Sclerosing encapsulating peritonitis is a well recognized, but uncommon, complication of chronic ambulatory peritoneal dialysis. I report a case of sclerosing encapsulating peritonitis in which percutaneous catheter drainage was performed preoperatively. Ultrasonography (US) and computed tomography (CT) showed a large multi-septated cystic mass which occupied nearly all the peritoneal cavity. Percutaneous drainage with two 8.5 French catheters was preoperatively performed under fluoroscopy and about 2100 ml of bloody fluid was drained for 20 days. On follow-up CT, the size of the cyst had significantly decreased and an operation was performed. It is considered that percutaneous catheter drainage is useful in the preoperative decompression of sclerosing encapsulating peritonitis.

Index Words: Peritonitis
Dialysis
Abdomen, interventional procedure

Since 1977, chronic ambulatory peritoneal dialysis has been an effective form of maintenance therapy for patients with end-stage renal disease (1). Sclerosing encapsulating peritonitis is a well-recognized, but uncommon, complication of chronic ambulatory peritoneal dialysis. The possible treatment is surgical removal of the densely sclerotic collagenous covering and drainage of cystic fluid. The membrane is tightly adherent to the bowel loops and mesentery, and because the mass is large, percutaneous catheter drainage for preoperative decompression is necessary, but has not been reported to date.

I report a case of sclerosing encapsulating peritonitis with preoperative percutaneous catheter drainage.

CASE REPORT

A 41-year-old man suffered chronic renal failure for 13 years and had been on chronic ambulatory peritoneal dialysis for five years. He presented with dizziness, general weakness, abdominal pain, nausea, vomiting and episodes of small bowel obstruction. US and CT showed a multi-septated cystic mass which occupied nearly all the peritoneal cavity (Fig. 1 a, b). Both kidneys showed atrophy with multiple small cysts and calcifications (Fig. 1 b). Fluoroscopy-guided catheter drainage was performed preoperatively with pig-tail type 8.5 French VTC nephrostomy catheter (Meditec, USA). After 14 days, an additional catheter was also inserted, and a guidewire was inserted sufficiently into the cystic cavity to destroy the multiple septa (Fig. 1 c). Bloody fluid was drained and the total amount was about 2100 ml in 20 days. The aspirate was exudate. *Staphylococcus aureus* and *micrococcus* were cultured. On follow-up CT, cyst was significantly smaller (Fig. 1 d). Laparotomy with cyst unroofing was performed. The cyst with necrotic materials and thickened membrane was found on operation to be severely adherent to the parietal peritoneum and adjacent organs including small bowels, stomach and transverse and ascending colon. The pathologic finding was fibrocollagenous cyst wall with chronic inflammation. Tissue from the cystic content was necrotic fibrin clot.

DISCUSSION

Sclerosing encapsulating peritonitis was initially...
reported as a possible late complication of intermittent peritoneal dialysis (2), but all cases subsequently described have been associated with chronic ambulatory peritoneal dialysis (3). It is thought to occur in up to 1% of patients on ambulatory dialysis and has a high mortality, particularly when small bowel obstruction develops (4).

The etiology of sclerosing encapsulating peritonitis in ambulatory dialysis is probably multifactorial. It is thought to be responsible for the use of acetate- and lactate buffered dialysates with secondary infection, pravastatin (beta-blocker), developmental anomaly and so on (5-7).

The ultrasonographic appearance of sclerosing encapsulating peritonitis has been reported, and the observed features included loculated ascites, fibrous adhesions and membrane formation over the surface of the bowel, as well as altered peristaltic activity of the enclosed loops (7). Korzets et al reported that computed tomography revealed loculated ascites, adherent bowel loops and luminal narrowing of the bowel within the thickened peritoneal membrane (8). My case showed a large multi-septated cystic mass which occupied nearly all the peritoneal cavity and caused peripheral displacement of bowel loops.

With the increasing use of ambulatory peritoneal dialysis, the incidence of sclerosing encapsulating peritonitis is also increasing and it is therefore important to recognize this condition. With appropriate clinical setting, the radiological findings are diagnostic.

If diagnosis is made before operation, the sclerotic membrane can be separated from the small bowel (1). Successful release of sclerotic membrane is almost impossible when there is complete obstruction, and mor-.}

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**Fig. 1.**

a. US reveals a large hypoechoic cystic mass with echogenic multiple septations.

b. CT shows low density cystic mass which occupy nearly all the peritoneal cavity. Both kidneys show atrophy with multiple small cysts and calcifications.

c. Percutaneous catheter drainage was performed. Guidewire was inserted sufficiently into the cystic cavity to destroy the multiple septa.

d. Follow-up CT on 14 days after percutaneous catheter insertion shows significantly decreased cystic mass (arrow: catheter).
tality is then very high (4). Death occurs in more than 60% of patients within four months of diagnosis, and is almost invariably related to bowel obstruction or surgical complications (3). In my case, as surgical removal was impossible because the mass was large, preoperative percutaneous catheter drainage was performed for decompression. Due to multiple septations, insertion of the guidewire met with some resistance. For successful drainage, two catheters were used and the guidewire was repeatedly inserted carefully and deeply into the cystic cavity to make communication between the locules.

Diagnosis can be made by laparotomy, which reveals the characteristic gross thickening of the peritoneum, which encloses some or all of the small bowel in a cocoon of tissue. The mesenteric root may also be sclerotic and retracted.

I report a case of sclerosing encapsulating peritonitis with chronic ambulatory peritoneal dialysis and it is considered that percutaneous catheter drainage is useful in preoperative decompression.

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<table>
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Contact: American Radium Society,  
P.O. Box 2348, Merrifield, VA 22116, USA.  
(Tel: 1-800-3732204; Fax: 1-703-6481863) |
| 45th Annual Scientific Meeting of the Radiation Research Society (1997/05/01 – 08) | Venue: Providence, RI, USA.  
Contact: Mark G. Watson, Ex. Secr., Radiation Research Soc.,  
2021 Spring Road, Ste. 600, Oak Brook, IL 60521, USA.  
(Tel: 1-703-5712881; Fax: 1-703-5717837) |
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Contact: Am. Roentgen Ray Society,  
1891 Preston White Drive, Reston, VA 22091, USA.  
(Tel: 1-703-6488922; Fax: 1-703-2648863) |
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Contact: ESTRO Secretariat, UH Gasthuisberg,  
Herestraat 49, B-3000 Leuven, Belgium.  
(Tel: 32-16-347680; Fax: 32-16-347681) |
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Contact: Beate v. Waldthausen, Deutsche Roentgenges. e. V.,  
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(Tel: 49-6172-488585; Fax: 49-6172-488587) |
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Contact: Tim Moses or, Lora Tannehill, ASNR,  
2210 Midwest Road, Ste 207, Oak Brook, IL 60521, USA.  
(Tel: 1-708-5740220; Fax: 1-708-5740661) |
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Contact: Miss S. E. Nickson, Bir, 36 Portland Place,  
London W1N 4AT, United Kingdom.  
(Tel: 44-171-4367807; Fax: 44-171-2553209) |
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Contact: Prof. W. Steinbrich, Kantonsspital Basel,  
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Contact: Mrs. M. Stevens, UZ Gasthuisberg,  
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