Fallopian tube: An uncommon cause of recurrent peritoneal dialysis catheter occlusion – A case report and review of literature

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Abstract

Mechanical occlusion of the peritoneal catheter through the fallopian tube is uncommon. A case of recurrent fallopian tube occlusion is reported, and the literature is reviewed.

Key words: Peritoneal dialysis. Peritoneal catheter malfunction. Fallopian tube. Ultrafiltration failure.

Trompa de Falopio: una causa infrecuente de oclusión recurrente del catéter peritoneal. Reporte de caso y revisión de la literatura

Resumen

La oclusión mecánica del catéter peritoneal por la trompa de Falopio es infrecuente. Se reporta un caso de oclusión recurrente por trompa de Falopio y se revisa la literatura.

Palabras clave: Diálisis peritoneal. Mal funcionamiento del catéter peritoneal. Trompa de Falopio. Fallo de ultrafiltración.

Introduction

Mechanical and infectious complications are the most frequent causes of discontinuation of peritoneal dialysis (PD) therapy. Timely diagnosis and treatment decrease the technique's interruption rate. Common causes of catheter malfunction include catheter displacement, omental or bowel wrapping, and fibrin clots. Less commonly, other intraperitoneal structures have been reported to lead to obstruction. We report a patient with recurrent episodes of peritoneal catheter (PC) malfunction as a result of obstruction by the fallopian tube.

Case report

A 32-year-old female with chronic kidney disease secondary to diabetic nephropathy underwent laparoscopic abdominal PC insertion (swan neck, two cuffs, and coiled) in February 2019. She underwent CAPD training and started 4 weeks later with excellent dialysate inflow and outflow. Two months later, inflow and outflow slowed down and then stopped. Abdominal X-ray did not demonstrate any kinking or displacement. There was no improvement neither with adequate catharsis nor when streptokinase was

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instilled. She underwent diagnostic laparoscopy which revealed that the PC was occluded by the fimbriae of the left Fallopian tube (Fig. 1A). The catheter was freed from the fimbriae and demonstrated excellent function. PD was restarted without any further catheter problems. She presented 10 months later with catheter malfunction, difficulty, and pain during the inflow without drainage. Diagnostic laparoscopy revealed that the right Fallopian tube fimbriae were occluding the catheter orifices (Fig. 1B). The catheter was released (Fig. 1C) and positioned at the bottom of the Douglas sac. The DPA technique was restarted in the immediate post-operative period without any further malfunction.

Discussion

Mechanical complications are the cause of PD failure and transfer to hemodialysis in up to 20% of cases¹. Constipation with distended colon and PC block is the most prevalent causes of catheter malfunction. Obstruction of the catheter is commonly related to blockage by fibrin thrombi, catheter migration or malposition, or omental adherence. Other causes such as extrinsic compression (bladder) or entrapment by intraperitoneal structures such as the appendix and fallopian tube are possible, but regarded as a rare occurrence. The entrapment by the fimbriae of the Fallopian tube has been described in previous reports¹⁻⁹. Table 1 details characteristics of the patients, clinical manifestations, and resolution of the previous reported cases (Table 1).

Before the advent of laparoscopic visualization of poorly functioning catheters, obstruction of the catheter by oviduct fimbriae probably occurred more commonly than was recognized⁸. The ultimate cause of this complication is unknown. Factors such as bioincompatible materials⁵, motions of oviductal structures during the days before ovulation, or the size of children's organs in relation to the size of the catheter have been proposed to explain the possible cause of this unusual catheter obstruction³. It has been suggested that oviductal structures can present motility alterations in the uremic environment, favoring catheter migration and occlusion².

There are no preventive measures or a definitive solution for this complication. Two possible strategies have been postulated to prevent recurrence: salpingopexy (fixation of the oviduct) and salpingectomy (resection of the oviduct). Salpingectomy may be indicated in postmenopausal women who have

Figure 1. **A:** Peritoneal catheter was occluded by the fimbriae of the left Fallopian tube. **B:** In the second episode, the right Fallopian tube fimbriae were occluding the catheter orifices. **C:** The catheter was released and positioned at the bottom of the Douglas sac.

recurrences in catheter obstruction despite salpingopexy⁶. It was not proposed as a therapeutic strategy in the present case since she was a nulliparous woman.

Key teaching points

- Obstruction of the peritoneal catheter by the fallopian tube, although infrequent, is possible
- Should be suspected when abrupt obstruction occurs in the inflow and outflow, associated or not with pain, and with the catheter correctly positioned on the abdominal X-ray
- Laparoscopic evaluation is necessary for an adequate diagnosis and targeted treatment
- Repositioning of the oviduct is usually sufficient to solve the complication
- There is no consensus on definitive therapeutic behavior when there are recurrences
- In recurrences, salpingopexy can be considered, reserving salpingectomy for postmenopausal women.

Table 1. Details characteristics of the patients, clinical manifestations, and resolution of the previous reported cases

Author	Year of report	Patients (n)	Age (y)	Clinical manifestations	PC type	Fallopian tube side	Treatment (in order)	Recurrence
Harrison et al. ¹	1988	1	29	IF (R)-P	NDA	R	LPT/FR	NO
Abidin et al. ²	1990	1	49	DD	TSC	R	LPT/FR	NO
Borghol and Alrabeeah ³	1996	1	1	DD	TDCs	R	NDA	NO
Uchiyama et al. ⁴	2001	1	51	DD	NDA	NDA	LPC/FR	NO
Moreiras-Plaza and Cáceres-Alvarado ⁵	2004	1	45	DD, IF (L)-P	NDA	L	LPC/PS	NO
Klein et al. ⁶	2003	1	56	DD	TDCc	R	LPC/TS	NO
Sinha and Dastidar ⁷	2011	1	2	DD	NDA	L	LPC/PF	NO
Gudsoorkar et al. ⁸	2016	1	32	DD	NDA	L (1)/L (2)	LPC/FR	YES
		1	23	DD	NDA	R	LPC/FR	NO
		1	57	DD	NDA	R	LPC/FR	NO
		1	79	DD	NDA	R	LPC/FR	NO
Cuxart et al. ⁹	2019	1	62		NDA	L	LPC/FR	NO
Present patient	2020	1	32	DD	TDCc	L (1)/R (2)	LPC/FR	YES

PC: peritoneal catheter; R: right; L: left; NDA: no data available; DD: difficulty in dialysate drainage; IF-P: iliac fosse (right R or left L) point; LPT: laparotomy; LPC: laparoscopy; FR: fimbriae removed; PS: partial (left L or right R) salpingectomy; TS: total (left L or right R) salpingectomy; PF: partial fimbriectomy. Tenckhoff PC simple cuff (TSC) or double cuff (TDC), straight (s) or coil (c).

Conflicts of interest

The authors declare that does not exist conflicts of interest.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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