

INGUINAL HERNATION IN TWO PATIENTS WITH CONTINUOUS AMBULATORY PERITONEAL DIALYSIS

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We report two cases of subacute inguinal swelling in uremic patients on continuous ambulatory peritoneal dialysis (CAPD). Computed tomography, scintigraphy demonstrated a mass in the right groin. Surgical repair of an inguinal hernia resulted in complete resolution of the inguinal swelling. Both patients could restart continuous ambulatory peritoneal dialysis, without complication.

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Key words : CAPD, Inguinal hernia, CT scan, Radioisotopic labeling, Polypropylene (PP) mesh and plug

INTRODUCTION

Continuous ambulatory peritoneal dialysis (CAPD) is a reliable and practical method of treatment for chronic renal failure. However, it may occasionally be complicated by abdominal and inguinal hernias. We report two patients maintained on CAPD who experienced gradual enlargement of a symptomatic inguinal hernia, which were surgically repaired successfully.

CASE REPORTS

Case 1

A 83-year-old man with advanced idiopathic renal failure who was undergoing hemodialysis was referred for insertion of a CAPD catheter. On thorough history-taking and physical examination, no physical abnormalities were found. Tenckhoff catheter swan neck type (JB-5) was placed, and the patient learned the regimen for CAPD without difficulty. With 1,500-ml exchanges four times daily, a serum creatinine level in the range of 12.1 to 13.4 mg/dl and a serum urea level in the range of 64.7 to 66.8 mg/dl were maintained. He was feeling well and able to carry out his normal daily activities.

About 100 days after insertion of the catheter, the patient noted a soft mass in his right groin for the first time. The right inguinal area enlarged gradually and the swelling became fluctuant. On physical examination inguinal hernia was discernible. He noted that the herniation was enlarged after each dialysis. By diagnosis of the right inguinal hernia,

he was admitted to our hospital for repair of a right inguinal hernia. He underwent hernioplasty with a polypropylene (PP) mesh and plug placement. Postoperative progress was good and he was transferred to hemodialysis from CAPD after the operation. However, 4 days after the operation he resumed CAPD by self-judgment. On the next day, he visited our hospital and received a medical examination. On physical examination no abnormal findings were detected in the lower abdomen or inguinal areas. Hemodialysis was performed 5 times after that. Peritoneal dialysis was resumed on the 16th day after the operation and was continued without recurrence of the inguinal hernia.

Case 2

A 73-year-old woman with chronic renal failure secondary to diabetic nephropathy was referred for insertion of a CAPD catheter. On physical examination, no hernia was discernible. Tenckhoff catheter swan neck type (JB-5) was inserted without complication. The patient learned the technique of CAPD. With 1,500-ml exchanges four times daily, a serum creatinine level in the range of 5.0 to 7.0 mg/dl and a serum urea level in the range of 55.3 to 67.3 mg/dl were maintained. The patient did well on this regimen for 8 months. Then she was seen in the emergency department with a 2-day history of right inguinal swelling that worsened after each dialysis exchange. On physical examination right inguinal hernia was found in the right groin. Abdominopelvic computed tomography (CT) was performed after instilling 100 cc of contrast medium into the

