



# Infective Endocarditis Due to *Streptococcus gallolyticus* subsp. *pasteurianus* with Pulmonary Vein Obstruction

Hiroyuki Nagao<sup>1</sup> · Hiroshi Yamaguchi<sup>2,3</sup> · Yusuke Ito<sup>1</sup> · Masashi Kasai<sup>1</sup>

Received: 17 July 2018 / Accepted: 29 August 2018  
© Dr. K C Chaudhuri Foundation 2018

*To the Editor:* *Streptococcus gallolyticus* subsp. *pasteurianus* is known to cause bacteremia or infectious endocarditis (IE) in adult patients with digestive tract malignancies [1]. In contrast, a limited number of cases have been reported in children, and these cases involved meningitis or sepsis [2, 3]. Here, we report the first case of possible IE in an infant. A 5-mo-old boy presented with tachypnea and marked cyanosis. His medical history included total anomalous pulmonary venous return (TAPVR) and pulmonary vein obstruction (PVO). On admission, he had fever, tachycardia, and tachypnea. Initial tests were performed on blood and urine samples. Twelve hours after admission, a blood culture test revealed gram-positive cocci. We performed a second blood culture test suspecting IE, while deciding to begin treatment with vancomycin. Ten hours after incubation, the second blood culture test result also showed gram-positive cocci. The following day, the bacterial strain was finally revealed to be *S. gallolyticus* subsp. *pasteurianus*, which was confirmed later by multilocus sequence typing. The two positive blood cultures from blood samples drawn >12 h apart, a medical history of congenital heart disease (CHD), and a temperature of >38 °C fulfilled one major, and two minor clinical criteria of IE, based on the Modified Duke Criteria [4]. Therefore, the patient was diagnosed as having possible IE. Considering the minimum inhibitory concentrations of penicillin G and gentamicin, we chose to administer a 2-wk treatment regimen. The patient's

condition gradually improved, and 19 d after admission, he was finally discharged. After the introduction of the universal pneumococcal conjugate vaccine, bacteremia became rare. Fewer blood cultures are recommended from young febrile children because of the low frequency of bacteremia in those children [5]. However, for patients with CHD presenting with fever, collecting a blood culture sample may be important to determine the appropriate treatment. No standard treatment has been established for *S. gallolyticus* subsp. *pasteurianus*. These bacteria are generally sensitive to penicillin. However, several isolates have been reported to have intermediate resistance to penicillin [2]. Thus, it is important to collect a blood culture sample to identify the causative microorganism and choose appropriate antibiotics.

## Compliance with Ethical Standards

**Conflict of Interest** None.

## References

1. Marmolin ES, Hartmeyer GN, Christensen JJ, et al. Bacteremia with the bovis group streptococci: species identification and association with infective endocarditis and with gastrointestinal disease. *Diagn Microbiol Infect Dis*. 2016;85:239–42.
2. Klatte JM, Clarridge JE 3rd, Bratcher D, Selvarangan R. A longitudinal case series description of meningitis due to *Streptococcus gallolyticus* subsp. *pasteurianus* in infants. *J Clin Microbiol*. 2012;50:57–60.
3. Gavin P, Thomson RB Jr, Horng SJ, Yogev R. Neonatal sepsis caused by *Streptococcus bovis* variant (biotype II/2): report of a case and review. *J Clin Microbiol*. 2003;41:3433–5.
4. Li JS, Sexton DJ, Mick N, et al. Proposed modifications to the Duke criteria for the diagnosis of infective endocarditis. *Clin Infect Dis*. 2000;30:633–8.
5. Greenhow TL, Hung YY, Herz A. Bacteremia in children 3 to 36 months old after introduction of conjugated pneumococcal vaccines. *Pediatrics*. 2017;139:e20162098. <https://doi.org/10.1542/peds.2016-2098>.

✉ Hiroshi Yamaguchi  
hiyamaguchi\_kch@hp.pref.hyogo.jp

<sup>1</sup> Division of Infectious Disease, Department of Pediatrics, Hyogo Prefectural Kobe Children's Hospital, Kobe, Japan

<sup>2</sup> Department of Neurology, Hyogo Prefectural Kobe Children's Hospital, 1-6-7 Minatojima-minamimachi, Chuo-Ku, Kobe, Hyogo 650-0047, Japan

<sup>3</sup> Department of Pediatrics, Kobe University Graduate School of Medicine, Kobe, Japan