

Abstract Type : Poster

Abstract Submission No. : PO-1562

Green dialysate and duodenal perforation in a peritoneal dialysis patient

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Case Study: Peritonitis due to viscus perforation in peritoneal dialysis (PD) patients can be catastrophic. We describe the reported case of unknown caused duodenal perforation in a PD patient. A 55-years-old woman with a history of hypertension and end- stage renal disease under continuous ambulatory peritoneal dialysis treatment of 10 years presented to the emergency room with severe abdominal pain, nausea and vomiting lasting 4hrs. Laboratory studies indicated a white blood cell (WBC) count 10,700 cells/mm³, hemoglobin 11.4 g/dL, AST 21 IU/L, ALT 14 IU/L, amylase 163 IU/L, lipase 104 IU/L total bilirubin 0.3 mg/dL, creatinine 10.8 mg/dL, crp 0.80 mg/dL, sodium concentration 135 mM/L and potassium concentration 3.2 mM/L. PD dialysate effluent analysis revealed WBC 709/mm³ with 99% polymorphonuclear leukocyte (PMN). Chest and abdominal X-ray could not show free air sign.

She was diagnosed with PD peritonitis and admitted to ward. Cefazolin and cefoperazone were administered intraperitoneally empirically. PD dialysate effluent showed WBC counts of 4640/ μ L (PMN 98%) but dialysate color is mild clear, symptom is relifed on the 2 day.

On the 3 day of hospitalization, the dialysate color changed green (fig 1), she complained of diffuse abdominal pain, nausea and vomiting again. The "board-like abdomen" sign was not noted.

Pneumoperitoneum and peritonitis were documented on computed tomography (CT) but perforation site could not finded.(fig 2)

Immediate definitive surgery was performed. We found rupture 1cm on duodenal 1st portion. Primary closure of duodenum was done with external drainage.(fig 3, fig 4)

The PD catheter was removed and the next day, the perm catheter was inserted and hemodialysis was started. For a week she kept the NPO and proton pump inhibitor was used.

She had no abdominal pain even after the meal started. She plans to maintain hemodialysis after performing an arterio - venous fistula operation.

figure 1 green dialysate



figure 3 duodenal perforation

