MASSIVE INTRAVASCULAR HEMOLYSIS DUE TO CLOSTRIDIUM PERFRINGENS SEPTICEMIA: A CASE REPORT

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INTRODUCTION:

Clostridium perfringens septicemia is a rare and a fatal disease with a mortality rate up to 70-100% if accompanied with massive intravascular hemolysis (7-15% of the cases). Early diagnosis improves the survival possibilities.

CASE PRESENTATION::

An 83-year-old man came to Emergency Department with fever, bilious vomiting and diarrhea. He was diagnosed with arterial hypertension, prostatic hyperplasia, chronic renal disease, Parkinson and gout. Six months prior, he also had an acute cholecystitis. Laboratory data were: 118x10^9 platelets/L (normal range [NR] 140-400), 26.3x10^9 leucocytes (NR 3.9-9.5), creatinine 156.5 µmol/L (NR <115), bilirubin 92 µmol/L (NR<17), alanine aminotransferase 2.23 µkat/L (NR<0.7), C-reactive protein 71 mg/L (NR <3), procalcitonine 53 ng/mL (NR <2) and lactate 6.3 mmol/L (NR <2). Microbiological cultures were requested (urine, stool and blood). The patient started intravascular antibiotic.

After 24 hours, hemoglobin levels decreased strongly (from 175 g/L to 112 g/L) accompanied with reticulocytosis. Serum sample was abnormally dark and was reported as hemolyzed **(Image 1).** Hemolysis parameters were: unconjugated bilirubin 85.7 µmol/L (total bilirubin 122.5 µmol/L) and LDH 114 µkat/L (NR <4.02). Direct antiglobulin test was negative.

A review of blood smear revealed the presence of micro-spherocytes **(Image 2).** Falsely elevated platelet count on impedance was caused by micro-spherocytes. Platelet count was 40 x10^9/L after 48 hours of admission. Renal function was drastically damaged, creatinine increased to 678 µmol/L in 48 hours and patient became anuric and started hemodialysis. *Clostridium perfringens* was isolated in blood. Despite antibiotherapy and hemodialysis sessions, the patient died at 37 days after the admission.

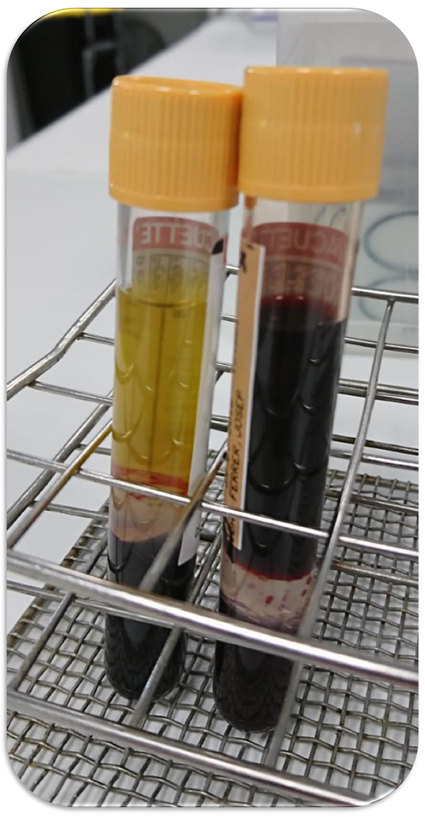

Image 1: Normal (left) and dark (right) serum sample.

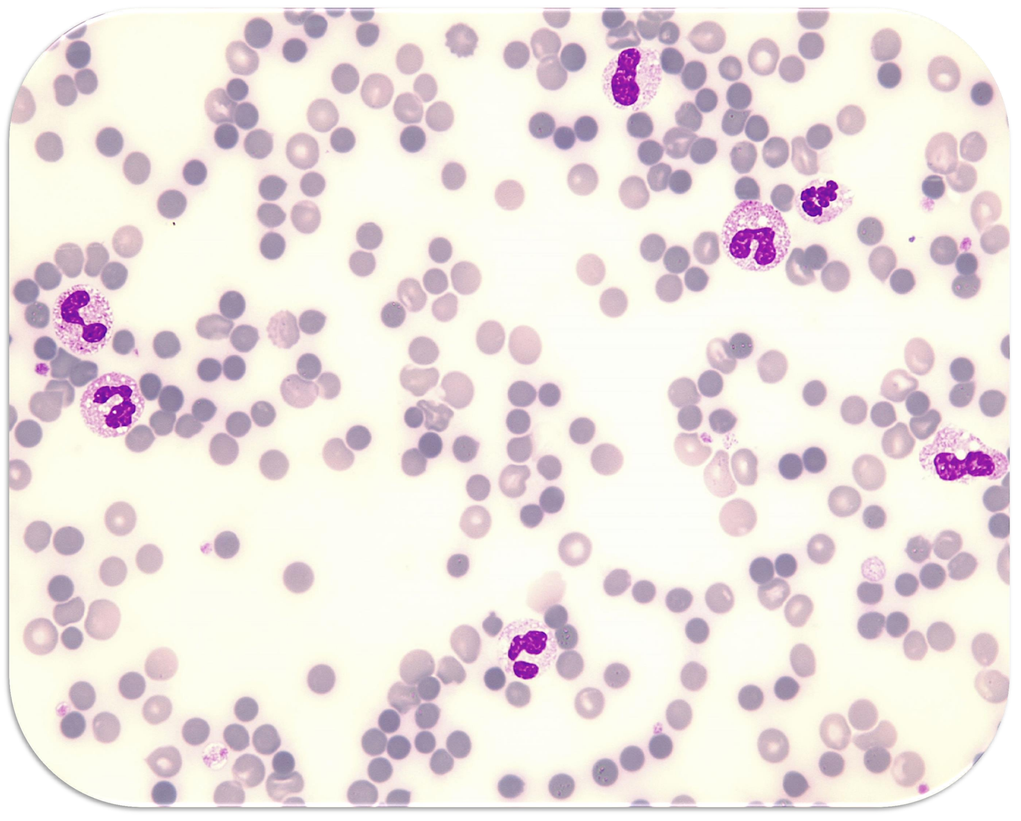

Image 2: Micro-spherocytes on blood smear.

DISCUSSION:

Massive intravascular hemolysis is a complication in *Clostridium perfringens* infection due to the alphatoxin phospholipase C lecithinase that hydrolyses red blood cell membranes. The rapid worsening of this disease is also caused by the 7-minute doubling time of the organism.

Differential diagnosis between infectious diseases and non-infectious diseases has to be considered in a patient who presents fever and signs of hemolysis. Accurate revision of peripheral blood films are clue for proper diagnosis to detect hemolysis.