partment of Pathology and Laboratory Medicine (Dr Yeaney) and Flaum Eye Institute (Dr Hindman), University of Rochester School of Medicine and Dentistry, Rochester, New York.

Correspondence: Dr Hindman, Flaum Eye Institute, 601 Elmwood Ave, Box 659, Rochester, NY 14642 (holly_hindman@urmc.rochester.edu).

Author Contributions: Dr Hindman had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Conflict of Interest Disclosures: None reported.

Funding/Support: This work was supported by grant K23EY019353 from the National Eye Institute, National Institutes of Health.

Additional Contributions: Flaum Eye Institute’s Diagnostic Imaging Service obtained the clinical images.


**Chromoblastomycosis of the Conjunctiva Mimicking Melanoma of the Ciliary Body**

Chromoblastomycosis is a chronic subcutaneous mycosis that typically involves the lower extremities. The vast majority of causative microorganisms have melanized cell walls (ie, are dematiaceous fungi) and belong to 4 genera of saprophytic fungi: *Phialophora, Fonsecaea, Rhinocladiella*, and *Cladophialophora*. Most human infections can be traced to traumatic implantation. We describe a unique case of conjunctival chromoblastomycosis that mimicked a uveal melanoma with scleral invasion.

Report of a Case. A 75-year-old white woman was referred for evaluation of a pigmented lesion of her right na-
A shave biopsy was performed in the operating room. Microscopic examination showed mild epithelial hyperplasia with focal keratinization and nongranulomatous chronic inflammation of the substantia propria. The pigmented tissue consisted of tangled fungal hyphae admixed with spherical structures (Medlar bodies), measuring between 4 and 15 μm in diameter (Figure 2). The mass of fungal elements was devoid of inflammation, and hyphae showed cross septa. The Medlar bodies stained with periodic acid–Schiff reaction and Gomori methenamine silver (Figure 2, inset). No budding yeasts were seen.

Cultures from the conjunctiva were unsuccessful before the patient started treatment with topical natamycin, 5%, suspension. The patient was intolerant to topical antifungal medications and was treated with oral ketoconazole, 200 mg daily.

**Comment.** The dematiaceous fungi that cause chromoblastomycosis are found worldwide, but most human infections occur in the tropics or subtropics. Organisms usually incite epithelial hyperplasia and chronic granulomatous inflammation. The chestnut-colored spherical structure known as a Medlar body (or sclerotic body) is not to be confused with conidia, or the asexual reproductive spores used to classify species under standardized growth conditions in the laboratory. Medlar bodies are poorly understood structures but are characteristic of the tissue phase of chromoblastomycosis.\(^1\)\(^4\) They likely represent an adaptive form of dematiaceous fungus capable of surviving prolonged periods in an inhospitable environment.\(^2\)\(^4\)

Although the particular fungus in this case could not be identified through microscopic examination of reproductive spores in culture, chronic mycosis of the conjunctiva of any type is exceptionally rare.\(^3\) Treatment is based on experience with cutaneous infection and consists of surgical excision and chemotherapy with a synthetic imidazole.\(^6\) Reports of late relapse with skin infection, however, are common. In the semitransparent conjunctiva, chronic infection from a dematiaceous fungus can resemble a melanocytic neoplasm and should be added to the list of pseudomelanomas of the ocular adnexa.

Anh Q. Bui, MD
Edgar M. Espana, MD
Curtis E. Margo, MD, MPH

**Author Affiliations:** Departments of Ophthalmology (Drs Bui, Espana, and Margo) and Pathology and Cell Biology (Drs Espana and Margo), Morsani College of Medicine, University of South Florida, Tampa.

**Correspondence:** Dr Margo, Department of Ophthalmology, Morsani College of Medicine, University of South Florida, 12901 Bruce B. Downs Blvd, MCD Box 21, Tampa, FL 33612 (cmargo@health.usf.edu).

**Conflict of Interest Disclosures:** None reported.
Evolving Fluoroquinolone Resistance Among Coagulase-Negative Staphylococcus Isolates Causing Endophthalmitis

Endophthalmitis is a serious, sight-threatening condition resulting in substantial morbidity. With the widespread use of fluoroquinolone antibiotic eyedrops as a prophylactic agent, there is concern regarding increased frequency of fluoroquinolone resistance. We report the evolution of fluoroquinolone resistance among coagulase-negative Staphylococcus endophthalmitis isolates at the Bascom Palmer Eye Institute.

Methods. The study was approved by the Institutional Review Board of the University of Miami School of Medicine Medical Sciences Subcommittee for the Protection of Human Subjects. This was a retrospective, noncomparative, consecutive case series. We reviewed the microbiological and medical records of all patients with culture-proven endophthalmitis (positive cultures from the vitreous cavity) caused by coagulase-negative Staphylococcus at the Bascom Palmer Eye Institute between January 1, 1990, and July 1, 2011. Susceptibility testing of the intraocular isolates was performed using an automated system—the VITEK automatic microbial system (Biomerieux, Inc) or the E test (AB Biodisk NA, Inc and Remel Products). Frozen isolates were reconstituted as needed to evaluate sensitivities of earlier cases to newer-generation fluoroquinolones.

Results. During the 21.5 years of the current study, 168 patients were identified as having culture-proven endophthalmitis caused by coagulase-negative Staphylococcus. The increasing resistance rates are shown in the Figure for 1990 to 1994 (n = 29), 1995 to 1999 (n = 23), 2000 to 2004 (n = 26), and 2005 to 2011 (n = 89). The respective resistances (in percentages) of the first 3 periods are the following: ciprofloxacin resistance, 10.3%, 17.4%, and 38.4%; levofloxacin resistance, 0%, 17.0%, and 38.4%; moxifloxacin resistance, 0%, 21.8%, and 26.9%; and gatifloxacin resistance, 0%, 21.8%, and 30.7%. The mean resistance rates for January 1, 2003, through July 1, 2011 (n = 89), were 60.5% for ciprofloxacin, 38.6% for levofloxacin, 57.8% for moxifloxacin, and 60.5% for gatifloxacin (Figure).

Comment. Despite the dual mechanisms of fluoroquinolones to avoid resistance to coagulase-negative Staphylococcus, the frequency of resistance to these organisms is increasing. Recent evidence shows that repeated exposure of ocular and nasopharyngeal flora to ophthalmic antibiotics, including fluoroquinolones, creates resistant strains. It has further been shown that resistant strains of coagulase-negative Staphylococcus may be associated with greater ocular inflammation, greater virulence, and increased ocular infection rates compared with susceptible strains.

Fourth-generation fluoroquinolones are significantly more expensive than generic traditional antibiotic eyedrops such as gentamicin sulfate and polymyxin B sulfate/trimethoprim, which have been shown to cover endophthalmitis isolates at least as well. Additional recent reports demonstrate that the fourth-generation fluoroquinolones achieve subtherapeutic levels in the aqueous humor and vitreous against the most frequently identified staphylococcal endophthalmitis isolates. Given the frequent and increasing resistance, subtherapeutic penetration, and higher cost compared with other antibiotic eyedrops, the widespread perioperative and periprocedural use of fourth-generation fluoroquinolone antibiotic eyedrops should be reevaluated.

Andrew M. Schimel, MD
Darlene Miller, DHSc
Harry W. Flynn Jr, MD

Author Affiliations: Department of Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, Miami, Florida. Dr Schimel is now also with the Center for Excellence in Eye Care, Miami. Correspondence: Dr Flynn, Department of Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, 900 NW 17th St, Miami, FL 33136 (hflynn@med.miami.edu).

Conflict of Interest Disclosures: None reported.