatic).	Measure IOP. Evaluate for extraocular signs of malignancy. Obtain axial CT of brain and axial and coronal CT of orbits and sinuses.	IOP > 20 mm Hg may be surgical emergency, Rx to decrease IOP in ED. Ophthalmologist may want MRI, MRA, or orbital US.	Based on findings and discussion with consultant.
9.Periorbital cellulitis or erysipelas Eyelid swelling, redness and warmth of skin overlying orbit, tenderness of skin overlying bone, palbebral injection of conjunctiva, and chemosis. Differentiated from orbital cellulitis by *absence* of any other finding listed in #7.	First r/o orbital cellulitis (#7). PO Rx for sinus and skin flora if not admitting.	Ophthalmologist may admit if systemically ill, case is moderate or severe, or no social support for patient.	May discharge mild cases with PO antibiotics. Ophthalmologist must reevaluate next day to ensure no orbital extension.
10.Retrobulbar abscess* Findings of orbital cellulitis (#7) but a/w increased IOP.	Measure IOP unless possibility of ruptured globe. IOP > 30 mm Hg may require emergent needle aspiration or lateral canthotomy and cantholysis in ED.	IOP > 20 mm Hg may be surgical emergency, Rx to decrease IOP in ED. Obtain axial CT of brain and axial and coronal CT of orbits and sinuses.	Admit all cases of retrobulbar pathology causing increased IOP. Others might be candidates for discharge depending on cause of problem.
11.Retrobulbar emphysema* Findings of pseudotumor (#6) but a/w increased IOP.	*Abscess*: Antibiotics as in orbital cellulitis (#7). *Emphysema*: Prophylax with antibiotics to cover sinus flora. *Hematoma*:		

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	Correct any coagulopathy or thrombocytopenia.		
12.Retrobulbar hematoma* Findings of pseudotumor (#6) but occurs due to trauma, coagulopathy, or thrombocytopenia and a/w diffuse subconjunctival hemorrhage anteriorly and extending posteriorly as well as increased IOP.			
13.Keratitis (abrasion or UV injury) Pain, FB sensation, blepharospasm, tearing, photophobia, epithelial disruption on inspection under white light or fluorescein pooling under blue light. SPK appears as stippling of corneal surface [often lower 2/3 of cornea if due to light exposure].	First r/o corneal penetration either grossly or employing Seidel's test. Relieve pain and blepharospasm with topical anesthetic. Inspect all conjunctival recesses and superficial cornea for any foreign material that can be removed by irrigation or manually lifted from surface. Tetanus prophylaxis is standard of care even if cornea not penetrated.	Ophthalmologist must come to ED if there is any concern for globe penetration. Otherwise consult for follow-up examination in 1–2 days. One-time administration of cycloplegic agent may limit photophobia until follow-up examination.	May discharge cases not infected or ulcerated on topical antibiotic prophylaxis using polymyxin B combinations with bacitracin (ointment) or trimethoprim (solution). Gentamicin and sulfacetamide are less desirable single-agent alternatives. PO NSAIDs or narcotics for analgesia. Patching not necessary.
Keratitis (ulceration)* Symptoms and signs as above. Ulceration from complications of contact wear or neglected corneal abrasion has “scooped out” epithelium with surrounding edema appearing as white “cloudiness” in clear tissue.	Relieve pain and blepharospasm with topical anesthetic. *Staph*. and *Strep*. species still most common organisms, but *Pseudomonas* greater percentage in existing infections (especially contact lens wearer), so Rx with topical fluoroquinolone is preferred.	Discuss any potential need to debride or culture before starting antibiotic.	Based on findings and discussion with consultant. Typical ciprofloxacin dosing is 1 gt. q 15 min for 1 hr, then 1 gt. q hr for 8 hr, then 1 gt. q 4 hr until seen by consultant next day. PO NSAIDs or narcotics for analgesia. No patch.
