eration cephalosporin such as cefuroxime, or the combination of high-dose ampicillin and chloramphenicol is recommended. MRSA should be considered in the differential diagnosis for adults with epiglottitis who fail to respond to conventional broad-spectrum antibiotics, especially those at high risk because of exposure to a health care facility, underlying disease, or occupation.

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References  

Colonic Polyps and Disseminated Infection Associated with Rhodococcus equi in a Patient with AIDS

Rhodococcus equi is a well-known pathogen in animals that has been reported to cause pneumonia and encephalitis in patients with AIDS [1]. We describe a case of rhodococcal colonic polyps in association with rhodococcal bacteremia, pneumonia, and encephalitis in a patient with AIDS.

In May 1996, _R. equi_ cavitary pneumonia was diagnosed in a 46-year-old homosexual man with AIDS. The organism obtained from both bronchoscopy washings and blood cultures was identified as _R. equi_ by use of conventional biochemical tests. It was susceptible to rifampin, vancomycin, erythromycin, and trimethoprim-sulfamethoxazole. The patient’s condition improved clinically after oral treatment with rifampin, trimethoprim-sulfamethoxazole, and clarithromycin, but he did not recover completely.

In October 1996 he was hospitalized to undergo lobectomy. During a preoperative evaluation, he was found to be anemic, and his stool was positive for occult blood. We performed a colonoscopy and found four polyps, 10–15 mm in size. There were two pedunculated polyps in the transverse colon and cecum and two sessile polyps in the distal ascending colon (figure 1). Microscopic examination revealed that all colonic lesions had similar pathology consisting of diffuse mucosal accumulation of macrophages with finely granular and foamy cytoplasm. There were also areas of neutrophilic and lymphocytic infiltration. Stains for bacteria revealed many intracellular gram-positive coccobacilli, which were also weakly acid fast. Electron microscopy showed numerous intracellular ovoid and bacillary bacteria with thick cell walls and multiple lipid vacuoles, consistent with the findings on published electron micrographs of _R. equi_[2]. Although no culture of the polyp biopsy specimens was done, the appearance of the bacilli on light and electron microscopy was identical to that of the _R. equi_ isolate cultured from the lung of our patient.

During the same hospital stay, we also noticed that the patient had some episodes of short-term memory loss, as well as personality changes. A brain MRI showed multiple ring-enhancing lesions with surrounding edema.

Treatment with clarithromycin, rifampin, and trimethoprim-sulfamethoxazole failed to improve his mental status, and the cerebral lesions increased in size and number, as determined on CT examinations. In February 1997, a stereotactic brain biopsy revealed cerebritis, inflammatory microangiopathy, and gram-positive coccobacilli. No _Toxoplasma_ organisms were identified.

The patient began an 8-month course of daily treatment with intravenous vancomycin and oral rifampin. This regimen has been shown to be quite effective in the treatment of experimental rhodo-

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**Figure 1.** One of four colonic polyps associated with disseminated _Rhodococcus equi_ infection identified by colonoscopy in a patient with AIDS.
Treatment of Thrush with Itraconazole Solution: Evidence for Topical Effect

Itraconazole is active against almost all Candida albicans isolates that are susceptible to fluconazole and against >60% of fluconazole-resistant C. albicans isolates [1–2]. The hepatic metabolism of itraconazole is accelerated by concurrent therapy with agents that increase hepatic microsomal enzyme activity. Unsuccessful itraconazole therapy has been documented for patients who have received concurrent rifampin [3]. Significantly reduced peak-serum concentrations and area under the concentration-time curve have been reported for patients receiving itraconazole and concurrent rifabutin therapy [4].

A new oral itraconazole formulation in cyclodextrin is now available. Itraconazole solution appears to be at least as effective as other formulations for treatment of thrush and esophagitis due to C. albicans in immunocompromised patients [5]. In addition, this oral solution offers a potential advantage over other formulations in that itraconazole is deposited topically at the site of mucosal infection. Although the accelerated hepatic metabolism of itraconazole due to concurrent rifampin or rifabutin therapy would negate the value of itraconazole for treatment of systemic mycoses, mucocutaneous infections may respond to a topical effect of itraconazole solution. To test this hypothesis, the following study was performed after approval by our local institutional review board and informed consent was obtained.

Ten episodes of thrush were treated with itraconazole solution (200 mg/20 mL) once daily in eight male patients with AIDS who were also receiving concurrent rifampin or rifabutin therapy. The patients were asked to swish the itraconazole solution in their mouths for at least 10 seconds before swallowing. Serum and salivary samples were obtained for measurement of itraconazole concentrations when the patients were evaluated for clinical response 1 week after treatment. Itraconazole concentrations were determined by use of a bioassay [6]. Two patients were studied on two occasions, separated by at least 2 weeks between treatment courses.

Cultures of plaque specimens from all patients yielded C. albicans. All but one case of thrush resolved completely 1 week after treatment. The other case, the only patient receiving concurrent rifampin and whose isolate was resistant to fluconazole, showed 85% resolution of oral lesions at 1 week. After continuation of treatment with itraconazole solution for an additional week, complete resolution of lesions was observed. Three patients without measurable itraconazole serum concentrations at any time point had mean salivary itraconazole concentrations at the following time points: 0 hours, 0.06 μg/mL (range, 0–0.25 μg/mL); 2 hours, 0.89 μg/mL (range, 0.25–2.1 μg/mL); and 4 hours, 0.69 μg/mL (range, 0.25–1.1 μg/mL); all three patients had salivary itraconazole concentrations of 0.25 μg/mL at 8 hours. Five patients had measurable serum concentrations of itraconazole, despite concurrent rifabutin therapy, at the following time points: 0 hours, mean, 0.88 μg/mL (range, 0–1.8 μg/mL); 2 hours, mean, 1.37 μg/mL (range, 0.25–2.6 μg/mL); 4 hours, mean, 1.35 μg/mL (range, 0.25–2.2 μg/mL); and 8 hours, mean, 1.30 μg/mL (range, 0.25–2.5 μg/mL). Each of these patients had measurable itraconazole salivary concentrations at the following time points: 0 hours, mean, 0.32 μg/mL (range, 0–0.8 μg/mL); 2 hours, mean, 3.34 μg/mL (range, 0.7–5.3 μg/mL); 4 hours, mean, 1.70 μg/mL (range, 0.53–3.6 μg/mL); and 8 hours, mean, 0.41 μg/mL (range, 0.25–0.93 μg/mL). During eight of the 10 treatment periods, the measured peak salivary itraconazole concentrations were higher than the peak serum concentrations. In all patients studied, salivary itraconazole concentrations persisted at ≥0.25 μg/mL for 8 hours after administration of the agent.

In summary, itraconazole therapy was effective for 10 cases of thrush among eight patients with AIDS who were receiving concurrent rifabutin or rifampin therapy. Although systemic absorption probably contributed to the response in those patients with...