Septic Shock in a Patient With a Probable Rhino-Pharyngeal Cancer Abscess Due to Gemella Species

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Abstract

A case of septic shock due to Gemella spp in a patient with a probable rhino-pharyngeal cancer-abscess is described. Gemellae have been associated to severe infections such as endocarditis and meningitis but septic shock has been usually considered a rare finding. Well-known risk factors for Gemellae bacteremia are neutropenia, antibiotic prophylaxis and proton pumps inhibitors, but reports in patients with solid cancers are increasing and the presence of a damaged oral mucosa could help their dissemination. The hypothesis that Gemellae may be encountered as opportunistic pathogens in immunocompromised patients and a preventive approach to these infections are suggested.

Keywords: Gemella; Septic shock; Rhino-pharyngeal cancer

Introduction

Gemellae are catalase-negative and anaerobic to aerotolerant Gram positive cocci and may be found as part of the normal oropharyngeal microflora in humans. There are four species of Gemellae: Gemella haemolysans, Gemella mobiliorum, Gemella sanguinis and Gemella bergeriae. These bacteria have little growth in blood agar and need 48 hours to be visible. Colonies are small and grayish and they may exhibit alpha-hemolysis on blood agar thus leading to initial presumptive identification as a Streptococcus viridans [1].

A positive L-pyrrolidonyl-\,B-naphthylamide hydrolysis test can rapidly distinguish the isolate from a Streptococcus viridans. Other microbiological characteristics include susceptibility to vancomycin and negative reactions to oxidase and catalase.

In the last years, Gemellae emerged as a cause of sporadic severe infections such as endocarditis, liver abscess, meningitis, cerebral abscesses, mediastinitis, and pericarditis [2-7]. In few cases these infections were associated with onco-hematologic diseases such as osteosarcoma, oral Burkitt’s lymphoma or intestinal adenocarcinoma and Gemellae’s bacteremia have been suggested as a marker of suspicion of intestinal malignancy [8-10]. To our knowledge, 5 reports of septic shock caused by Gemella spp. have been published so far: 2 cases in Italian adults with AIDS [11], 2 cases in immunocompromised pediatric patients [12] and one case in an immunocompetent American adult patient with a retropharyngeal abscess [13].

Case Report

A 41-year-old man was admitted to the emergency department in a state of coma (Glasgow Coma Scale 5) with no neck stiffness, severe hypotension (systolic blood pressure 70 mmHg), high grade fever (39.5 °C), anuria, leukocytosis with neutrophilia (total white blood cells: 13100/μL), high C-reactive protein (22.1 mg/dl) and procalcitonin (147.64 ng/ml). The patient had undergone a recent etoposide-based salvage chemotherapy for a progressive undifferentiated neuroendocrine rhino-pharyngeal cancer, with local invasion (left para-pharyngeal space, peri and sub-mastoideal space, maxillary sinuses, clivus) and laterocervical and mediastinal lymph node involvement as well as pulmonary and hepatic metastasis. His cancer was first diagnosed in 2002 and relapsed in March 2010.

Chest radiography was negative and, due to the suspicion of a central nervous system infection, a lumbar puncture was performed. The analysis of the cerebrospinal fluid showed normal values for white blood cells, glycorrachia and proteinorrachia and the direct Gram stain and culture were negative. The patient was hospitalized in the infectious...
in an American cancer center and showed that 13% among all blood streptococcal isolates were Gemella morbillorum. In a multivariated analysis the authors identified the use of TMP-SMZ or fluoroquinolones prophylaxis, treatment with antiacids or H2 antagonists and profound neutropenia as risk factors for developing a viridans streptococcal bacteremia but did not identify solid cancers [14].

Vancomycin should have guaranteed in vitro activity as no resistance to glycopeptides has been reported so far [15] and the exitus depended on the severe multi-organ failure already ongoing at admission.

As implementing standard oral care with an antibiotic paste was found to be effective in reducing alpha hemolytic streptococcal sepsis in immunocompromised children [16] we suggest that this standard of care could be useful in immunocompromised adults and that this bacteria may be considered as an opportunistic pathogen and more attention should be paid to prevent his spread in high risk patients.

Acknowledgment

The authors are grateful to Dr McDermott for her precious help in revising the article.

Conflict of Interest

The authors declare that no potential conflicts of interest are disclosed.

References


