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HIGH GLUCOSE CONTENT GENITOURINARY FLUID IN REPEATED PERITONITIS (CAPD) PATIENT

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ABSTRACT

We are describing a case of an adult patient with end-stage kidney failure (ESKF) who was on continuous ambulatory peritoneal dialysis (CAPD), presented with colourless fluid flow per vaginal due to peritoneal-fallopian tube fistula, a rare complication of repeated peritonitis. We discuss on the approach taken for diagnosis and management in this case

INTRODUCTION

Patients with end stage kidney failure (ESKF) needs renal replacement therapy, either by haemodialysis, peritoneal dialysis or renal transplant to improve long term survival. Continuous ambulatory peritoneal dialysis (CAPD) is a sustainable long-term dialysis option for patients with ESKF owing to its safety profile and cost-effectiveness. Common complications arising from CAPD are peritonitis, pain, flow restriction and exit site leakage. Fistula communication is a rare complication in peritoneal dialysis patients with peritonitis.

CASE REPORT

Our patient is a 22 years old lady with past medical history of systemic lupus erythematosus (SLE) with lupus nephritis complicated with ESKF, was on CAPD since December 2021. She had an episode of pseudomonas peritonitis in May 2022 which was treated with a course of intraperitoneal (IP) antibiotics, and she recovered well. In July 2022, she reported a new onset of fever, abdominal pain and cloudy peritoneal fluid effluent of two weeks duration. Peritoneal fluid culture grew pseudomonas aeruginosa again. She was treated for repeated peritonitis with IP antibiotics planned for total 28 days with clinical improvement. However, she developed right sided abdominal pain associated with per vaginal fluid flow in ward on day 21 of treatment. The vaginal fluid was clear and non-foul smelling. Bedside glucose dipstick done showed raise glucose level, raising concern of peritoneal dialysis (PD) fluid leak. Pelvic examination did not reveal an opening or overt fistula in the vaginal vault.

A computed tomography (CT) abdomen and pelvis was performed which showed a right lumbar intra-abdominal collection (3.5cm x 12.3cm x 3.8cm) extending to mid pelvis with Tenckhoff catheter in situ, right hydrosalpinx with inflammatory changes and fistulous communication with pelvis collection. It appeared that the peritoneal dialysis (PD) dialysate was travelling from peritoneum through the fistula to fallopian tube and exit through the vagina. CAPD was withhold to reduce intra-abdominal fluid collection and stop the PD fluid leak. Subsequently, Tenckhoff catheter was removed surgically, and the tip was noted to have dense adhesion at its surrounding edges. IP antibiotics were changed to oral antibiotics to complete the remaining course. She was transitioned to regular haemodialysis via peripheral arteriovenous fistula without any issues, and no recurrence of peritonitis and per vaginal fluid flow.

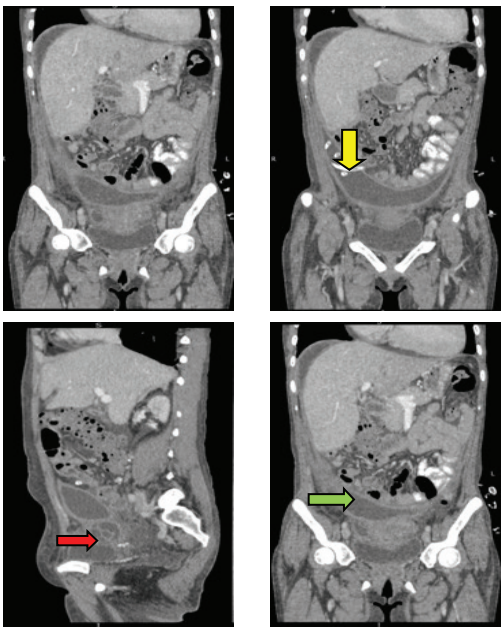

Figure 1 showed the abdominal computed tomography. Intra-abdominal collection (white arrow), Tenckhoff catheter (yellow arrow), hydrosalpinx (red arrow) and fistulous communication between hydrosalpinx and pelvis collection (green arrow).

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DISCUSSION

Peritoneal dialysis (PD)-associated peritonitis is a common and serious complication of PD. It increases the morbidity, mortality and healthcare cost. It affects the peritoneal membrane and may cause peritoneal adhesions or fistula formation, resulting in failure of peritoneal dialysis which necessitate transition to hemodialysis2. This case demonstrates repeated PD related peritonitis with same effluent cultures (pseudomonas aeruginosa) complicating the CAPD. Pseudomonas peritonitis is often catheter related and may form biofilm that leads to treatment failure and high relapse rate3, 4.

International Society of Peritoneal Dialysis (ISPD) guidelines5 recommend removal of infected catheter and use of two antipseudomonal antibiotics for at least two weeks after catheter removal or 3 weeks when the catheter is not removed. In this case, she was treated with IP Tazocin (Piperacillin, Tazobactam) and Amikacin for total 3 weeks for the first episode of peritonitis and catheter was not removed. During the second episode of peritonitis, she was initially given IP Tazocin and was later deescalated in view of culture sensitivity to IP ceftazidime with oral ciprofloxacin for total 22 days. However, she was complicated with PD fluid leak from vagina due to peritoneal-fallopian tube fistula on day 21 treatment and thus catheter was removed.

PD fluid leakage is usually a non-infectious complication of CAPD. It can leak externally through the exit site, or internally through different communicating anatomical compartments. Bedside glucose dipstick can be used to diagnose PD fluid as high glucose content is a hallmark of PD fluid. The risk factors of PD fluid leak are related to the technique of PD catheter insertion, the way PD is initiated, and weakness of the abdominal wall such as in advanced age, polycystic kidney disease or high body mass index. In this case, the PD fluid leak is most likely due to the repeated peritonitis, putting her at risk of fistula formation.

Non-infectious related fistula is commonly formed in between peritoneum and the pleura, or between the peritoneum and the abdominal wall, or fistulous connections with bladder, bowel wall, fallopian tube or uterovaginal vault. Other presentations of PD fluid leak include vaginal discharge or dialysate diarrhoea. The treatment is to keep abdomen dry by withholding PD and transition to haemodialysis temporary or permanently. Surgical management such as laparotomy and surgical correction of perforation may be needed in severe cases.

In our case, a rare entity and the peritoneal-fallopian tube fistula likely occurred secondary to repeated pseudomonas peritonitis.

CONCLUSION:

Peritoneal dialysis (PD) associated peritonitis is a common and serious complication of PD. It may cause peritoneal adhesions or fistula formation, resulting in failure of peritoneal dialysis and transition to haemodialysis. Bedside glucose dipstick can be used to diagnose PD fluid as high glucose content of the fluid is a hallmark of PD fluid.

ACKNOWLEDGEMENT:

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