

Gemella hemolysans endocarditis and septicemia: case report and literature review

Antonio Mastroianni,¹ Sonia Greco,¹ Valeria Vangeli,¹ Maria Vittoria Mauro,² Francesca Greco,² Filippo Urso,³ Roberto Manfredi⁴

¹Infectious and Tropical Diseases Unit, Annunziata Hospital, Cosenza; ²Microbiology Unit, Annunziata Hospital, Cosenza; ³Pharmacy Hospital, Annunziata Hospital, Cosenza; ⁴Infectious Diseases, Alma Mater Studiorum University of Bologna, Bologna, Italy

Abstract

A suggestive report of *Gemella hemolysans* endocarditis and sepsis is described and commented on the ground of an updated literature review.

Correspondence: Roberto Manfredi, Infectious Diseases, Alma Mater Studiorum University of Bologna, S. Orsola Teaching Hospital, via Massarenti 11, I-40138 Bologna, Italy.
Phone: +39 051 2143618. Fax: +39 051 343500.
E-mail: roberto.manfredi@unibo.it

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Introduction

Like *Gemella morbillorum* [1-4], *G. hemolysans* is a facultative catalase-negative coccoid anaerobe Gram-positive organism inhabiting human upper-lower digestive tracts as a part of normal microbiota [5], identified since the year 1938 [3,4]. Although being intrinsically poorly virulent, it may cause severe disease, especially in the immunocompromised host, but extremely severe disease pictures like brain and liver abscess [6,7], and spondylodiscitis have been reported in otherwise healthy subjects [5,7], and even in the second life decade [8]. This unpredictable behavior may be due to a variable expression of virulence factors which deserve further investigation [9-11].

Case Report

A 60-years-old female with arterial blood hypertension was hospitalized due to persisting fever and a strong clinical suspicion of infectious endocarditis based on Duke criteria, multiple, repeated blood cultures positive for *G. hemolytica*, and a heart ultrasonography showing a severe mitral insufficiency associated with a myxomatous prolapse of the valve. The isolated bacterial strain proved phenotypically susceptible to all tested antimicrobial compounds. A 4-week i.v. antibiotic therapy including full dose ampicillin-gentamycin led to a significant clinical stabilization, with disappearance of fever and normalization of both serum procalcitonin-C-reactive protein levels, therefore allowing the switch to an oral co-amoxiclav therapy. After the due brain computed tomography (CT) scan, heart CT scan, and neurological-ophtalmological-ENT-dentistry consultations, our patient was referred to our Heart Surgery Department for the interventional approach.

Discussion

Single case reports of *G. hemolysans* endocarditis have been reported [1,2,6-8,10,12-37], especially in the elderly [1,13,15,21,24,26,38]. Prolonged fever after a dental procedure may be the sole clue [15,18]. Prior prosthetic devices may be of concern [16,23,26]. Febrile neutropenia may concur [18]. Infrequently, the clinical conditions may be so severe to require extracorporeal membrane oxygenation [9]. *G. hemolytica* endocarditis was the presenting picture of a newly diagnosed multiple

myeloma [22]. Other cases occurred in subjects suffering from hemochromatosis [28], systemic lupus erythematosus [32], and colonic cancer [37-39]. Implanted heart devices may represent a risk factor [22,28,34], and total artificial heart was employed as a bridge to heart transplantation in a case [31]. A perivalvular abscess may complicate *G.hemolysans* endocarditis [36]. Post-infectious glomerulonephritis was recorded as a sequela of *G.hemolysans* endocarditis [32]. Isolated bacteremia without endocarditis and without an entry site may occur in the elderly [39,40]. *G.hemolysans* also infects orthopedic devices [27], whereas also meningitis may be due to this rare pathogen [42]. Gut colonization and intestinal disorders may prompt an invasive *G.hemolysans* disease [6, 37]. Molecular biology techniques add significantly to a rapid identification and characterization [2,9,41], since Gram stain may result misleading [34]. Of minor concern its antibiotic resistance rate, which is usually low, thus allowing a combined beta-lactam-aminoglycoside treatment [23], like in our patient, while serum anti-streptolysin –O titre may return useful in the diagnostic workup [26]. An antibiotic prophylaxis is due in individuals at risk for dental interventions [7,18].

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