

***Chromobacterium violaceum*: The Deadly Sepsis**

Guntur Darmawan, R. N. Yasmin Kusumawardhani, Bacht Alisjahbana, Trinugroho H. Fadjari

Department of Internal Medicine, Faculty of Medicine Universitas Padjadjaran – Hasan Sadikin Hospital, Bandung, Indonesia.

Corresponding Author:

Guntur Darmawan, MD. Department of Internal Medicine, Faculty of Medicine Universitas Padjadjaran - Hasan Sadikin Hospital. Jl. Pasir Kaliki No.190, Bandung 40173, Indonesia. email: guntur_d@yahoo.com.



Figure 1. Diffuse, indurated, partly fluctuant, purplish swelling of right hemifacial

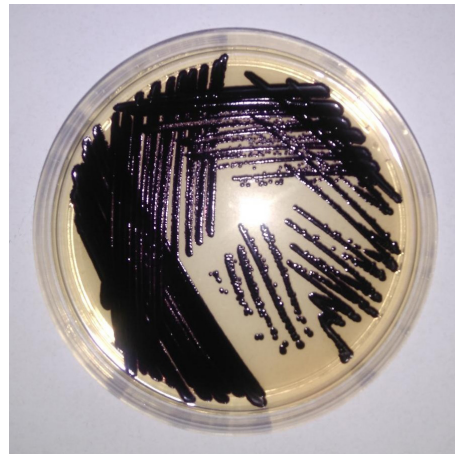


Figure 2. *Chromobacterium violaceum* growing on agar

Chromobacterium violaceum is a Gram-negative facultatively anaerobic, oxidase-positive bacterium producing a dark violet antioxidant pigment called violacein. It is an opportunistic pathogen and has an ubiquitous distribution, mainly resides in water and soil of tropical and subtropical regions.¹⁻³

An-18-year-old man referred to the emergency room with a 5-day history of progressively worsening swelling of the right cheek. He sought consult and hospitalized at another institution for three days prior this admission; however, his condition deteriorated. He had a history of having abscesses several time. Four month before this visit, he was also admitted in our hospital due to an abscess in the right thigh. Pus and blood culture were

positive for *Staphylococcus haemolyticus*, with a total serum IgE of 2493.0 IU/ml. He recovered completely after being treated with vancomycin in this event. He had neither diabetes mellitus nor human immunodeficiency virus infection history. In this presentation, he was in a critically ill state with septic shock. Physical examination revealed diffuse, indurated, partly fluctuant, and some deep purple area of right hemifacial swelling. It was extended anteriorly from angle of mouth to retroauricular, superiorly from superior palpebra to lower border of mandible (**Figure 1**). Laboratory studies were notable for a white-cell count of 12,970/mm³ (total lymphocyte count 778.2), platelet count 96,000/mm³. The patient got norepinephrine drip and broad-spectrum antibiotic intravenously.

He also underwent superficial drainage of the abscess. Unfortunately, the patient eventually succumbed. Sample from right submandibular abscess showed no growth, but blood sample was confirmed to grow *C. violaceum* (**Figure 2**). It showed sensitivity to ciprofloxacin, amikacin, cotrimoxazole, chloramphenicol, tetracycline.

Since it was firstly described in 1927, only a few cases of human infection with *C. violaceum* have been reported.^{2,4-6} As shown in our case, the classical clinical manifestation was localized soft tissue infection which rapidly progressed to fulminant sepsis with a high mortality rate.^{1,6,7} A defect in host defense system might be the predisposing factor for this kind of infection in our case. As this is such a rare infection, there is no guideline on the choice of antibiotics or duration of treatment at present. Successful treatment is most likely due to early recognition, prompt surgical drainage and appropriate antibiotic.^{2,3,5} To the best of our knowledge, this is the first reported case from Indonesia that could be identified in the literature.

ACKNOWLEDGMENTS

The authors thank Ms. Lies Ratnasari, Windi Yuliarini, MD, and Endah Nurul Aini, MD for valuable contributions to this article.

ETHICAL STATEMENT

Informed consent was obtained from patient's family prior to the publication of this case and accompanying image.

REFERENCES

1. Richard KR, Lovvorn JJ, Oliver SE, Ross SA, Benner KW, Kong MYF. Chromobacterium violaceum sepsis: Rethinking conventional therapy to improve outcome. *Am J Case Rep.* 2015;16:740–4.
2. Yang CH, Li YH. Chromobacterium violaceum infection: A clinical review of an important but neglected infection. *J Chinese Med Assoc.* 2011;74(10):435–41.
3. Parajuli NP, Bhetwal A, Ghimire S, et al. Bacteremia caused by a rare pathogen – Chromobacterium violaceum: A case report from Nepal. *Int J Gen Med.* 2016;9:441–6.
4. Meher-Homji Z, Mangalore RP, D. R. Johnson P, Y. L. Chua K. Chromobacterium violaceum infection in chronic granulomatous disease: A case report and review of the literature. *JMM Case Reports.* 2017;4(1):1-4.
5. Z Rashid, U Ali, A Sulong, R Rahman. Chromobacterium violaceum infections; a series of case reports in a Malaysian tertiary hospital. *Internet J Infect Dis.* 2013;11(1):1–6.
6. Jitmuang A. Human Chromobacterium violaceum infection in Southeast Asia: Case reports and literature review. *Southeast Asian J Trop Med Public Health.* 28;39(3):452-60.
7. Fernandes MJBC, Luz KG, Dantas LDA, Celeste M, de MCN, Almeida D. Chromobacterium violaceum: A fatal case in the northeast of the Brazil. *J Bras Patol Med Lab.* 2014;50(4):278–9.