Keratitis (herpetic infection)* Symptoms and signs as above. Look for other signs of herpes, varicella, zoster (or CMV infection in immunocompromised patient). Look for “dendritic” defects of cornea with fluorescein under blue light.	Relieve pain and blepharospasm with topical anesthetic. Rx with trifluridine 1% solution, vidarabine ointment, or acyclovir ointment. Varicella-zoster and CMV not normally given antivirals if immunocompetent.	Discuss with ophthalmologist any potential need to debride or culture before starting antiviral.	Based on findings and discussion with consultant. Typical trifluridine dosing is 1 gt. q 2 hr for 7 days, then taper over 2 more wk. Typical vidarabine or acyclovir dosing is five times a day for 7 days, then taper over 2 more wk. PO NSAIDs or narcotics for analgesia. No patch.

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14.Keratoconjunctivitis Conjunctivitis with subepithelial infiltrates in cornea causing pain and decreased vision, possibly with halos reported.	Treat for conjunctivitis by likely etiologic category (#25–30).	Discuss findings and use of prednisolone acetate 1% (frequency determined by ophthalmologist).	May discharge patient with medications recommended by ophthalmologist and ensure reevaluation in 2–3 days.
15.Episcleritis Rapid onset of localized pain, injection of episcleral vessels, and localized tenderness.	Relieve irritation with artificial tears and decrease inflammation with ketorolac gtt.	Outpatient referral only for treatment failure after 2 wk.	May discharge patient with PO NSAIDs alone or in combination with topical ketarolac gtt.
16.Scleritis* Progressively increasing eye pain with radiation to ipsilateral face and decreasing vision, photophobia, tearing, and possible pain with eye motion.	Decrease inflammation with PO NSAIDs.	Discuss findings and use of topical or PO steroids.	May discharge patient with medications recommended by ophthalmologist and ensure reevaluation in 2–3 days.
17.Anterior uveitis and hypopyon* Eye pain, photophobia, tearing, limbal injection of conjunctiva, and cells or flare in anterior chamber. Hypopyon is layering of white cells (pus) in anterior chamber.	First r/o glaucoma with IOP measurement. Rx in ED if IOP > 20 mm Hg. Otherwise OK to dilate pupil with 2 gtt. of cyclopentolate 1%.	Discuss findings and use of prednisolone acetate 1% (frequency determined by ophthalmologist but range is q 1–6 hr).	May discharge patient with medications recommended by ophthalmologist and ensure reevaluation in 2–3 days. Patients with hypopyon are generally admitted.
18.Acute angle-closure glaucoma Sudden-onset eye pain and blurred vision that may be a/w frontal headache, nausea, and vomiting. Anterior eye may manifest shallow or closed angle between iris and cornea, pupil fixed in mid-dilation, or limbal injection of conjunctiva.	Decrease production of aqueous humor. Timolol 0.5% 1 gt., then repeat in 30 min. Apraclonidine 1% 1 gt. once. Dorzolamide 2% 2 gt. *or if sickle cell disease or trait* then methazolamide 50 mg PO. Decrease inflammation. Prednisolone 1% 1 gt. every 15 min four times.	Discuss any IOP > 20 mm Hg with ophthalmologist.	Based on findings and discussion with consultant, which primarily depends on speed of onset and response to treatment.
Rx in ED if IOP > 30 mm Hg.	Constrict pupil. Pilocarpine 4% 1 gt., then repeat in 15 min Consider establishing osmotic gradient Mannitol 2 g/kg IV.		

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19.Hyphema* Pain, decreased visual acuity, gross or microscopic blood in anterior chamber, may be a/w dilated and fixed pupil following blunt trauma. Graded by amount of blood Percentage of vertical diameter of anterior chamber when blood layers with patient in upright position. Microhyphema shows no layering and only suspended red blood cells.	First r/o globe rupture. May require ultrasound if cannot visualize posterior structures. Measure IOP unless possibility of ruptured globe. IOP > 30 mm Hg may require acute treatment as in glaucoma (#18). If IOP > 20 mm Hg and no iridodialysis, may use cycloplegic to prevent iris motion.	Discuss findings and use of ϵ-aminocaproic acid and steroids, other medical therapy, best disposition, and follow-up examination by ophthalmologist within 2 days. Some patients may be admitted for observation, bed-rest, head elevation, and frequent medication administration.	Most patients can be discharged with careful instructions to return for any increased pain or change in vision. Patients should decrease physical activity and sleep with an eye shield in place. Eyes should be left open while awake, so any change in vision can be immediately recognized. PO NSAIDs or narcotics for analgesia.
