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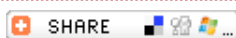
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Blebitis: 74 year-old with red eye after trabeculectomy

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Chief Complaint: Red, irritated eye with decreased vision.



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History of Present Illness: A 74-year-old female presented to the University of Iowa Department of Ophthalmology glaucoma service with a 1-day history of conjunctival injection and mild discomfort in her right eye (OD). She had a known history of pigmentary glaucoma that was treated with a combined procedure of cataract extraction/posterior-chamber intraocular lens (PCIOL) and trabeculectomy with mitomycin C in the right eye five years earlier. Her visual acuity had decreased from 20/125 (5 months previously) to 20/250 OD on presentation.

Past Ocular History: Pigmentary glaucoma (OD), age-related macular degeneration in both eyes (OU), and lattice degeneration (OU). The patient had suffered a severe retinal detachment in the left eye (OS) with very poor residual vision despite treatment with a scleral buckle procedure.

Past Medical History: Hypertension, Thyroidectomy

Medications: Latanoprost OD qhs, Synthroid, and Buspar

Family History: Noncontributory

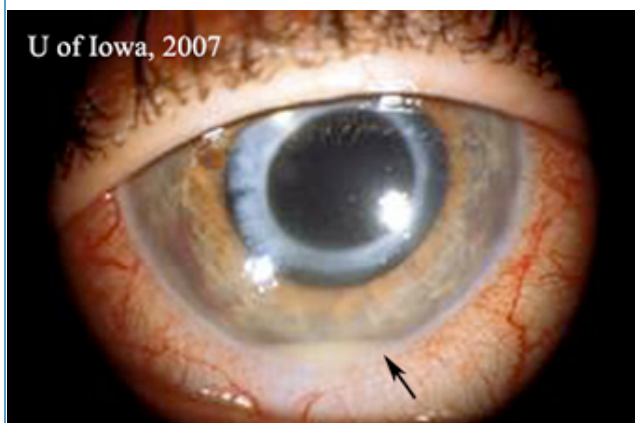
Social History: The patient denies alcohol and tobacco use

Exam, Ocular:

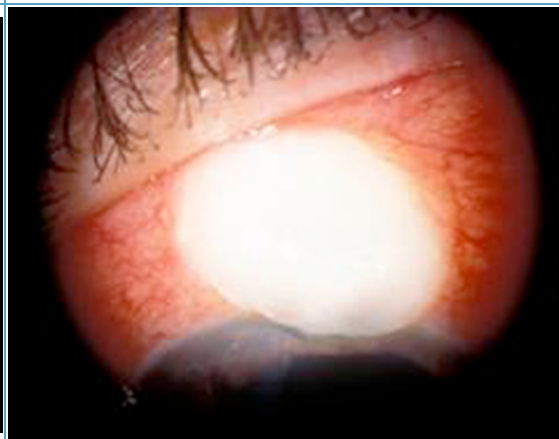
- Visual Acuity, with correction: OD--20/250; OS--Light perception
- Intra-ocular pressure: OD -- 5mmHg;
- External and anterior segment examination, OD: Conjunctival hyperemia with papillary reaction. There were 3+ cells (per high power field) visible in the anterior chamber with a small (0.75 mm) hypopyon (Figure 1A). The right eye had an elevated, thin avascular bleb with a small infiltrate visible within the bleb (Figure 1B). The bleb had a positive Seidel test (Figure 2).
- Dilated fundus exam (DFE), OD: 2+ vitreous cell with a hazy view. Visible retina appeared to be normal.