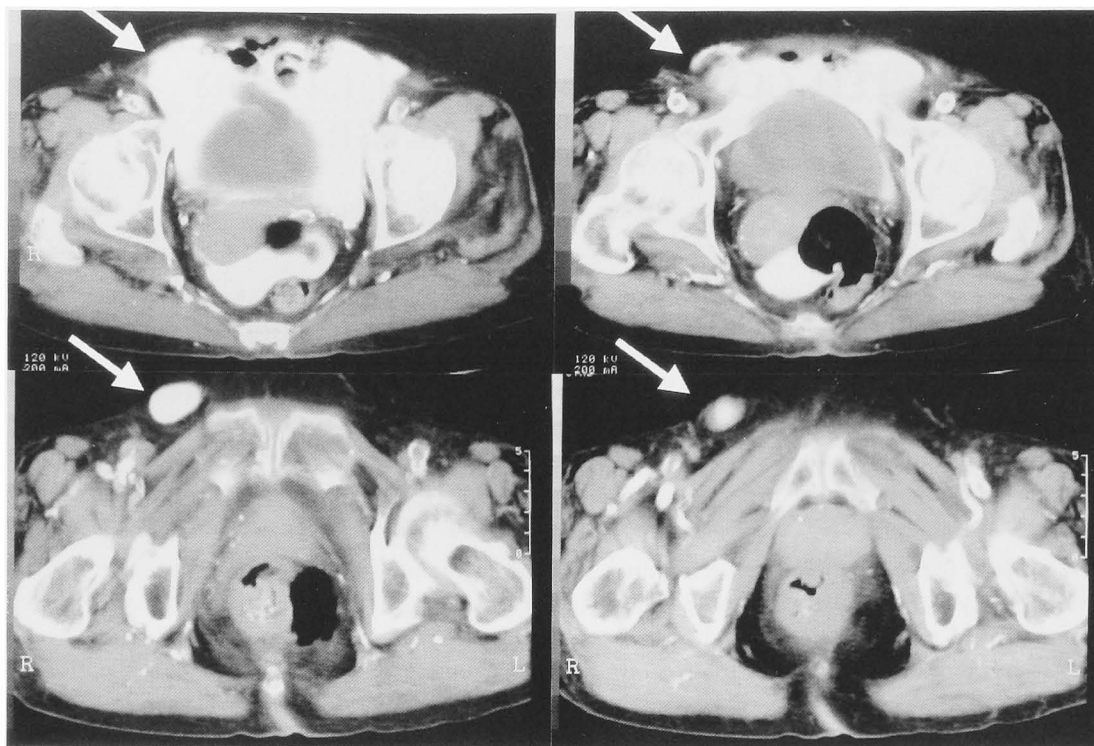


Fig. 1. Case 2. Computed tomography scan reveals passage of contrast medium through right inguinal canal (arrow).

Tenckhoff catheter along with 1.5 l of dialysate.

The CT revealed free passage of contrast medium into the right inguinal canal (Fig. 1). In addition to it, serial scans of the abdomen and groins were obtained by injection of technetium 99m MAA through the dialysis catheter (Fig. 2). The nuclear scan showed radioactivity concentrated in the right groin within 5 minutes, consistent with an inguinal

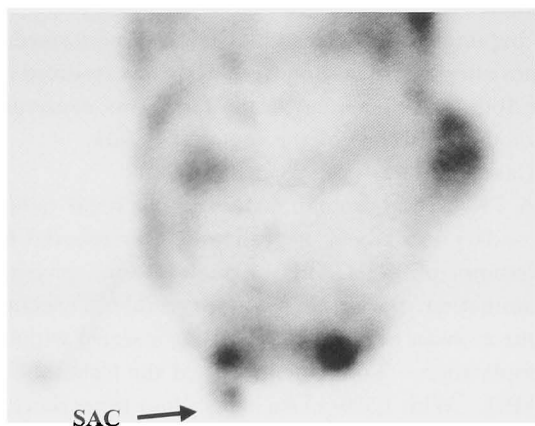


Fig. 2. Case 2. 1.5l of dialysate mixed with technetium 99m MAA sulfur colloid was instilled into the peritoneal cavity through the Tenckhoff catheter. There was free passage of activity into the peritoneal cavity with no evidence of loculation, leakage, or abnormal communication. There was a linear tract of activity through the right inguinal canal into the hernia sac (arrow), which persisted after drainage of the dialysate.

hernia; the CT scan also demonstrated a right inguinal hernial sac. The patient was admitted to our hospital for repair of a right inguinal hernia. She underwent hernioplasty with a polypropylene (PP) mesh and plug placement. The postoperative condition was good and CT scan was performed again after instilling contrast medium into the abdominal cavity through the Tenckhoff catheter along with 1.5 l of dialysate on the 4th day after the operation. No abnormal finding was detected. Peritoneal dialysis was resumed on the 6th day after the operation and was continued without recurrence of the inguinal hernia.

DISCUSSION

Continuous ambulatory peritoneal dialysis for end stage renal failure is a popular treatment. In the properly selected patient, this treatment is well tolerated with minimal complications, in which inguinal hernia is often mentioned. Although an inguinal hernia is not an absolute contraindication to placement of a CAPD catheter, it is well known that CAPD, especially with large volumes of dialysate, may gradually enlarge any inguinal hernial sac and exacerbate hernia symptoms¹⁾ For this reason, known inguinal hernias in patients who require CAPD should be repaired whenever the patient's medical status allows. CAPD is also a recognized cause of inguinal hernias in predisposed patients. In the two cases presented, the patients likely had a patent processus vaginalis or a small asymptomatic inguinal hernia at the time of catheter insertion.

With continuing CAPD, the sac enlarged gradually and was projected at last. Especially, in Case 2 the complication was indicated by the history of an initial subacute unilateral groin swelling and verified by CT using contrast medium which was instilled into the Tenckhoff catheter along with 1.5 l of dialysate. Radioisotopic labeling of the intraperitoneal fluid demonstrated radioactivity in the right inguinal hernia sac, indicating the usefulness as well as the CT scanning with contrast medium. Gupta et al. reported that radionuclide peritoneal scanning may detect the presence of abdominal and inguinal hernias even before they become clinically evident²⁾

For repairing hernias, polypropylene (PP) mesh and plug placement were chosen in the two patients. The use of the PP mesh and plug in the repair of hernia is widely accepted in non-end-stage renal failure patients³⁾. Its use for the repair of inguinal hernias in CAPD patients has been suggested in some reports⁴⁾. There is no achieved consensus about resumption time and method of CAPD after the hernioplasty^{1,2,4,5)}. In our cases, both patients were injected dialysate with contrast medium into the Tenckhoff catheter 4 days after the operation and no leakage was found in the repaired region. They were able to return to CAPD, again with standard volumes. Post-operative dialysate leak did not occur and there were no technical problems with dialysis thereafter.

In conclusion, the occurrence of inguinal swelling in a patient on CAPD suggests the existence of a patent

hernia sac. CT with peritoneal contrast instillation or radioisotopic labeling of the intraperitoneal fluid provides rapid, accurate localization of the defect leading to inguinal swelling. Surgical intervention with repair of the defect is necessary to eliminate swelling and prevent recurrence, and to continue CAPD without patient's discomfort.

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(迅速掲載)

CAPD 患者に発症した鼠径ヘルニアの 2 例

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CAPD 患者に発症した鼠径ヘルニア 2 例を経験したので報告する。症例 1 は 83 歳, 男性, CAPD 導入 100 日後に右鼠径部の膨隆を認め, 右鼠径ヘルニアの診断でヘルニア根治術を行った (PP メッシュプラグ法)。術前, 術後の透析については, 血液透析管理としていたが, 術後 4 日目に患者本人の自己判断にて, CAPD を施行し翌日当院に来院した。理学所見上, 下腹部および鼠径部に膨隆, 浮腫などを認めず, その後 5 回の血液透析を施行したのち, 術後 16 日目に

CAPD を再開した。再開後 1 年半経過したが, 再発を認めず, 現在も CAPD を継続している。

症例 2 は 73 歳, 女性, CAPD 導入 248 日目頃より右鼠径部の膨隆を自覚, 右鼠径ヘルニアの診断でヘルニア根治術を行った (PP メッシュプラグ法)。術後 6 日目より CAPD を再開した。術後 3 カ月経過したが, 再発を認めず, 現在も CAPD を継続している。

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