

INTRACORNEAL FOREIGN BODY

BY MAYA BITAR, MD; RICHARD DAVIS, MD; MATT GIEGENGACK, MD; LESLIE GARAY, MD; AND KARL G. STONECIPHER, MD

CASE PRESENTATION

A 38-year-old woman underwent uneventful LASIK. On postoperative day 1, her visual acuity measured 20/15 OU, and she was asked to return for routine follow-up in 2 weeks. The patient presented on day 14 with a complaint of a foreign body related to questionable trauma. She works with animals and said she felt like cat litter might have gotten in her left eye (Figure). At this point, the surgeon attempted to remove the intracorneal foreign body, which had completely penetrated the flap.

The patient's UCVA is 20/25, and she is asymptomatic except for mild foreign body irritation. The refraction is plano, and there is no anterior chamber reaction. How would you proceed?

—Case prepared by Karl G. Stonecipher, MD.

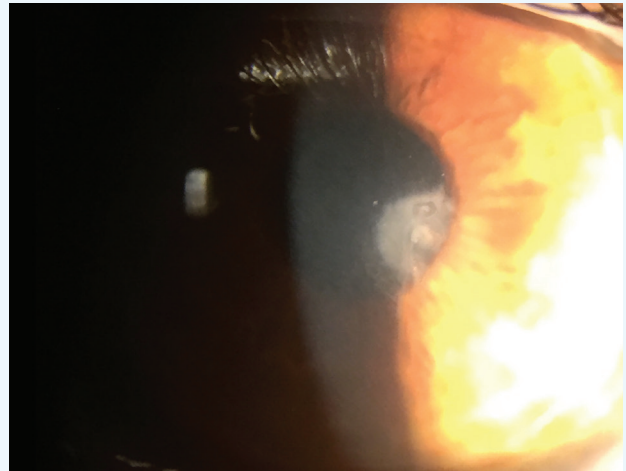


Figure. The original appearance of the intracorneal foreign body with surrounding inflammatory reaction.



MAYA BITAR, MD, AND RICHARD DAVIS, MD

The foreign body is paracentral and is surrounded by an infiltrate or inflammatory reaction that is affecting the patient's vision, because she sees 20/25 with a plano

refraction. Cat litter is usually organic material, so we would worry that the inflammation would worsen, causing melting or scarring of the flap. At 2 weeks postoperatively, it is still possible to lift the flap relatively safely. We would irrigate away any debris and foreign body to the extent possible and take cultures from the bed at the same time. We would prescribe a broad-spectrum antibiotic drop such as moxifloxacin every 2 hours first and a topical corticosteroid twice a day to prevent scarring. We would see her back the next day to check for worsening. If the preliminary cultures came back negative, we would increase dosing of the topical corticosteroid eye drop to four times a day for a few days and then taper it down to the regular post-LASIK regimen, depending on inflammation, haze, and culture results. We would closely

monitor the patient for worsening of the inflammation and for the development of an infection, especially fungal, or of epithelial ingrowth.



MATT GIEGENGACK, MD

First, I would remove the foreign body. Because the incident happened after the LASIK surgery, I would expect to be able to remove the majority of the foreign body without lifting the flap. Next, I would document the appearance of the surrounding edema, inflammation, and infiltrate photographically so that I could monitor any subtle changes. Next, I would obtain extensive culturing for bacteria, fungus, and *Acanthamoeba*. Initially, I would stop the topical corticosteroid, and I would treat the eye for 2 days with topical moxifloxacin administered every 2 hours, covering for a bacterial cause.

If the cultures were negative and the area looked no worse or better after 2 days, I would restart topical prednisolone acetate 1% to try to reduce the potential for scarring. I would see the patient the day after initiating the topical

corticosteroid to make sure the appearance of the cornea was not worsening, which could represent fungal growth. If improvement were noted and the patient's symptoms improved, I would continue the corticosteroid and decrease the moxifloxacin to four times per day. At that point, I would begin slowly tapering the corticosteroid and stop the topical antibiotic based on the eye's response. Of course, I would diligently monitor the cultures and provide appropriate treatment based on growth.



LESLIE GARAY, MD

Initially, I would remove the foreign body and debride the surrounding area, especially if the foreign body is already through the flap. I would have a low threshold for rinsing the flap if the pain or inflammation the patient was experiencing worsened, but considering her visual acuity, I would

initially watch the inflammatory response closely. Because the initial foreign body was cat litter, in addition to routine bacterial and fungal cultures, I would ask the lab to look for toxoplasmosis, campylobacter, and salmonella.

Toxoplasmosis is usually acquired through the ingestion of or contact with cat litter, so I would not recommend systemic prophylaxis. I would, however, add topical azithromycin to the regimen as prophylaxis in addition to tobramycin and moxifloxacin. The patient's vision is still good, so I do not think fortified antibiotics are indicated at this point. If the patient's vision or symptoms worsened, I would not hesitate to add fortified antibiotics to the regimen. Avoiding a contact lens would be important, because this was organic material.

I would be concerned about fungus. I would continue to watch the patient closely and would change the regimen based on cultures and the patient's response. I would continue the topical corticosteroids because of the location of the scar in the paracentral axis of vision.



WHAT I DID: KARL G. STONECIPHER, MD

Initially, I tried to remove the foreign body via an anterior approach but was only able to address 70% of the problem. At that point, I felt the etiology was probably bacterial or fungal or inflammation related to the cat litter. Because I could

not immediately obtain natamycin, I waited 1 day to see how the inflammation responded to the addition of gentamicin to the gatifloxacin, which the patient was already using, and I had her alternate those drops every hour while awake. I continued the topical corticosteroid at four times per day because of the foreign body's paracentral location.

On day 15, I received the natamycin drops. At that point, I had the patient return for a flap-lift debridement

and irrigation of the residual foreign body under the flap. During the procedure, I obtained cultures for bacteria, fungus, and *Acanthamoeba*. I then irrigated under the flap with standard gatifloxacin, gentamicin, and natamycin drops. I was worried about fungal elements, but nothing was seen with standard stains. Nevertheless, I continued the corticosteroid every 2 hours with the antibiotics alternating with the natamycin eye drops.

Cultures grew nothing over the course of time, and the patient maintained a UCVA of 20/25 with a plano refraction. I continued all of the drops for a total of 3 weeks and tapered the corticosteroid over 2 weeks. She remains asymptomatic with good vision. The scar has consolidated, and the patient is seeing well at 20/25. She does have symptoms related to its location, and I continue to monitor her diligently.

I think aggressive treatment with irrigation is what led to the successful outcome. Cultures are helpful, obviously, but not always revelatory, so the broad-spectrum treatment of potential pathogens is indicated. Whether or not to continue the corticosteroid was debatable, but in light of the foreign body's location, I elected to maintain treatment until some other diagnostic dictated stopping it. ■

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