

A case of hemolytic uremic syndrome caused by *Clostridium perfringens* infection in elderly patient

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Typical hemolytic uremic syndrome(HUS) is characterized by hemolytic anemia, thrombocytopenia, and renal failure due to intestinal infection. Shiga toxin-producing bacteria, such as *Escherichia coli* O157:H7 and *Shigella*, are known to be the most common cause of HUS, and there are reports of very rare cases where it can be caused by Neuraminidase-producing bacteria. An elderly patient experienced HUS induced by *Clostridium perfringens* infection, and we report this as a case study. A 76-year-old woman with underlying hypertension visited the emergency room with abdominal pain and diarrhea that had occurred for one week before and was hospitalized on suspicion of enterocolitis. initial laboratory test showed hemoglobin(Hb) 11.1g/dL, platelet(Plt) $93 \times 10^3/\mu\text{L}$, and serum creatinine(s-Cr) 1.84mg/dL. After conservative treatment, Hb 7.3g/dL, Plt $26 \times 10^3/\mu\text{L}$, s-Cr 2.44mg/dL on the third day of hospitalization, with LDH increased to 2077U/L, along with worsening anemia, thrombocytopenia, and renal failure. Schistocytes was observed in peripheral blood smear, and all tests performed for differential diagnosis such as Coombs' test and autoimmune antibodies were negative. No *E. coli* O157, O111 or O26, were found in stool culture test, and stool multiplex PCR results were all negative for Shiga toxin-related *E. coli* O157:H7 or *Shigella*, with *C. perfringens* being the only positive result confirmed. The patient was diagnosed with HUS induced by *C. perfringens* infection, with an ADAMTS13 activity of 66.5% in a later confirmed test, and no atypical HUS-related gene mutations were found in Next Generation Sequencing. Due to a decrease in urine output and worsening of generalized edema, along with an increase in BUN/s-Cr to 100.1/3.26mg/dL, hemodialysis was carried out temporarily during hospitalization. All symptoms and blood test results improved after treatment; therefore, hemodialysis was discontinued and the patient was discharged. *C. perfringens* is a rare cause of HUS compared to Shiga toxin-producing bacteria; however, considering that *C. perfringens*-induced intestinal infection is occasionally observed in clinical practice, careful observation is necessary as a possible cause of HUS.

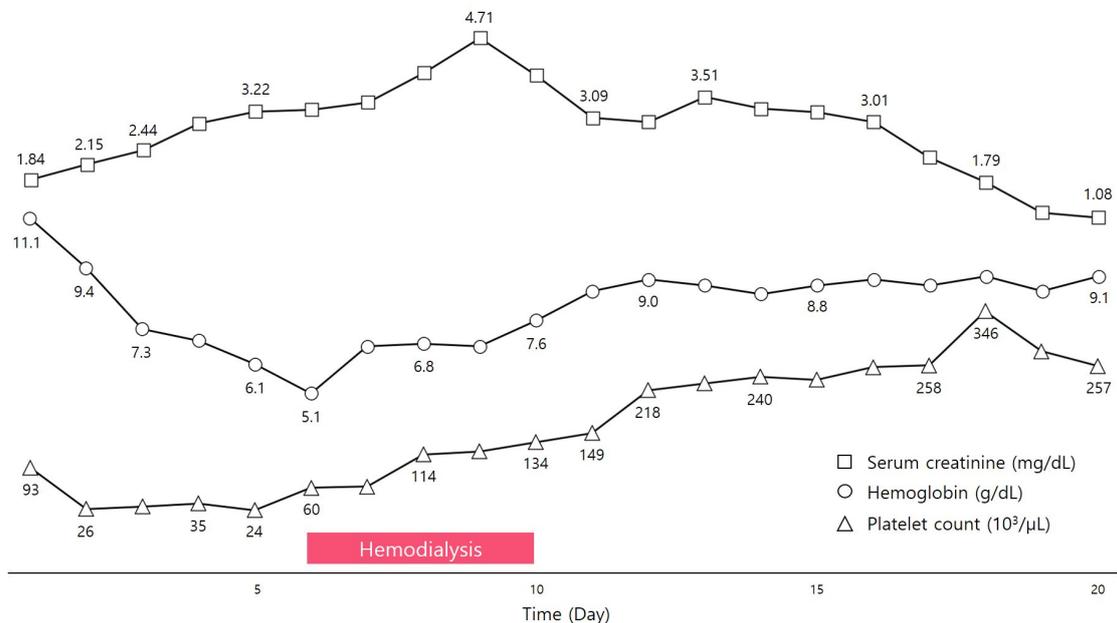


Figure 1. Hematologic parameters and renal function change in a patient