Case Report

Staphylococcus cohnii septicaemia in a patient with colon cancer

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Received 19 June 2002
Accepted 14 September 2002

A coagulase-negative staphylococcal strain was isolated from peripheral blood and central venous catheter blood of a febrile patient with cancer. This isolate, initially classified by a commercial test as *Staphylococcus kloosii*, was definitively assigned to *Staphylococcus cohnii* by physiological and molecular tests. The strain lacked virulence factors, such as biofilm production and haemagglutination, and was sensitive to the antibiotics tested. The data suggest that rare micro-organisms with low pathogenic potential can cause severe illness in cancer patients; reference identification is required, however, to describe correctly the epidemiological characteristics and virulence factors of these clinical isolates.

Introduction

Although coagulase-negative staphylococcal species are frequently isolated from blood cultures, *Staphylococcus cohnii* is rarely responsible for human systemic infections (Fernandes *et al.*, 1996; Mastroianni *et al.*, 1996; Jarlov *et al.*, 1996). We report a case of sepsis in a colon cancer patient, with a central venous catheter (CVC), caused by *S. cohnii*. Two virulence markers (Mack, 1999) and the antibiotic susceptibility profile of the strain were also studied.

Case report

A 57-year-old woman with cancer of the colon, which was surgically resected in 1996, was repeatedly readmitted to our Institute for recidivation of the colon cancer and hepatic and pulmonary metastases. In May 2001, a CVC was inserted to start a second-line chemotherapy. In December 2001, 2 days before admission for a chemotherapy cycle, she became febrile, with a temperature of $> 38^{\circ}\text{C}$. No obvious clinical or radiological evidence of infection was found. All haematological and biochemical laboratory investigations were normal, except for an elevated erythrocyte sedimentation rate of 96 mm h^{-1} . The patient was started on intravenous ceftazidime (2 g every 8 h), after a series of blood had been taken for culture and susceptibility tests. Two and four blood culture sets, obtained from the CVC and peripheral veins, respectively, became positive in the BACTEC 9120 (Becton Dickinson). A haemolytic, catalase-positive, Gram-positive coccus grew on Columbia agar plus 5 % sheep blood (Kima), and was identified by the use of the ID32 Staph ATB system (bioMérieux) as *Staphylococcus kloosii*. Susceptibility of the

isolate was determined with the Vitek system (bioMérieux) and it was susceptible to oxacillin, cephalothin, clindamycin, ciprofloxacin, gentamicin, trimethoprim-sulfamethoxazole, teicoplanin and vancomycin, as well as to ceftazidime, the antibiotic that the patient was on. The isolate was negative for both biofilm production and haemagglutination. The patient responded to the antibiotic therapy and was discharged. Subsequent follow-up at the outpatient clinic has, so far, been uneventful.

Since commercial kits and diagnostic procedures commonly used in the clinical microbiology laboratory may not classify coagulase-negative species correctly (Rhoden & Miller, 1995), the strain was sent to the Deutsche Sammlung von Mikroorganismen und Zellkulturen (DSMZ), Braunschweig, Germany, for confirmation. The DSMZ confirmed the results of the biochemical reactions, but reclassified the strain as *S. cohnii* on the basis of fatty acid content and 16S rDNA sequence.

Observations

Apart from the fact that our patient was infected by *S. cohnii*, a micro-organism very rarely responsible for severe infections in humans, it is noteworthy that a molecular test may be required to identify coagulase-negative staphylococci isolated from similar cases to the species level for epidemiological purposes and to study the expression of virulence factors (Varaldo & Biavasco, 1997). Reported cases of severe infections in humans caused by *S. cohnii*, and other rare, related species, are on the increase, and we recommend characterization of coagulase-negative staphylococci isolated from compromised patients for epidemiological reasons.

Abbreviation: CVC, central venous catheter.

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