Chromoblastomycosis is a chronic subcutaneous mycosis that typically involves the lower extremities. The vast majority of causative microorganisms have melanized cell walls (i.e., are dematiaceous fungi) and belong to 4 genera of saprophytic fungi: Phialophora, Fonsecaea, Rhinocladiella, and Cladophialophora. Chromoblastomycosis often mimics a neoplastic process and is a diagnostic challenge for patients without a clear history of trauma. Diagnosis rests on a high clinical suspicion and the finding of characteristic mycelial elements under microscopy.

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

A 75-year-old white woman was referred for evaluation of a pigmented lesion of her right nasal conjunctiva. The lesion had been noted by her primary care physician and the patient had been evaluated by an ophthalmologist who was unable to establish a diagnosis. The lesion slowly increased in size over 6 months and grew in a linear fashion from the limbal region of the eye.

**Report of a Case.** A 75-year-old white woman was referred for evaluation of a pigmented lesion of her right na-

**Figure 2.** Histopathological analysis. A, Cytologic preparation from anterior chamber aspirates. Arrows indicate mononuclear epithelioid cells with abundant cytoplasm (Wright-Giemsa). B-D, Histopathological specimens from the retrocorneal membrane. B, Descemet membrane and fibrous, retrocorneal membrane (hematoxylin-eosin). C, Diffuse positive staining with smooth muscle actin. D, Diffuse positive staining with CK7.
The lesion had been present for 16 years, following a traumatic injury with a tree branch. The initial injury was minor and required no professional medical care. A pigmented lesion, however, developed at the site of injury and enlarged slowly over years. During the last several months, it began causing irritation and redness. When examined, best-corrected visual acuity in the affected eye was 20/25. The lesion was 2.5 mm from the limbus, just thicker than 1 mm, and 3.7 mm in its greatest diameter. Under slitlamp magnification, the surface resembled black cauliflower (Figure 1). The overlying epithelium was shaggy, and it pooled and retained fluorescein (Figure 1, inset). The remainder of findings from the eye examination, including dilated ophthalmoscopy, were unremarkable. Ultrasound biomicroscopy revealed no mass beneath the lesion. Although the history of trauma was reliable, the concern over an invasive melanoma persisted, so a biopsy was recommended with that prevailing clinical diagnosis. Metastatic cutaneous melanoma was possible, although there was no history of skin melanoma. Pigmented squamous cell carcinoma and primary conjunctiva melanoma were less likely because of the location of the mass beneath the epithelium and, in the case of squamous cell carcinoma, the patient’s fair complexion.

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 once 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.5 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.
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.1,2 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.3,4

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.3 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.5 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.

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Conflict of Interest Disclosures: None reported.


Evolving Fluoroquinolone Resistance Among Coagulase-Negative Staphylococcus Isolates Causing Endophthalmitis