Recurent abdominal pain and bloody ascites

To the Editor: Encapsulating peritoneal sclerosis (EPS) is a rare and serious complication of peritoneal dialysis, characterized by thickened peritoneal membranes, leading to ultra-filtration failure and intestinal obstruction. The incidence and mortality rates of EPS in patients on continuous ambulatory peritoneal dialysis (CAPD) are approximately 0.5%-2.8% and 24%-84%, respectively, and the incidence appears to be increasing.1 The early clinical manifestations, like abdominal pain and bloody ascites, are nonspecific and often not recognized. Diagnosis is often delayed, being clinched at a late stage of EPS, presenting with partial or complete small bowel obstruction combined with malnutrition. Our case highlights the fact that non-sterile bloody ascites can be an early sign of EPS, and computed tomography (CT) is a noninvasive and useful tool to aid in the diagnosis of EPS.

A 53-year-old man presented three times to the emergency department with recurrent abdominal pain associated with nausea, vomiting and weight loss of 7 kg in 2 months. He had uremia on CAPD for 8 years with 5 episodes of peritonitis and 2 episodes of bloody dialysates, and then switched to hemodialysis 6 months previously. Physical examination revealed malnutrition with muscle mass wasting, pale conjunctiva, soft abdomen with diffuse tenderness, shifting dullness and diminished bowel sounds. Pertinent laboratory data revealed hemoglobin of 7.8 g/dL; albumin, 2.8 g/dL; C-reactive protein, 6.9 mg/dL. Abdominal tapping revealed bloody ascites without infection or malignancy. Abdominal CT showed ascites, peritoneal membrane thickening and bowel wall calcification (Figure 1); and bowel loop tethering posterior to lobulated fluid collection on retraction of the root of the mesentery.

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5. Pertinent laboratory data revealed hemoglobin of 7.8 g/dL; albumin, 2.8 g/dL; C-reactive protein, 6.9 mg/dL. Abdominal tapping revealed bloody ascites without infection or malignancy. Abdominal CT showed ascites, peritoneal membrane thickening and bowel wall calcification (Figure 1); and bowel loop tethering posterior to lobulated fluid collection on retraction of the root of the mesentery.
the mesentery (Figure 2). Based on the history, clinical symptoms and image findings, a diagnosis of EPS was made. The patient underwent exploratory laparotomy with enterolysis. Peritoneal biopsy was consistent with the pathological findings of EPS with proliferation of fibro-connective tissue and inflammatory infiltrates. Unfortunately, the patient died of malnutrition and sepsis 2 months after operation.

EPS characterized by intraperitoneal inflammation and fibrosis with resultant adhesion and encapsulation of the small bowel is a rare but devastating complication in uremic patients on long-term CAPD. It can lead to ultra-filtration failure; intestinal obstruction; and even morbidity and mortality, rates of both of which could be very high. Although the underlying mechanisms for the development of EPS remain elusive, the risk factors of EPS include CAPD therapy for a duration of more than 5 years, previous peritonitis, high glucose or acetate-containing concentrations, and exposure to chlorhexidine used for sterilization.2 The characteristic manifestations of EPS are non-sterile bloody dialysate or ascites; and gastrointestinal symptoms such as abdominal pain, nausea, vomiting, weight loss, abdominal distention and malnutrition highly related to intestinal obstruction.3 Typical CT findings are peritoneal thickening and calcification, bowel wall calcification, lobulated fluid collections and bowel tethering posterior to fluid collections.4

The management of EPS is very challenging. The cessation of CAPD, parenteral nutritional support and use of anti-fibrotic (tamoxifen) or anti-inflammatory (corticosteroids, azathioprine, cyclosporine or mycophenolate) agents may be helpful. Early surgical intervention to strip the encapsulating membrane and perform enterolysis is indicated for patients with intestinal obstruction refractory to medical therapy. Prompt recognition of EPS with optimal management may avoid disease progression. Nevertheless, a higher index of suspicion for EPS is warranted in CAPD patients with gastrointestinal symptoms and previous history of peritonitis, and with non-sterile bloody dialysate.

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