IDCases xxx (2019) xxx–xxx

Contents lists available at ScienceDirect

IDCases

journal homepage: www.elsevier.com/locate/idcr

Case illustrated

An asplenic with life-threatening *Capnocytophaga canimorsus* sepsis

Ralph Wendt[a], Christian Schauff[a], Christoph Lübbert[a,b,c,*]

[a] Department of Infectious Diseases, Tropical Medicine, Nephrology and Rheumatology, St. Georg Hospital, Leipzig, Germany
[b] Division of Infectious Diseases and Tropical Medicine, Leipzig University Hospital, Leipzig, Germany
[c] Interdisciplinary Center for Infectious Diseases, Leipzig University Hospital, Leipzig, Germany

ARTICLE INFO

Article history:
Received 15 May 2020
Received in revised form 15 May 2020
Accepted 15 May 2020

Keywords:
SARS-CoV-2
COVID-19
Pandemic
Capnocytophaga canimorsus
Sepsis

ABSTRACT

We report on a 33-year old Polish truck driver who was admitted as a COVID-19 suspicion case to our hospital after a short stay in northern Italy and was eventually diagnosed with fulminant *Capnocytophaga canimorsus* sepsis. In retrospect, the patient always had his dog with him in the truck cab and was regularly licked in the face. Following adequate therapy, the patient recovered completely after 8 weeks and was discharged from the hospital in good general condition.

Case presentation

A 33-year-old Polish truck driver who was passing through Leipzig, Germany, coming from Lombardy, northern Italy, a region where the first major SARS-CoV-2 outbreak occurred in Europe at that time [1], was found unwell at a local highway service area on February 29, 2020. The patient was immediately brought to our hospital as a suspect coronavirus disease 2019 (COVID-19) case. On emergency admission, he was an extremely ill patient (heart rate: 130 bpm, BP: 70/40 mmHg, temperature: 39 °C, respiratory rate: 32 breaths/min). Besides tachypnea, the patient had no objective respiratory symptoms, but severe abdominal pain. CT scans showed small liquid streaks around the pancreas and the right kidney. There were no signs of pneumonitis, as well as no spleen. Lab values revealed leukopenia, elevated procalcitonin (160,8 µg/L), and C-reactive protein (125,4 mg/L), as well as severe lactate acidosis. We suspected an overwhelming post-splenectomy infection and started treatment with piperacillin/tazobactam (4.5 g QID), aggressive volume therapy, and catecholamines. Clinically, a rapidly developing sepsis-induced purpura fulminans (Fig. 1A and B) was observed. After almost 60 h of incubation, blood cultures revealed *Capnocytophaga canimorsus* bacteremia (Fig. 1C). In retrospect, the patient always had his dog with him in the truck cab and was regularly licked in the face. The patient recovered completely after 8 weeks and was discharged from the hospital in good general condition.

Capnocytophaga canimorsus (Latin = dog bite) is a Gram-negative, rod-shaped bacterium (Fig. 1D) with commensal occurrence in the normal gingival flora of canine and feline species. Transmission to humans may occur through bites, licks or even close proximity with animals [2]. In case of invasive disease, *Capnocytophaga* can reproduce largely undetected due to resistance to macrophages and other immune escape phenomena, particularly post-splenectomy, which contributes to its high pathogenicity [3,4].

* Corresponding author at: Division of Infectious Diseases and Tropical Medicine, Leipzig University Hospital, Liebigstr. 20, D-04103, Leipzig, Germany.
E-mail address: christoph.luebbert@medizin.uni-leipzig.de (C. Lübbert).

