Dear Sir,

Hydrothorax related to ascites has sometimes been noted in patients with hepatic cirrhosis [1] or solid ovarian tumors [2] and the genesis of its pleural effusion has been considered to involve direct transfer of ascites from the peritoneal cavity to the pleural space through diaphragmatic defects or transdia-phragmatic lymphatics [3]. In recent years, reports of hydrothorax related to continuous ambulatory peritoneal dialysis (CAPD) have increased [4-10]. Although intraperitoneal fluid is continuously drained by lymphatics and the peritoneal lymphatic absorption rate in CAPD patients is consistent with that in patients with hepatic ascites [5], the appearance rate of hydrothorax in CAPD patients has been reported to be 1.6% in Japan [4]. The reason why its incidence is low compared to the incidence of hydrothorax due to hepatic cirrhosis remains unclear.

Concerning the treatment of hydrothorax due to CAPD-induced diaphragmatic communication, brief interruption of CAPD [6], combined use of small exchange volume in a semisitting position [4], pleurodesis [7-9] and surgical procedures [10] have been found to be effective. Although treatment with pleurodesis employing adhesive agents such as iodized talc [7], fibrin adhesive [8] and tetracy-cline [9] has been successfully performed, side effects such as pyrexia and chest pain often occur. In addition, there is a possibility that fibrotic changes may be induced in the peritoneum when a strong adhesive agent passes through the diaphragma. We therefore attempted pleurodesis with autoblood which is thought to be a weak adhesive agent.

A 54-year-old male on CAPD (schedule: $4 \times 1,500$ ml of a $1.5\ g\%$ glucose dialysate) was admitted in November 1989, because of right pleural effusion. We had diagnosed hydrothorax due to CAPD-induced diaphragmatic communication by using technetium-99m-la-belled macroaggregated albumin. Since the hydrothorax was not improved by combined application of a small exchange volume in a semisitting position, the patient was subjected to pleurodesis with $100$ ml of autovenous blood in a sitting position after draining the dialysate and pleural effusion as completely as possible. CAPD was discontinued for $24$ h after the pleurodesis, but was subsequently reinitiated on a daily schedule of $6 \times 500$ ml of a $1.5\ g\%$ glucose dialysate for $2$ days and then $6 \times 1,000$ ml for $2$ days with restriction of protein,
potassium, sodium and water. Since examination of a chest radiograph on the 6th day after
the pleurodesis revealed complete disappearance of the pleural effusion, the CAPD schedule
was returned to the original condition, and the patient was discharged in December 1989.
During and after the pleurodesis, side effects such as pyrexia and chest pain were never
recognized. The patient continues on CAPD at present (August 1992).

Treatment of hydrothorax due to CAPD-induced diaphragmatic communication with
pleurodesis using autoblood thus proved to be effective, safe and inexpensive, and this
technique provided a cure over a period of 2.5 years. We therefore propose that autoblood
should be the first choice among adhesive agents when treatment by pleurodesis for
hydrothorax due to CAPD-induced diaphragmatic communication is performed.

References

Johnston RF, Loo RV: Hepatic hydrothorax: Studies to determine the source of the fluid and

Meigs JV: Fibroma of the ovary with ascites and hydrothorax: Meigs’ syndrome. Am J

Lieberman FL, Hide Kura R, Peters R, Reynolds TB: Pathogenesis and treatment of

Nomoto Y, Suga T, Nakajima K, Sakai H, Osawa G, Ota K, Kawaguchi Y, Sakai T, Sakai S,
Shibata M, Takahashi S: Acute hydrothorax in continuous ambulatory peritoneal dialysis: A

absorption to loss of ultrafiltration and solute clearances in continuous ambulatory peritoneal

Singh S, Vaidya P, Dale A, Morgan B: Massive hydrothorax complicating continuous

Scheldewaert R, Bogaerts Y, Pauwels R, Der Straeten MV, Ringoir S, Lameire N:
Management of a massive hydrothorax in a CAPD patient: A case report and a review of the

Vlachojannis J, Boettcher I, Brandt L, Schoeppe W: A new treatment for unilateral recurrent

9 Benz R, Schleifer CR: Hydrothorax in continuous ambulatory peritoneal dialysis:
Successful treatment with intrapleural tetracycline and a review of the literature. Am J

10 Pattison CW, Rodger RSC, Adu D, Michael AJ, Matthews HR: Surgical treatment of
hydrothorax complicating continuous ambulatory peritoneal dialysis. Clin Nephrol

Okada/Takahashi/Kinoshita Therapy of CAPD-Induced Diaphragmatic
Communication