Chryseomonas luteola Identified as the Source of Serious Infections in a Moroccan University Hospital

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Chryseomonas luteola has only rarely been reported as a human bacterial pathogen. It has been shown that this organism in particular affects patients with health or indwelling disorders. Most reported cases showed septicemia, meningitis, endocarditis, or peritonitis. Two C. luteola infections observed in Morocco are described in the present study.

CASE REPORTS

Case 1. The first patient was a newborn boy, a twin, showing a respiratory failure at birth. He needed ventilator support and was intubated. Three days later he developed fever, icterus, and a bombing fontanel and was further treated in an intensive care unit. A lumbar puncture was performed, and the cerebrospinal fluid contained 200 white blood cells per mm³. The levels of albumin, chlore, and glucose were 1.25, 1.23, and 0.23 g/liter, respectively. The scanner showed a cerebral edema. Although no bacteria were found by microscopic observation, the patient was treated with ceftriaxone (100 mg/kg of body weight/day) and gentamicin (3 mg/kg/day). Unfortunately, he died the first night after admission in the intensive care unit.

In the meantime, samples from the patient were plated and showed growth of yellow-pigmented colonies. The pure culture contained gram-negative, oxidase-negative, and catalase-positive rods and was identified as Chryseomonas luteola by the API-20NE test kit (bioMérieux, La Balme-Les-Grottes, France). Antimicrobial susceptibility by agar disk diffusion methods showed that the C. luteola culture was susceptible to imipenem, colistin, ofloxacin, ciprofloxacin, cefotaxime, ceftazidime, ceftriaxone, and doxycycline and was resistant to amoxicillin, cephalothin, and trimethoprim-sulfamethoxazole (Table 1).

After the treatment with ampicillin and gentamicin was changed to ceftriaxone treatment, the patient defervesced but remained icteric. The echocardiography was performed again and showed the presence of vegetation on the mitral prosthesis. The patient died 2 days later.

Discussion. C. luteola is a motile aerobic gram-negative rod with yellow-orange pigment. Yellow and smooth colonies are obtained after 48 h of incubation on heart infusion agar supplemented with 5% horse blood. C. luteola can be distinguished from most other motile yellow-pigmented nonfermenters by a negative oxidase reaction and from the enterobacteria by its strict aerobic growth (5). The normal habitat of C. luteola is unclear, but it is frequently found in water, soil, and other damp environments (5, 16). C. luteola was initially assigned to CDC group Ve-1 by Tatum et al. (as cited in references 7 and 14). Ve-1 is one of the biogroups of group Ve, a group of nonfermentative strains, named Chro-mobacterium typhflavum by Pickett and Pedersen (13). Strains of group Ve-1 were first classified as Pseudomonas luteola by Kodama et al. (9). Holmes et al. (8) reclassified the species in the genus Chryseomonas as C. luteola, because P. luteola was a senior subjective synonym of Chryseomonas polytricha. Due to the close phylogenetic relatedness between Chryseomonas and Pseudomonas, this bacterium was reassigned to the genus Pseudomonas as Pseudomonas luteola (1). Currently, some authors still call the organism Chryseomonas luteola while others refer to it as Pseudomonas luteola (1, 6, 11, 17).

Previous studies showed that C. luteola may cause septicemia, peritonitis, and endocarditis in patients with health disorders or with indwelling devices (12). Up to now, 14 cases of C. luteola infection have been reported (2, 3, 5, 15, 17). For seven patients the organism was isolated from blood. Infections previously described include primarily septicemia (2), meningitis (10), osteomyelitis, endocarditis (12), and peritonitis (3). Also, its ability to infect critically ill patients who have...
undergone surgical operations and/or had indwelling devices has been described (7). In other cases, the infection was associated with other factors, such as immunosuppressive therapy, chronic renal failure, and malignancy (14).

As far as we know, *C. luteola* infections in humans have never been reported in Morocco. In this work, we describe two cases in a Moroccan university hospital. The two cases reported had predisposing or associated factors: the first patient was a newborn in a transient immunosuppressive state, and the second had a mitral prosthesis.

Considering both cases, we noticed that the incubation period of the infection was different and varied from 1 day for the first case to 1 month for the second. In a previous report, a case of cerebral tumor was infected 3 months after a surgical operation (10). Another case was reported as non-Hodgkin's lymphoma. The patient underwent surgical operations and/or had indwelling devices (14).

Because of the dramatic outcome of both described human infections, addition of this bacterium to the expanding list of nosocomial pathogens (7) may warrant consideration.

### Description

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)/gender</td>
<td>0/M(^a)</td>
<td>13/M</td>
</tr>
<tr>
<td>Department</td>
<td>Intensive care unit</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>Infectious disease</td>
<td>Meningitis</td>
<td>Endocarditis</td>
</tr>
<tr>
<td>Underlying disease</td>
<td>None</td>
<td>Rheumatic fever</td>
</tr>
<tr>
<td>Prosthetic material</td>
<td>None</td>
<td>Mitral valve</td>
</tr>
<tr>
<td>Source of culture</td>
<td>Cerebrospinal fluid</td>
<td>Blood</td>
</tr>
<tr>
<td>Polymicrobial infection</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Susceptible antibiotic</td>
<td>IPM, COL, OFX, CIP, AMK, NET, DOX</td>
<td>IPM, COL, OFX, CIP, CTX, CRO, CAZ</td>
</tr>
<tr>
<td>Resistant</td>
<td>AMX, CEF, CAZ, CTX, CRO, GEN, SXT</td>
<td>AMX, CEF, SXT</td>
</tr>
</tbody>
</table>

\(^a\) Drug abbreviations are as follows: IPM, imipenem; COL, colistin; OFX, ofloxacin; CIP, ciprofloxacin; AMK, amikacin; NET, netilmicin; DOX, doxycyclin; CTX, cefotaxime; CRO, ceftriaxone; CAZ, ceftazidime; AMX, amoxicillin; CEF, cephalothin; SXT, trimethoprim-sulfamethoxazole.

\(^b\) M, male.

### REFERENCES


