Clostridium Perfringens Detected by Peripheral Blood Smear

Tatsuyoshi Kitamura

Key words: clostridium perfringens, blood smear, C.perfringens bacteremia, hemolysis

A 65-year-old man was brought to the ER for altered mental status for 12 hours. At ER, the patient was lethargic with hyperthermia. The laboratory studies revealed intravascular hemolysis with anemia, hyperkalemia, and elevated LDH. The abdominal CT showed liver abscess with marked aerobilia. Respiratory condition deteriorated rapidly, necessitating intubation. A massive amount of blood exuded from the bronchial tube. Clostridium perfringens bacteremia was suspected from the blood smear report, which revealed spore-forming bacteria phagocytized by neutrophils with Giemsa stain (Picture 1), and gram positive rods by Gram stain (Picture 2). Clindamycin was added to meropenem and vancomycin, however, the patient died 6 hours after admission. Blood culture grew C. perfringens 1 day later.

Acute life-threatening hemolysis is a characteristic complication of C. perfringens bacteremia, which is associated with a high fatality rate. Therefore, an early diagnosis and immediate onset of an appropriate antimicrobial therapy are crucial. Peripheral blood smear may be useful for the diagnosis of C. perfringens bacteremia.

The authors state that they have no Conflict of Interest (COI).