

Surgical treatment of sclerosing encapsulating peritonitis

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ABSTRACT

We report a patient with end stage renal failure (ESRD) with chronic ambulatory peritoneal dialysis (CAPD) who suffered from chronic peritonitis due to repeat dialytic tube infection. She also had surgery for exploratory laparotomy because of gastric ulcer bleeding, and finally dialytic tube had removed. Abdominal cocoon formed one year later with severe adhesion of abdomen wall, peritoneum and intestine. Urgent surgical intervention secondary to intestinal obstruction was performed after failure of conservative treatment. To avoid the previous surgical adhesion, we performed the surgery with a horizontal incision, where ablation is most easily performed. With careful dissection and excision of the thick capsule, the patient is doing well without further incident at 12 months follow-up.

KEY WORDS: Sclerosing encapsulating peritonitis, Cocoon abdomen, Intestinal obstruction, Chronic ambulatory peritoneal dialysis.

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INTRODUCTION

Sclerosing encapsulating peritonitis (SEP) or cocoon abdomen is a rare cause of small bowel obstruction. The pathogenesis of this condition remains unclear. However, it is a form of chronic irritation and inflammation, and may be summarized as primary or secondarily induced.¹ Operative mortality was even more than 50%,^{2,3} but

there are little reports in the literature about surgical intervention for SEP with previous abdominal operation. Here we report an approach to the SEP and which makes surgery more safe.

CASE REPORT

A 44-year-old female presented to our emergency department (ED) with a three-day history of colicky abdominal pain, non-bilious vomiting and no passage of stool. In the medical history, she had received exploratory laparotomy with chronic ambulatory peritoneal dialytic tube implantation due to chronic glomerulonephritis with end stage renal disease (ESRD) seven years ago and simple closure with omentum coverage due to bleeding gastric ulcer two years ago. In addition, she had undergone exploratory laparotomy with removal of dialytic tube due to repeat infection with chronic peritonitis one year ago. At ED, her vital signs revealed temperature of 37.5 °C, pulse of 102 / min and blood pressure of 147/66 mmHg. Physical examination showed a vertical old scar cross the abdomen and a horizontal old scar over right side of abdomen, and local tenderness with rebounding

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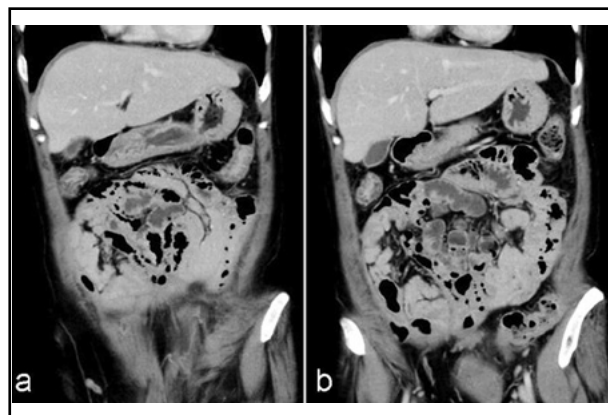


Fig.1: Contrasted abdominal computer tomography (CT) revealed crowded of the distal jejunum and proximal ileum with segmental wall thickening, and peritoneal thickening over the lower abdomen.

pain over whole abdomen. There is no remarkable finding on digital examination. The blood tests showed white blood count of 13000/ul with predominant segmented neutrophils. Contrasted abdominal computer tomography (CT) revealed crowded distal jejunum and proximal ileum with segmental wall thickening, and peritoneal thickening over the lower abdomen (Fig.1). The patient underwent exploratory laparotomy with lysis of adhesion due to sclerosing encapsulating peritonitis with acute intestinal obstruction. We created a horizontal incision and the ablation was performed from left side of the abdomen. At laparotomy, we found dense, thick, adhesive sheaths circumferentially wrapping loops of small bowel giving the shape of cocoons in the abdomen (Fig.2). The loops within each cocoon were normal and adherent to each other with avascular fine fibrous tissue. At last, pathological examination revealed fibrosis with occasional chronic inflammatory cells, consistent with sclerosing encapsulating peritonitis (SEP). The postoperative recovery was uneventful, and she recovered well without further incident at 12 months follow-up.

DISCUSSION

Sclerosing encapsulating peritonitis (SEP), also known as abdominal cocoon, was first described in 1907 by Owtschinnikow and characterized by a thick grayish-white fibrotic membrane, partially or totally encasing the small bowel.¹ Clinically, it presents with recurrent episodes of abdominal distention, small bowel obstruction, nausea and anorexia, but some patients may be asymptomatic.⁴ The major possible causes include long-term use

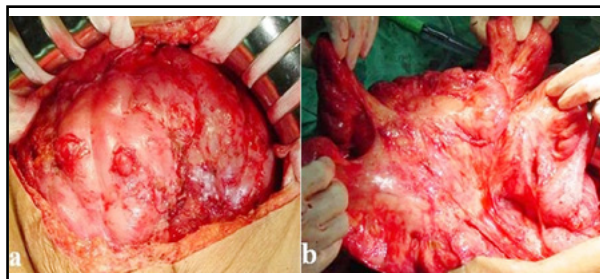


Fig.2: At laparotomy, we found dense, thick, adhesive sheaths circumferentially wrapping loops of small bowel giving the shape of cocoons in the abdomen (a). With excision and ablation of the capsules, complete enterolysis is finally achieved (b).

of chronic ambulatory peritoneal dialysis (CAPD), β -adrenergic blocking agents, and liver cirrhotic patients after peritoneal-venous shunt surgery.^{1,5,6} Other rare causes include abdominal tuberculosis,^{7,8} ventriculoperitoneal or peritoneovenous shunts,^{9,10} and recurrent peritonitis.

When CAPD patients with peritoneal deterioration complain of gastrointestinal symptoms, SEP is to be suspected. The condition should be suspected in patients with bowel obstructive signs or soft, non-tender abdominal masses. In most cases, the clinical diagnosis of SEP is not difficult to establish. In the appropriate clinical setting, recognition of the entire dilated small bowel at the center of the abdomen and encased within a thick fibrocollagenous membrane on a CT image findings is diagnostic of SEP.¹¹

Surgical treatment is necessary when irreversible intestinal obstruction or intractable abdominal pain sets in. The basic surgical technique of excision and ablation of the capsules is therefore used to make the encapsulated intestine a single tube.^{12,13} In the past, the operative mortality was more than 50%, especially those who had received previous surgical intervention causing more adhesion with small bowel, peritoneum, and abdominal wall. Although several cases of successful surgical treatment of SEP have been reported in the literature,^{14,15} there are little reports about surgical intervention for SEP with previous abdominal operation.

Our patient had undergone exploratory laparotomies three times in the past for gastric ulcer with bleeding, dialytic tube implantation and removal. In consideration of the abdominal cocoon and severe abdominal wall adhesion because of previous surgeries and repeat infection, the ablation was performed via a horizontal incision at left side of the abdomen, where the adhesion is the least. In

addition, linear excision of the capsules can often be performed at several regions of the small intestine if complete enterolysis is difficult to accomplish.¹⁶

In summary, SEP has been considered a fatal pathologic condition with high mortality rate in surgical treatment. Therefore, when examining a CAPD patient who complains of gastrointestinal symptoms, the possibility of SEP has to be kept in mind. Surgical treatment is necessary if irreversible intestinal obstruction or intractable abdominal pain sets in. To our knowledge, the approach modality in this case is not yet reported in the literature. With careful dissection and excision of the thick capsule, the patient leads a good result without further incident.

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