20.Endophthalmitis* Progressively increasing eye pain and decreasing vision, diminished red reflex, cells and flare (and possibly hypopyon) in anterior chamber, chemosis, and eyelid edema.	Empirical parenteral antibiotic administration with cefazolin + gentamicin *or* vancomycin + cefotaxime, ceftazidime, *or* ceftriaxone to cover *Bacillus, enterococcus*, and *Staphylococcus* spp.	Ophthalmologist must admit for parenteral and possibly intraocular antibiotics.	Admit all cases of endophthalmitis.
21.Inflamed pingueculum Inflammation of soft yellow patches in temporal and nasal edges of limbal margin.	Decrease inflammation with naphazoline or ketorolac gtt.	Outpatient referral only for treatment failure after 2 wk.	Discharge to follow-up with ophthalmologist for possible steroid therapy or surgical removal.
22.Inflamed pterygium Inflammation of firmer white nodules extending from limbal conjunctiva onto cornea.	Same as #21	Same as #21	Same as #21
23.Scleral penetration* Localized redness at site of entry, teardrop pupil, blood in anterior chamber or loss of red reflex.	Protect eye from further pressure, provide pain relief, and prevent vomiting. Tetanus prophylaxis.	Ophthalmologist must come to ED if there is any concern for globe penetration.	Admit for IV antibiotics and possible procedural intervention.
24.Subconjunctival hemorrhage Red blood beneath clear conjunctival membrane.	Exclude coagulopathy or thrombocytopenia, if indicated by history.	None required if no complications.	Reassure patient that red should resolve over 2–3 wk.
25.Bacterial conjunctivitis* Hyperpurulent discharge not typical of common “pink eye” and more commonly unilateral in	Topical polymyxin B trimethoprim in infants and children, because more *Staph*. spp. Topical sulfacetamide or gentamicin clinically	Culture drainage and ophthalmology consult in all neonates and those at risk for vision loss or systemic sepsis.	Discharge uncomplicated cases with 10 days of topical antibiotics in both eyes, regardless of laterality of apparent infection. Use ointments in

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adults. Inflammation of eyelid margins a/w lid edema, chemosis, and possibly subconjunctival hemorrhage, but usually no follicular "cobblestoning."	effective in 90% of uncomplicated adult cases. Use topical fluoroquinolone if *Pseudomonas* possible.	*Neisseria gonorrhoeae* can be rapidly sight-threatening.	infants and gtt. in others.
26.Allergic conjunctivitis Often bilateral palpebral injection of conjunctiva and follicular cobblestoning of inner surface of lids that may be seasonal and a/w other allergic symptoms such as rhinitis.	Decrease irritation with naphazoline gtt.	Outpatient referral only for treatment failure after 2 wk.	Identify antigen if possible. Consider treating other allergic symptoms with PO antihistamines.
27.Contact dermatoconjunctivitis Localized lid and conjunctival redness and edema.	Irrigation with tap water or sterile normal saline. Decrease irritation with naphazoline gtt.	Outpatient referral only for severe cases or treatment failure after 2 wk.	Identify offending agent and avoid subsequent exposure. Discharge uncomplicated cases on continued naphazoline.
28.Toxic conjunctivitis Diffuse conjunctival injection, chemosis, and lid edema.	Same as #27	Same as #27	Same as #27
29.*Chlamydia* conjunctivitis Often bilateral palpebral injection of conjunctiva in neonate or other individual at risk for sexually transmitted disease.	Rx PO azithromycin for *Chlamydia*. Consider parenteral ceftriaxone for concurrent *Neisseria gonorrhoeae*.	Culture drainage and consult ophthalmology in all neonates and those at risk for vision loss or systemic sepsis.	Discharge uncomplicated cases on 5 days of PO azithromycin.
30.Viral conjunctivitis Often bilateral palpebral injection of conjunctiva and follicular cobblestoning of inner surface of lids. Inflammation of eyelid margins often a/w crusts on awakening, FB sensation, and tearing.	Decrease irritation with artifical tears, naphazoline, or ketorolac gtt.	Culture drainage and consult ophthalmology in all neonates and those at risk for vision loss or systemic sepsis.	Ask about pregnant mothers, infants, and immunocompromised individuals in close contact. Discharge uncomplicated cases with instructions on respiratory and direct-contact contagion for 2 wk.