Intraperitoneal Hematoma As Cause Of Technique Failure In A CAPD Patient

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Abstract: A 63 years old lady has uneventful course on CAPD for 9 years except for 3 episodes of peritonitis. The last episode of peritonitis was refractory necessitating catheter removal. An attempt was made to reinitiate PD after eight weeks. However this failed due to intraperitoneal hematoma leading to technique failure.

Key words: Peritonitis, intraperitoneal hematoma

Introduction

Continuous ambulatory peritoneal dialysis (CAPD) is an established form of renal replacement therapy for more than a decade in India. It has been increasingly used as an alternative to hemodialysis because of potential advantages of fewer symptoms of hemodynamic instability during dialysis, resulting in better tolerance by patient with ischemic heart disease and more liberal fluid, sodium and potassium intake in CAPD patients (1).

Although, peritonitis is still the major cause of technique failure in these patients (2). An important aspect of treatment success in CAPD is the non infectious complications of peritoneal dialysis. These non infectious complications are obstruction, malposition of catheter, hernia and dialysate leakage. These complications are also responsible for treatment failure of these patients on CAPD. The catheter related complications like post Tenckhoff catheter insertion bleeding and intra abdominal hematoma is a rare cause of treatment failure in CAPD patients(3). We report a case of technique failure following intraperitoneal hematoma after catheter insertion in a patient who continued CAPD for 9 years.

Case Report

A 63 years old lady had developed end stage renal disease due to hypertensive nephrosclerosis. She was initiated on CAPD on 23rd June 2000 after break in period of 2 weeks. Her transport characteristic was high average transporter and weekly Kt/V was 1.9. She had uneventful course on CAPD till 2004. She developed first episodes of peritonitis in December 2004 which resolved with intraperitoneal antibiotic cefazolin and tobramycin. She again had second episode of peritonitis in November 2006 which also resolved with intraperitoneal administration of antibiotics at home. Her weekly Kt/V following 2nd episode of peritonitis was 1.64 and her general well being was fine. However, the lady had developed 3rd episode of peritonitis on 5th December 2008 and she had been started empirical intraperitoneal cefazolin and tobramycin at home. But there was no response to this first line antibiotic and she presented to us with turbid effluent for 7 days, pain abdomen for 5 days, and fever for 3 days. She had rebound tenderness on palpation. Total leukocyte count of PD fluid was 1800 cells/cmm and PD fluid culture was sterile. She had been started on Vancomycin, cefazidime intraperitoneally and pipercillin tazobactum intravenously. But PD effluent was still cloudy and peritonitis did not respond to antibiotics. Subsequently CAPD catheter was removed on 21st December 2008 and she had been shifted to temporary maintenance hemodialysis but patient was keen to continue on CAPD.

She was readmitted for catheter insertion which was done on 24th February 2009 laparoscopically. She had intraperitoneal adhesions and omentum was adherent to abdominal wall. Omentum was separated and omentectomy was done. CAPD catheter was inserted. Post operative flushing with 2 liters of PD fluid showed good inflow and outflow but the outflow was hemorrhagic. The patient showed a fall in hemoglobin from 8.1g/dl pre operative period to 5.7 g/dl post operative period 8th day. Four units of packed RBC (PRBC) was transfused post operatively. On post op day 15th patient developed pain...
in abdomen associated with bilious vomiting. Examination revealed an intra abdominal lump in left epigastrium and umbilical region and absent bowel sound. USG abdomen showed a large heteroechoic multiseptated lesion extending from epigastric region to infraumbilical region more on left side and another septated collection was noted in subhepatic region of approximately 80 cc volumes. A CT Abdomen was done which showed a large intra abdominal collection of size 22.5cm X 8.5 cm X 12 cm extending from sub diaphragmatic region to pelvis, anteriorly over stomach with CAPD catheter tip in the collection (Figure 1). A CT angiography of abdomen was also done which did not show any evidence of abdominal aneurysm or active bleed. In consultation with surgical gastroenterology, patient was managed conservatively by keeping her nil orally with continuous ryles tube drainage, and parenteral nutrition until bowel sounds became normal on 20th day post operative day. She has been advised for catheter removal but the patient was not willing for the same. Meanwhile a left Brachial AV fistula was created and CAPD catheter was removed on 4th April 2009 once the family consented. The general condition of patient showed improvement with size of intra abdominal lump showing a decreasing trend on clinical examination. The Patient was tolerating MHD sessions well and was discharged on 10th April 2009 in a stable condition. She has been shifted on maintenance hemodialysis but she had sudden death at home after 10 days.

Discussion

This long surviving case of CAPD has developed technique failure consequent upon peritonitis, catheter removal, reinsertion of catheter and intra abdominal hematoma after surgery. In a study by Stefano R et al has observed 274 catheter related complications: 182 catheter infections (exit-site and/or tunnel infection), 23 leakages, 19 obstructions, 19 cuff extrusions, 14 dislocations and 6 hemoperitoneum. The incidence of hemoperitoneum was 2.18% (4). The complications following CAPD catheter insertion can be classified as early complications, that occur within 30 days of CAPD insertion and includes wound hematoma/infection, malposition/poor flow, exit site infection, early peritonitis and pericatheter leak and Intraperitoneal hematoma / hemoperitoneum while late complications are those occurring after 30 days of Tenckhoff catheter insertion and include CAPD peritonitis, catheter blockage/poor flow and scrotal swelling (5). This lady has uneventful course on CAPD for 9 years except for 3 episodes of peritonitis. The last episode of peritonitis was refractory and subsequent series of complication lead to technique failure. Peritonitis continues to be a serious complication of patients on CAPD and is one of the major cause for hospitalization of these patients accounting for 23% of admission in the CANUSA study (6). Peritonitis is the leading cause for technique failure and catheter loss and patient with frequent peritonitis are at increased risk of dying, independent of other factors (7). Catheter removal for resolution of peritonitis is required in 10.2% at our center and catheter reinsertion becomes possible only in 13.0% of these patients (8). Published guidelines suggest that after an episode of severe peritonitis that requires Tenckhoff catheter removal, peritoneal dialysis can be resumed after a minimum of 3 week (9). This lady has been reinserted catheter after 8 weeks of catheter removal. In a study from Hong Kong, 100 patients in whom CAPD catheter was reinserted following refractory peritonitis, CAPD could only be re instituted in 51 patients only while 49 remaining had been shifted to maintenance Hemodialysis due to technique failure (10). After resumption of CAPD there was a significant decline in net ultrafiltration in the success group and the overall technique survival in success group at 24 months was 30.8%. The study concluded that after an episode of refractory peritonitis requiring catheter removal only a small group of patient can be successfully maintained on peritoneal dialysis. Interestingly there was no significant difference in the baseline characteristics and the etiology of the peritonitis in the two groups (10). In an Italian study by Stefano R et al, infection (78.3%), obstruction (10.4%), malposition (3.8%), cuff extrusion (2.8%), leakage (1.9%), bowel incarceration (1.9%) and bowel infarction (0.9%) were the mentioned causes of CAPD catheter removal. Hemoperitoneum was not mentioned as a cause of catheter removal in this study (4). Our patient has successful reinsertion of catheter but hemoperitoneum lead to removal of catheter.

This patient was keen to continue on peritoneal dialysis despite refractory peritonitis and catheter removal. Now, CAPD has been increasingly used as an alternative to hemodialysis for treatment of End Stage Renal Disease (11,12). CAPD has both medical and social benefits with optimal of blood pressure control, slow and sustained ultrafiltration, ability of the patient to stay at home and increase ability to enjoy normal activities.

References:


