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Pericatheter Hernia of Peritoneal Dialysis, Leading to Acute Bowel Obstruction

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Abstract

Peritoneal dialysis has been a reliable alternative treatment for end-stage renal disease. However, it is not exempt of complications. In this manuscript, we describe an uncommon case of pericatheter herniation, complicated with small bowel obstruction, which required an emergent surgical procedure. CT scan was needed to reach an accurate diagnosis. Pericatheter hernia is a complication that must be suspected in patients undergoing peritoneal dialysis who show signs of small bowel obstruction.

Keywords: Peritoneal dialysis; Hernia; Small bowel obstruction; Incarceration

Introduction

Peritoneal dialysis (PD) has been a reliable alternative treatment for end-stage chronic renal disease (ESRD) since 1976 [1]. Approximately, 10% to 15% of patients with ESRD are on PD worldwide. Continuous ambulatory peritoneal dialysis (CAPD) has become an increasingly popular modality of renal replacement therapy.

Different procedures for catheter placement have been described, such as follows [2,3]:

- Bedside insertion of percutaneous implantation involving a trocar or guide wired that is inserted into the abdomen and advancement of the dialysis catheter into the abdomen without visualization
- Surgical insertion with an open dissection, in which a small dissection of the peritoneum allows for limited visualization of the peritoneal cavity
- Peritoneoscopic insertion, in which a Y-TEC peritoneoscope is inserted to inspect the peritoneal cavity, thus identifying the best location for the dialysis catheter
- Laparoscopic insertion, in which adhesiolysis or a more sophisticated surgery is possible during the catheter placement

CAPD has been proved to have many advantages. Nevertheless, complications such as catheter infection, leakage, obstruction, migration, and more rarely pericatheter herniation (PH), have been described [4,5].

This paper reports a case of PH leading to small bowel obstruction.

Case Report

Sixty-one-year-old female patient with no chronic morbidities other than hypertension and mild obesity (Body Mass Index of 28) reached ESRD due to arterial hypertension. The patient had history of abdominal surgeries such as a Caesarean section and appendectomy.

She started CAPD in September 2015, undergoing surgical insertion of a double-cuff titanium Tenckkoff catheter.

Almost one year later in August 2016, the patient was admitted to the surgery ward because of acute abdominal pain, constipation and vomits; symptoms for which she had previously consulted in several occasions, needing admittance at least once for bowel obstruction that presented favorable progress with conservative treatment. Clinical examination showed periumbilical lump, which could not be reduced by taxis. No significant findings were shown in the blood test nor in the X-ray, so a CT scan was requested.

CT scan showed incarcerated pericatheter herniation, conditioning retrograde small bowel distension (Figure 1).

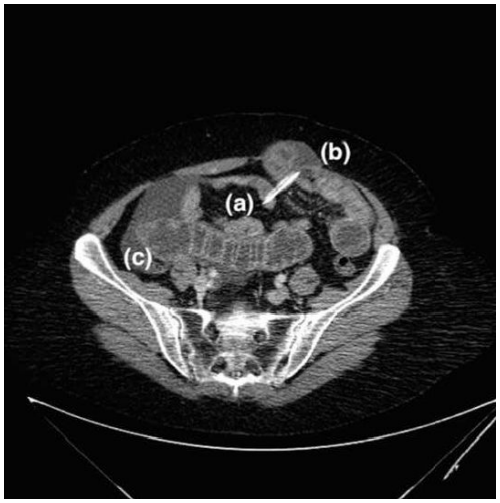

Figure 1: Contrast enhanced abdominal CT scan showing pericatheter herniation with signs of small bowel obstruction. (a) peritoneal dialysis catheter, (b) small bowel herniation (c) dilated proximal loops.

Considering the clinical and radiological findings, emergency surgery was indicated. A vertical incision was made over the previous surgery scar. No bowel perforation, nor ischemia was found. The hernia was reduced, the defect was repaired with loop polydioxanone

(PDS), and the catheter was moved to a different localization in the same abdominal quadrant.

The patient made an uneventful postoperative recovery and was switched to hemodialysis, reverting to CAPD in the end.

A month after undergoing CAPD, the catheter suffered obstruction, and the patient went through elective surgery in order to replace the catheter, and shift its entrance to the left quadrant of the abdomen.

Postoperative recovery was favorable, withstanding no complications, so the patient was discharged. During the first post-operative month, the patient returned to hemodialysis, going back to CAPD after recovery. No other episodes of catheter obstruction or other catheter complications have been reported during the follow-up, allowing the patient to continue CAPD.

Discussion

PH is an uncommon complication of CAPD and very few cases of incarcerated PH have been previously reported [6,7]. It usually occurs between 2 and 7 months after catheter insertion. In our patient, it appeared 11 months after the insertion. However, she had presented such symptoms previously in several occasions, even needing hospitalization.

Our patient presented mild obesity, and several previous abdominal surgeries although she did not suffer from diabetes or was under immunosuppressive treatment. Nevertheless, BMI and the antecedent of abdominal surgeries are known risk factors for ventral hernia.

Laparoscopic insertion may be an option for catheter placement in selected patients. However, published studies have reported longer operative time for laparoscopic insertion and no significant differences according to early and delayed complications, such as infection, dialysate leaks, catheter blockage or migration, pericannular bleeding and hernia [8].

Clinical symptoms of PH are the same as those of small bowel obstruction, making it difficult to discover the cause, especially in patients that have undergone previous surgeries, (adhesions, incisional hernias…).

This is the reason why we consider that an image study is essential in order to recognize this pathology. We think that the CT scan should be the preferred choice in these patients, as it shows the location of the defect in the abdominal wall, and the catheter pathway inside the abdominal cavity, identifying whether the catheter takes part in the hernia.

One of the surgical techniques for reparation of PH, consists of reducing the hernia, repairing the defect and relocating the placement of the catheter to a different quadrant of the abdomen, in order to avoid obstruction.

It has been suggested that waiting until after wound healing to begin CAPD might make a difference, as starting CAPD immediately might expose the fresh pathway to an increased abdominal pressure [7].

In conclusion, PH consists of a rare but important complication of PD, which has to be considered as a possible diagnosis in patients undergoing PD, enabling the administration of early treatment, avoiding complications such as ischemia and perforation.

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