Sepsis puerperalis caused by a genotypically proven cat-derived \textit{Pasteurella multocida} strain

A. Voss\textsuperscript{1,*}, Y.H.C.M. van Zwam\textsuperscript{2}, J.F.G.M. Meis\textsuperscript{3}, W. Melchers\textsuperscript{3}, E.A.P. Steegers\textsuperscript{2}

\textsuperscript{1}Department of Medical Microbiology, University Hospital, P.O. Box 9101 - 440 MMB, 6500 HB Nijmegen, Netherlands
\textsuperscript{2}Department of Obstetrics and Gynaecology, University Hospital, Nijmegen, Netherlands

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Abstract

We report a disseminated intrauterine \textit{Pasteurella multocida} infection in a puerperal woman who could not remember any traumatic exposure to her cat. An oral swab taken from the cat, just 2 days after the patient's admission, grew \textit{Pasteurella multocida}, with an PCR-fingerprinting pattern identical to the patient's isolate. Hand-washing after every contact with cats and dogs and if feasible separation of in-house pets from mother and infant should be applied to prevent this uncommon but serious occurrence of post-partum infections. To our knowledge this is the first case of \textit{Pasteurella multocida} 'child-bed fever', with a genotypically identical strain isolated from the in-house cat. © 1998 Elsevier Science Ireland Ltd.

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1. Introduction

\textit{Pasteurella multocida} is a gram-negative coccobacillary bacterium which can cause severe human infection mostly as a consequence of animal-bite wounds. We report a disseminated intrauterine \textit{Pasteurella multocida} infection in a puerperal woman, who experienced no traumatic animal exposure.

2. Case report

A previously healthy 31-year-old woman, was admitted to our intensive care unit with the working diagnosis of 'septic shock' 10 days after giving uncomplicated vaginal birth during the 39th gestational week to a healthy baby in her home environment. After an uncomplicated first puerperal week she developed low grade fever and abdominal pain.

On admission the woman had a temperature reaching 40.5°C, a blood pressure of 100 over 60 mm Hg, a heart rate of 92/min, and a white blood cell count of 21.3 mm\(^3\), with 91% segmented neutrophils, 2% lymphocytes, and 7% monocytes. Hemoglobin was 8.6 mmol/l and platelet count 218/mm\(^3\). At gynecological examination, pus was noticed coming from the cervix. On palpation the uterus was weak, enlarged and painful. Cultures of blood, urine, and cervical pus were obtained and intravenous antibiotic therapy was started with gentamicin, metronidazole and cefuroxime. Suction curettage was performed 6 h later. There were no signs of placental rests.

Gram stain of the pus showed gram-negative coccobacillary bacteria. On the following day pus and blood cultures grew aerobic, oxidase-positive bacteria, which were later identified by API-NE (55: bioMérieux) as \textit{Pasteurella multocida}. The organism was in vitro susceptible to amoxicillin–clavulanic acid. The antibiotic regimen was changed accordingly. The patient became progressively stable and was afebrile 48 h after admission. She was discharged in excellent condition after completing 7 days
of intravenous amoxicillin-clavulanic acid. No clinical signs of infection were seen in the newborn baby.

3. Discussion

As a human pathogen *Pasteurella multocida* mainly causes localized wound infections with or without cellulitis after dog or cat bites. Invasive infections caused by this microorganism are rare, but have been described, including in patients with no known traumatic animal exposure (5–15%) [1]. Of the 958 cases reported to the French National Centre for Pasteurella Infections between 1985 and 1991, 66% had cutaneous infections, 19% lung infections and 11% bacteremia [2]. Infections of the cardiovascular system, such as endocarditis, are even rarer [3]. The exact route of transmission in cases without bites or scratches remains unclear, but pet licks are assumed to be involved, since *Pasteurella* is present in the oral flora in more than 50% of cats and dogs [4]. Furthermore, respiratory transmission from animal to humans was postulated as the cause of respiratory infections in immunocompromised patients with preexisting chronic respiratory disease [5].

In a review of 136 cases of *Pasteurella multocida* unrelated to animal bite, eight cases of *Pasteurella multocida* infections of the female genital tract were presented [5]. In five of these patients cervical or vaginal discharge was present. Recently, two other cases of obstetric and gynaecological sepsis were reported [6]. These and the older cases indicate that *Pasteurella multocida* may occasionally colonize the female lower genital tract and may cause serious gynaecologic or peripartal infections, as well as meningitis in the newborns [7,8]. Anderson et al. [9] lately reported a fatal case of congenital pneumonia caused by *Pasteurella multocida*, where the pathogen was grown in culture from the infant, amniotic fluid, and the family’s house cat.

The patient described herein accommodated a cat in her home environment. She could not remember any traumatic exposure to her cat, and had actually tried to prevent any exposure to the cat. Still, an oral swab taken from the cat 2 days after the patient’s admission, grew *Pasteurella multocida*, with an antibiogram and API bioprofile identical to the patient’s isolate. The genotypical identity of the isolates from patient and cat were proven by PCR-fingerprinting (Fig. 1). Colonization of the vagina and subsequent uterine infection probably occurred after inoculation from fingers contaminated with animal saliva. Hand-washing after contact with cats and dogs and separation of in-house pets from mother and infant may be able to prevent this uncommon but serious occurrence of postpartum infection. To our knowledge this is the first case of *Pasteurella multocida* ‘child-bed fever’, with a genotypically identical strain isolated from the in-house cat.

References


