JCM
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Answer to Photo Quiz: *Dysgonomonas capnocytophagoides*

(See page 1811 in this issue [doi:10.1128/JCM.00349-13] for photo quiz case presentation.)

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This isolate, which was nonmotile and catalase and oxidase negative, was identified by the Vitek 2 system (bioMérieux, Inc., Hazelwood, MO) as *Rhizobium radiobacter*, while RapID NF (Remel, Lenexa, KS) gave no identification. The isolate was submitted for identification by partial 16S rRNA gene sequencing as well as matrix-assisted laser desorption ionization–time of flight mass spectrometry (MALDI-TOF MS). Sequencing identified the isolate as *Dygonomonas capnocytophagoides*. Blood cultures remained positive for 13 days despite treatment with meropenem alone followed by dual therapy with piperacillin-tazobactam and levofloxacin. The MICs of ceftriaxone, erythromycin, ampicillin, clindamycin, and tetracycline for this organism were ≥256 μg/ml, 8 μg/ml, 32 μg/ml, 0.25 μg/ml, and 0.5 μg/ml, respectively. The addition of doxycycline based on these susceptibility results quickly sterilized the patient's bloodstream. Ultimately, the hepatic abscesses were excised *en bloc* on hospital day 48 with the explantation and reimplantation of the patient's second orthotopic liver. His postoperative course was uneventful, and he has since made a full recovery.

The genus *Dysgonomonas* is subdivided into three major species, *Dysgonomonas mossii*, *D. gadei*, and *D. capnocytophagoides* (formerly designated CDC group DF-3), with a fourth species "*Dysgonomonas hofstradii*," proposed (1–3). Colonies measure 1 to 2 mm in diameter after 24 h of growth, have a distinct strawberry-like odor, and do not spread or adhere. Microscopically, *Dysgonomonas* spp. appear as small, Gram-negative rods or cocci. All members are oxidase negative, do not reduce nitrate or produce H_2S, ferment glucose, lactose, and xylose, and produce alkaline phosphatase and β-galactosidase but not arginine dehydrolase. Although the species show few biochemical differences, the distinguishing features of *D. capnocytophagoides* include negative indole and catalase reactions (2, 3).

The pathogenic potential of this uncommon bacterium seems to be limited to immunocompromised individuals. In 1988, *D. capnocytophagoides* was reported to have caused diarrhea in an immunocompromised host and later bacteremia in two leukemic patients, one of whom had the strain isolated from stool (1). When *D. capnocytophagoides* causes clinical disease, a gastrointestinal source should be strongly considered because most strains have been isolated from stool, although the organism has also been isolated from urine and skin abscesses (1, 3). Another alarming feature of *Dysgonomonas* spp. is their well-established resistance to beta-lactams, macrolides, aminoglycosides, and quinolones (4), a susceptibility profile similar to that of our patient's organism.

Identification of this organism with conventional identification techniques can be difficult. MALDI-TOF MS misidentified the organism as *D. gadei*, an error previously documented in the medical literature because of gaps in the MALDI-TOF MS database. A negative catalase reaction in this situation would indicate that the correct identification is indeed *D. capnocytophagoides* (5). Though 16S rRNA gene sequencing correctly identified the pathogen as *D. capnocytophagoides*, this procedure is time-consuming and is also considerably more expensive to perform than MALDI-TOF MS. MALDI-TOF MS may replace such molecular techniques in identifying such rare pathogens as *D. capnocytophagoides* once the databases become more accurate and reliable (6).

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Editor: P. Bourbeau

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doi:10.1128/JCM.00385-13