https://doi.org/10.1016/j.idcr.2020.e00828

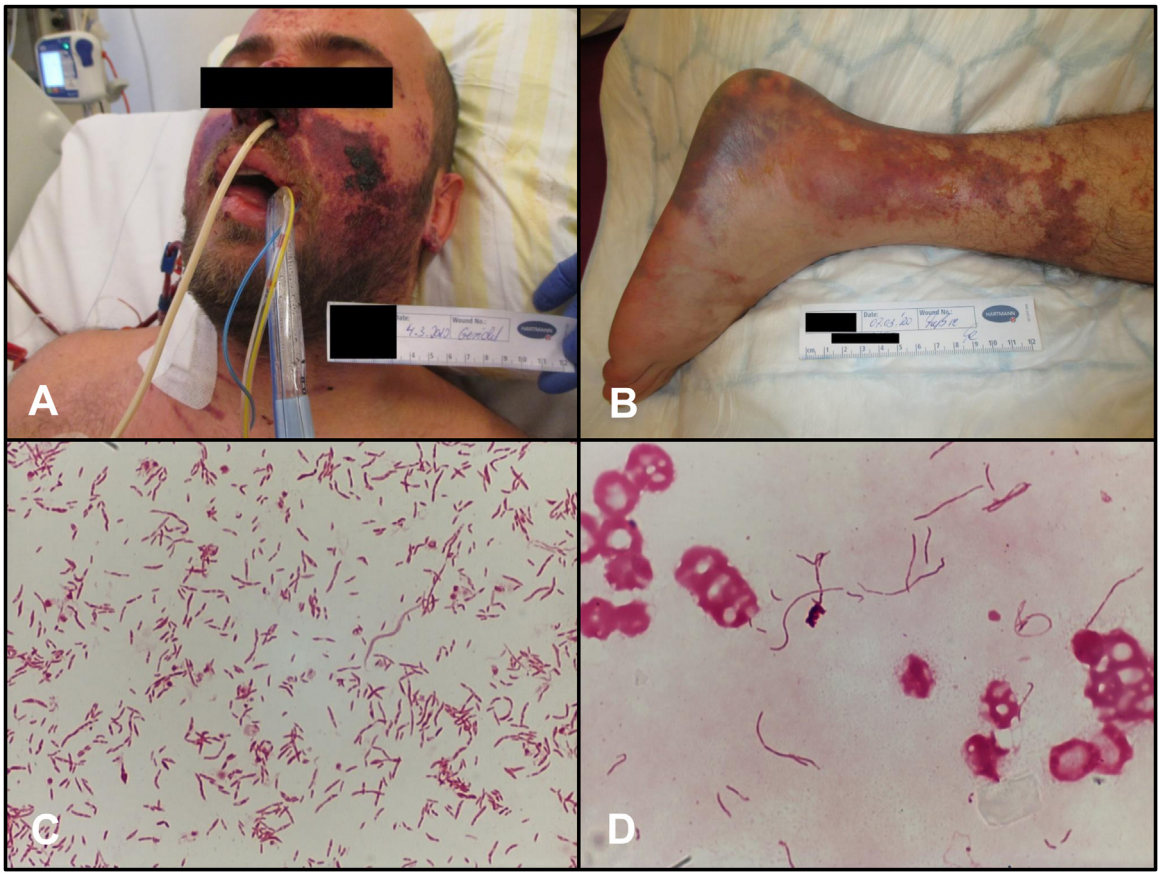

Fig. 1. (A) Purpura fulminans due to *Capnocytophaga canimorsus* sepsis with manifestation on the face and (B) on the extremities. (C) Gram stain of a bacterial isolate that grew from blood culture showing long fusiform Gram-negative rods, 2–4 μm in length, which (D) slightly tapered at both ends (100 x, oil immersion).

Funding

This case study had no funding source.

Consent

The authors received written consent from the patient to publish the photos.

Author contribution

Authors Ralph Wendt, Christian Schauff and Christoph Lübbert cared for the patient. Authors Ralph Wendt and Christoph Lübbert drafted the manuscript. All authors read and approved the final manuscript.

Ethics statement

The authors received written consent from the patient to publish the photos.

Declaration of Competing Interest

The authors have no conflict of interest to report.

Acknowledgments

We acknowledge the additional clinical and diagnostic input from Benjamin Arnold, MD, Angela Bethge, Nicole Fiedler, MD, and Patrick Swoboda, MD. Moreover, we acknowledge support from Leipzig University for Open Access Publishing.

References

[1] World Health Organization (WHO). Coronavirus disease 2019 (COVID-19) Situation Report – 100. Available from. 2020. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200429-sitrep-100-covid-19.pdf?sfvrsn=bbfbf3d1_6.
[2] Butler T. Capnocytophaga canimorsus: an emerging cause of sepsis, meningitis, and post-splenectomy infection after dog bites. Eur J Clin Microbiol Infect Dis 2015;34:1271–80.
[3] Meyer S, Shin H, Cornelis GR. Capnocytophaga canimorsus resists phagocytosis by macrophages and blocks the ability of macrophages to kill other bacteria. Immunobiology 2008;213:805–14.
[4] Mally M, Shin H, Paroz C, Landmann R, Cornelis GR. Capnocytophaga canimorsus: a human pathogen feeding at the surface of epithelial cells and phagocytes. PLoS Pathog 2008;4(9)e1000164 26.