should be performed whenever resistance is suspected clinically or epidemiologically.

**Ruth Orni-Wasserlauf,1 Elena Izkhakov,1 Yardena Siegman-Igra,1 Edna Bash,1 Itzhack Polacheck,1 and Michael Giladi1**

1Infectious Disease Unit and 2Microbiology Laboratory, Tel Aviv Sourasky Medical Center, Tel Aviv University, Tel Aviv, and 3Department of Clinical Microbiology and Infectious Diseases, Hebrew University, Hadassah Medical Center, Jerusalem, Israel

References


**Brucella canis**

Endocarditis: Case Report

Brucella endocarditis, though uncommon, is found in almost 80% of fatal cases of systemic brucellosis at autopsy. We are unaware of any report in the English literature citing *Brucella canis* as a pathogen for this entity. A presumptive case of *B. canis* endocarditis, diagnosed by serology, is described.

A 49-year-old man was admitted to the hospital because of weight loss, heart murmur, and fever (temperature, 38°C), 3 months after returning from a trip to Kuwait. His history included Reiter’s syndrome, penicillin allergy, and no specific animal exposure. Echocardiography showed vegetations on the aortic valve and aortic insufficiency.

Two blood cultures were performed. Therapy with vancomycin and gentamicin was initiated. After heart failure occurred, transosophageal echocardiography showed a thickened aortic valve, vegetations, and severe aortic insufficiency. On day 10, he underwent aortic valve replacement.

Vancomycin and gentamicin were withdrawn when blood cultures were negative. The patient was discharged on hospital day 23, at which time he was being treated with oral ciprofloxacin (500 mg twice a day) and iv ceftriaxone (2 g every day). He had been afebrile since day 13.

The final pathology report showed fragments of aortic valve with bacterial endocarditis vegetations, in addition to the presence of microabscesses. The infectious agent was not identified. All 5 blood cultures were negative at 28 days.

The serology, performed at the Centers for Disease Control and Prevention (Atlanta), showed antibody to *Brucella* species (table 1), later identified as *B. canis*. The antibiotic therapy was changed to a regimen of oral ofloxacin (200 mg twice a day), rifampin (300 mg 3 times a day), and doxycline (100 mg twice a day).

Table 1. Convalescent serological findings in a case of *Brucella canis* endocarditis.

<table>
<thead>
<tr>
<th>Date</th>
<th><em>B. canis</em> antibody titer</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1992</td>
<td>1: 2560</td>
</tr>
<tr>
<td>November 1994</td>
<td>1: 160</td>
</tr>
<tr>
<td>June 1996</td>
<td>1: 80</td>
</tr>
</tbody>
</table>

Brucellosis, though common worldwide, predominates in the Mediterranean and Middle East regions [1–3]. *Brucella* species frequently associated with human brucellosis are *Brucella melitensis*, *Brucella abortus*, and *Brucella suis*; *B. canis* is a rare cause [1–6]. Brucella endocarditis, despite its high mortality rate, has a low occurrence rate in cases of brucellosis (<2%) [1, 2]. Heart failure is the leading reason for death [1, 2]. The best outcome is associated with a combined medical and surgical approach [1, 2].

The clinical presentation, the operative findings of fibrous vegetations within the cordal mechanism of the mitral valve and subaortic septum, and the pathology report are all supportive data for the diagnosis of endocarditis. The serology showed *B. canis* as the probable etiologic agent in this case of endocarditis. Valvular immunofluorescent studies have been used diagnostically in cases of culture-negative endocarditis.
such as Q fever. However, if serology is possible, as in our case, it remains the most useful means of diagnosis [7].

The most common mode of transmission for *B. canis* is through contact with infected dogs or their secretions [3, 4] or through direct laboratory exposure to the pathogen [3]. As with our patient, the pathogenicity of *B. canis* from an inapparent source has been reported elsewhere [3].

Classically, brucellosis is treated with a combination of either doxycycline and streptomycin or doxycycline and rifampin for a period of 4–6 weeks [1, 2, 5]. Longer regimens have been employed in combination with surgery if endocarditis is present [1, 2]. There is no consensus on the optimal duration. Recently, fluoroquinolones have also been used to treat brucellosis [6]. Treatment of *B. canis* brucellosis is the same as that against other *Brucella* species [1, 2, 4].

We chose the combination of doxycycline, rifampin, and ofloxacin, which has not been previously described in the literature. Our patient received this therapy for 3 years. Serology was followed as a treatment-response guideline. Further cases and studies are needed to establish the optimal management for this entity. After 6 years of follow-up, our patient remains well.

**Primary Cutaneous Aspergillus nidulans Infection Associated with a Hickman Catheter in a Patient with Neutropenia**

Primary cutaneous aspergillosis is a rare but increasingly encountered infection among immunocompromised patients, most often associated with occlusive dressings and intravenous catheters [1, 2]. We report an unusual case of primary cutaneous infection due to *Aspergillus nidulans*.

A 56-year-old woman was admitted to the hospital for management of acute myelogenous leukemia. On hospital day 17, a tunneled, double-lumen Hickman catheter was placed in her right internal jugular vein without complication. The following day, induction chemotherapy was initiated with cytosine arabinoside, daunorubicin, and etoposide. On hospital day 21, the patient developed fever, and broad-spectrum antibacterial therapy was begun. Cultures of blood, urine, and upper respiratory tract samples were negative.

On day 22, a site of previous tape trauma near the Hickman tunnel became erythematous and painful. Her peripheral WBC count was 600 cells/mm$^3$, with a polymorphonuclear cell count of 200 cells/mm$^3$. Over 3 weeks, the lesion progressed to an ulcerated eschar (figure 1A). Cultures of the wound site collected on hospital days 35, 37, 44, and 49 yielded *A. nidulans*, and excisional biopsy of the eschar performed on day 52 revealed abundant, invasive hyphal forms (figure 1B). Speciation was based on colony morphology, conidiophore structure and pigment, the presence of huÈlle cells, and the presence of cleistothecia. No other pathogenic bacteria or fungi were recovered.

Amphotericin B was administered at a dose 1 mg/kg/day (total dose, 3.4 g), and the catheter was removed on hospital day 55. The skin lesion improved markedly as neutropenia resolved. One month later, residual scar tissue at the wound site was excised in preparation for allogeneic bone marrow transplantation. Pathological examination of the excised tissue did not reveal fungal elements. The patient’s course following bone marrow transplantation was complicated by graft-versus-host disease and respiratory, renal, and hepatic failure. She died 72 days after transplantation. Recurrent Aspergillus infection was not documented clinically, and autopsy was not obtained.

*A. nidulans* is an extremely unusual cause of primary cutaneous aspergillosis. Walmsley et al. [2], in a review of 70 cases of primary cutaneous aspergillosis, identified only 1 case of cutaneous *A. nidulans* associated with an arm board in an 18-year-old patient with acute myelogenous leukemia and diabetes. At our facility, *A. nidulans* was recovered from only one other oncology patient in the past 5 years. In this case, the isolate from a respiratory specimen was not clinically significant. The clinical features of our patient’s presentation were indistinguishable from primary cutaneous aspergillosis caused by more typical *Aspergillus* species (e.g., *Aspergillus flavus*) [1].

Interestingly, patients with chronic granulomatous disease

Wang Ying, Minh Q. Nguyen, and Jeffrey A. Jahre

St. Lukes Hospital, Bethlehem, Pennsylvania

References