Figure 1

1A: Injection of the conjunctiva and a small hypopyon are evident



1B: The bleb is thin and avascular, with infiltrate

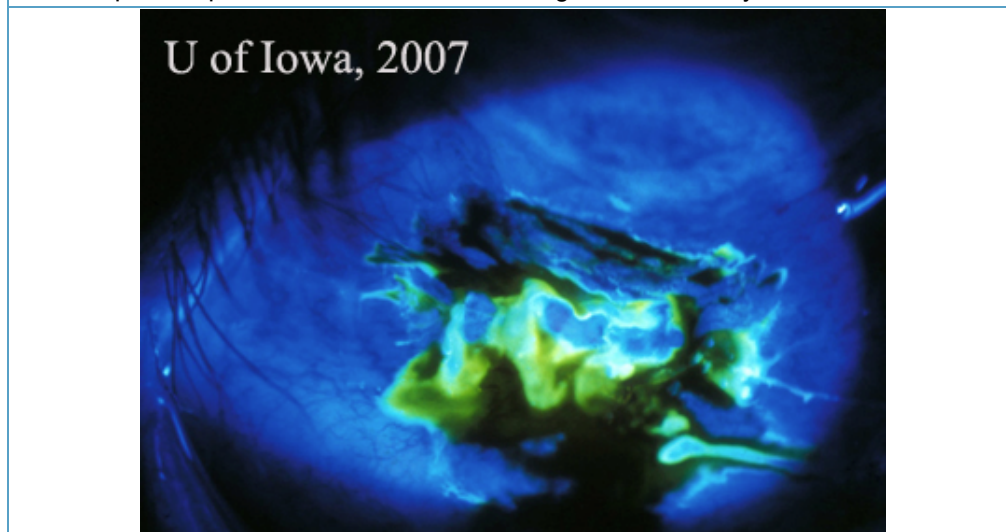


Course: The diagnosis made was bleb-related endophthalmitis. The treating physician performed aqueous and vitreous taps, administered intravitreal vancomycin and ceftazidime, and prescribed hourly topical, fortified gentamycin and vancomycin drops.

The patient responded well to the combination of intravitreal and topical antibiotics. Her visual acuity has returned to baseline and the bleb leak resolved in two months. Two years later, she developed a recurrent bleb leak and underwent bleb revision. She has had no further bleb-related infections.

Figure 2

An example of a positive Seidel test of a leaking trabeculectomy bleb in a similar case.



Discussion: The differential diagnosis of a red eye after trabeculectomy includes blebitis and bleb-related endophthalmitis. Blebitis is an infection limited to the filtering bleb, whereas bleb-related endophthalmitis is an intraocular infection that includes the vitreous. Inflammatory cells may spill over into the anterior chamber in blebitis, but the vitreous is quiet. The presence of inflammatory cells within the vitreous is key for differentiating blebitis from bleb-related endophthalmitis.

There is no consensus on the management of blebitis, and glaucoma specialists have a variety of practice patterns¹. Blebitis can usually be treated with intensive topical antibiotics (such as fortified gentamicin and cefazolin) alone². Some surgeons also use parenteral and subconjunctival antibiotics. If the infection extends into the anterior chamber and the vitreous is involved, then the eye should be treated as a full-blown endophthalmitis. Anterior chamber and vitreal samples should be obtained for culture.

Forster et al³ demonstrated more than 25 years ago that the yield of organisms from the anterior chamber tap is frequently less than the yield obtained from vitreous taps. Similar findings were reported subsequently in the Endophthalmitis Vitrectomy Study⁴.

The intraoperative application of MMC often is associated with the formation of an avascular bleb and an increased risk of endophthalmitis^{5,6}. All patients who have had trabeculectomies need to be taught the signs and symptoms of blebitis and endophthalmitis, and they should be told that they must report immediately if they develop a red eye, purulent discharge, or pain in the eye².

Diagnosis: Bleb-related endophthalmitis

EPIDEMIOLOGY	SIGNS
<p>Risk factors:</p> <ul style="list-style-type: none"> • Full thickness filtering surgery • Use of antifibrotic agents such as 5-fluorouracil (5-FU) and mitomycin-C (MMC) • Late-onset filtering bleb leakage • Inferior location of the filtering bleb • Blepharitis or ocular surface disease 	<ul style="list-style-type: none"> • Milky-appearing ischemic bleb surrounded by intense conjunctival hyperemia • Anterior chamber inflammatory reaction • Mucopurulent infiltrate within the bleb • Mild to moderate anterior segment inflammation • Hypotony if associated with bleb leakage
SYMPTOMS	TREATMENT
<ul style="list-style-type: none"> • Pain • Red eye • Decreased vision • Ocular irritation • Light sensitivity 	<ul style="list-style-type: none"> • Mild to moderate infection: <ul style="list-style-type: none"> ◦ Intensive topical antibiotics ◦ Topical steroids when appropriate ◦ Cycloplegics if indicated ◦ Frequent follow-up (often daily) • Severe infection <ul style="list-style-type: none"> ◦ Hospitalization ◦ Intravenous antibiotic therapy ◦ Hourly topical fortified antibiotics ◦ Cycloplegics ◦ Topical or intravitreal steroids ◦ Vitrectomy in cases of worsening despite aggressive therapy

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