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Pancreatic Abscess Associated with *Achromobacter* Group Vd Biovar 1

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A case of pancreatic abscess associated with *Achromobacter* biovar 1 in a 75-year-old man with multiple predisposing debilitating conditions is presented. The infection responded to antibiotic therapy, but the patient died from unrelated causes.

In recent years, glucose-nonfermenting, gram-negative rods have been increasingly implicated in human disease (8). The genus *Achromobacter* comprises gram-negative, oxidase-positive peritrichously flagellated rods which produce acid oxidatively from xylose and occasionally from other carbohydrates, but never from lactose (3, 7). *Achromobacter* organisms may consist of several ill-defined biovars. The following groups have been clearly differentiated: *Achromobacter xylosoxidans*, *Achromobacter* group Vd biovar 1, and *Achromobacter* group Vd biovar 2 (3, 7). A pathogenic role has been assigned to *A. xylosoxidans* (2, 4, 6), but we are not aware of any reports implicating group Vd organisms in human disease. This report describes a case of pancreatic abscess associated with *Achromobacter* group Vd biovar 1 infection in a patient with multiple predisposing conditions.

Case summary. A 75-year-old male was transferred to The Milton S. Hershey Medical Center in October 1979 with a diagnosed pancreatic mass and gastric outlet obstruction. He had recently undergone laparotomy for cholecystitis and reoperation 2 weeks postoperatively for a retained common bile duct stone. Postoperatively, protracted nausea and vomiting necessitated further studies, which revealed gastric outlet obstruction and a complex mass in the head of the pancreas. Past medical history was positive for chronic lung disease, hypertension, myocardial infarction, and stroke. Physical examination revealed a febrile, chronically ill patient with persistent hiccups. Chest auscultation yielded left-sided rhonchi and bilateral pleural friction rubs. A large fixed midline epigastric and right upper quadrant mass was present. Salient laboratory tests included the following: hematocrit, 29%; leukocyte count, 6,000/mm^3; hypokalemia; and hypoproteinemia.

Initial management included electrolyte replacement and parenteral hyperalimentation for 5 weeks, after which time the abdominal mass was reevaluated and was unchanged. A laparotomy was, therefore, performed, revealing dense adhesions and a vascular, fibrotic mass in the head of the pancreas and necrosis of the entire body and tail. External pancreatic drainage and side-to-side gastrojejunostomy were performed; histological examination of operative pancreas specimens revealed granulation tissue with histiocytes, plasma cells, fibroblasts, and foreign body giant cells in a fibrous and adipose tissue background, as well as fat necrosis. A Gram stain of purulent material aspirated from the body of the pancreas revealed scanty gram-negative rods and some pus cells; culture yielded pure, heavy growth of a gram-negative, oxidase-positive rod, subsequently identified by Gerald Gilardi as *Achromobacter* group Vd biovar 1, sensitive to nalidixic acid, gentamicin, polymyxin B, and cotrimoxazole and resistant to penicillin G, ampicillin, carbenicillin, erythromycin, clindamycin, cephalothin, cefamandole, cefoxitin, tetracycline, chloramphenicol, streptomycin, kanamycin, tobramycin, and amikacin (1). Cultures of blood and urine were sterile, and sputum cultures revealed normal flora. Intravenous cefazolin was given postoperatively and changed to gentamicin on postoperative day 4. A Gram stain of pancreatic drainage fluid on postoperative day 6 showed numerous pus cells and many gram-negative rods; culture yielded pure, heavy growth of an *Achromobacter* strain similar to that described above.

Postoperatively, the patient was critically ill and febrile and was returned to the operating room on postoperative day 10 for drainage of a tender left lower quandrant mass, which proved to be loculated ascites. A Gram stain of this fluid revealed no organisms, and culture was sterile. The patient's abdominal condition gradually improved, and fever resolved. A swab from the pancreatic drainage site 12 days after the second laparotomy revealed scanty gram-negative rods and no pus cells. Culture yielded mixed growth

of *Candida albicans*, *Corynebacterium* species, and *Serratia marcescens*. These organisms were thought to be colonizers rather than true pathogens, in light of the patient's clinical improvement.

At the family's request, the patient was transferred to his local community hospital, where protracted vomiting, nausea, and mental confusion developed. Radiological studies showed no obstruction, and the patient's wounds remained stable, with minimal purulent pancreatic drainage (no cultures were taken). At 10 days after transfer, there was evidence of aspiration, and the patient expired from progressive respiratory failure 2 days later. Necropsy was not carried out.

Discussion. *Achromobacter* Vd strains differ from *A. xylosoxidans* in that the former organisms uniformly reduce nitrate to gas, hydrolyze urea rapidly, deaminate phenylalanine, do not produce acylamidase, and do not grow on cetrimide (3). Two Vd biovars are recognized, based on oxidation of sucrose, mannitol, and maltose. Biovar 2 produces acid from all of these substrates, whereas biovar 1 does not (3).

Although *Achromobacter* Vd organisms have been isolated from blood, urine, wounds, stool, respiratory tract (7), and hospital water supplies (5), no definitive information regarding their pathogenicity is available yet (8). Our report is the first of which we are aware implicating these organisms in human infection. The natural habitat of *Achromobacter* organisms is unknown (4, 8). It seems possible that, in common with many other glucose-nonfermenting, gram-negative rods, the mode of transmission in hospitals may be by colonization of aqueous environments. In addition, the multiple systemic debilitating conditions present in this patient may have led to greater susceptibility to infection with an organism of otherwise low virulence.

The susceptibility spectrum of the current *Achromobacter* group Vd biovar 1 strain differs from that reported for most strains of *A. xylosoxidans* (8) in being resistant to carbenicillin and susceptible to gentamicin. No data on the antimicrobial susceptibility pattern of group Vd organisms are available at this time (8). This report stresses the necessity of identifying unusual glucose-nonfermenting, gram-negative rods isolated from clinical infections. Only in this way can the pathogenic role of such organisms be delineated and their antimicrobial susceptibility spectrum be established with a view to future rational chemotherapy.

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