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Case Reports Of Successful Repair For Hydrothorax Associated With Pleura-Peritoneal Communication In Peritoneal Dialysis Patients

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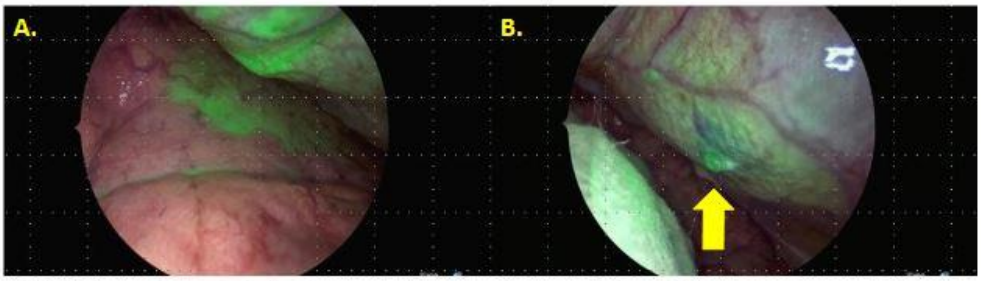
Case Study : Pleuroperitoneal communication (PPC) is an uncommon but well-recognized complication in peritoneal dialysis (PD) patients, often requiring a shift to hemodialysis (HD) treatment. We report cases of patients successfully treated with targeted surgical intervention. The first case is a 49-year-old woman on PD for 5 months, presenting with dyspnea and right pleural effusion. Upon laboratory examinations with thoracentesis of 1500 mL, revealed transduate characteristics, including a pleural glucose level 630mg/dL, compared to serum glucose 105 mg/dL, suggesting PPC. Video-Assisted Thoracoscopic Surgery (VATS) was performed to repair the diaphragm pore, using indocyanine green (ICG) for clear visualization. Peritoneal dialysate mixed with ICG was administered through the PD catheter during surgical procedure under trendelenberg position, enabled easy localization of the leak, and the pore was sealed. She resumed PD treatment successfully without recurrence. The second case is 57-year-old male on PD for 2 years, presenting with a right-sided massive pleural effusion during a routine outpatient visit. Thoracentesis drained 1000 mL, showing transudate with protein 606 mg/dL, LDH 75 IU/L (serum protein 5.6 g/dL, LDH 403 U/L). As pleural fluid persisted the day after thoracentesis, VATS with ICG was used, and the diaphragm pore was easily located and repaired. PD was successfully resumed without complications. PPC is a rare but problematic issue in PD patients and a major obstacle to continuing treatment if it is not well controlled. While there is no consensus on the standard treatment, we present a secure and successful model using VATS with ICG. This approach offers advantages over previous methods, such as peritoneo-pleural scintigraphy with radiocontrast, reported to have lower diagnostic accuracy and potential nephrotoxicity deteriorating residual renal function. Fluorescence-guided surgery using ICG effectively defines the diaphragm pore, and is beneficial in overcoming a serious technical problem associated with PD, resulting in shorter surgical times.

Figure 1 (1).JPG



A) ICG in peritoneal dialysate was shown under near-infrared fluorescence scanning.
B) A leakage through diaphragm pore (arrow) was noted.

Figure 1 (1).JPG

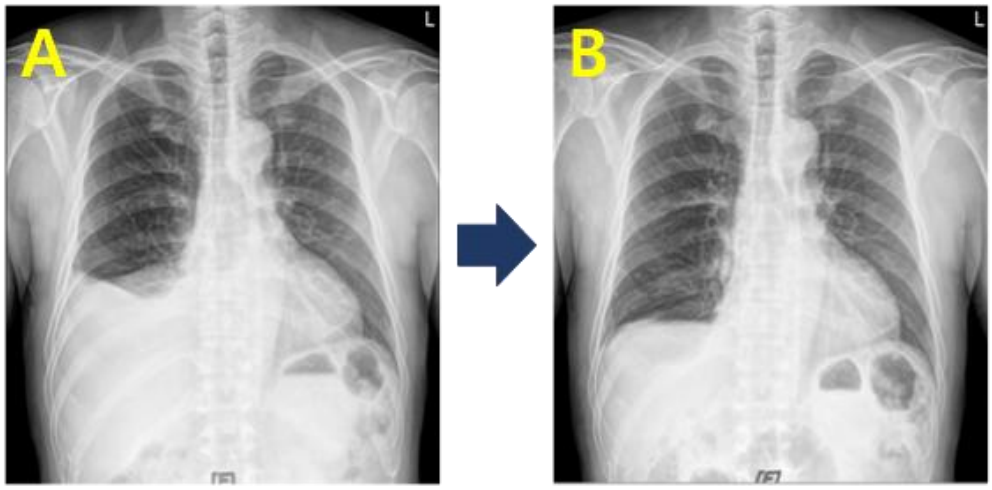


Figure 2. (A) When patient visited outpatient department, chest radiography showed right pleural effusion. (B) After therapeutic thoracentesis, right effusion was reduced.