Peritoneal Dialysis in Extremely Obese Patient From Palestine, A Case Report

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Introduction. The incidence of ESRD is increasing dramatically and the majority of patients are commenced to hemodialysis (HD) or peritoneal dialysis (PD) due to the long waiting time for renal transplantation. PD has comparable outcomes with HD but many barriers limit its utilization. Obesity is considered among the barriers and this was attributed to its related complications.
Case Report. A 50-year-old male patient with ESRD presented to our hospital for PD. He was extremely obese (BMI = 44.2 kg/m^2). The case was discussed between the nephrology, surgical and nursing team, and the decision was made to proceed towards PD.
Conclusion. Obesity should not impede the beneficial effects of PD. The obstacles of obesity, which we faced; could be overcome with the collaboration between a highly qualified multidisciplinary team.

Keywords. peritoneal dialysis, obesity, end-stage renal disease

IJKD 2020;14:315-7
www.ijkd.org

Case Report

ABBREVIATIONS

ESRD, end-Stage Renal Disease; CDC, the centers for disease control and prevention; PD, peritoneal dialysis; HD, hemodialysis; BMI, body mass index; PO, per OS; IP, intra-peritoneally; US, united states.

INTRODUCTION

The incidence of end-Stage renal disease (ESRD) has increased dramatically, in 1996; the incidence in the US was 77,003 (compared with 124,675 in 2016).[1] Hemodialysis (HD) and peritoneal dialysis (PD) vary significantly in terms of patient lifestyle, employment, and interaction with the healthcare system.[2] The principles of peritoneal dialysis were first described by Popovich and his colleagues in 1976.[4,5] Patients on PD have comparable clinical outcomes, and even better; than patients on HD and their survival rate is equivalent to the center-based HD.[4,6,7] However, many barriers limit the utilization of PD and Obesity is considered among them.[8,9] One study published in 2003 showed that the most nephrologists in the US do not recommend PD for ESRD Patients weighing 200 pounds or more.[2]

This case report presents a patient with ESRD with a BMI of 44.2 kg/m^2 who underwent successful treatment with PD, by collaboration between a multidisciplinary team.

CASE REPORT

A 50-year-old man presented to our hospital for renal replacement therapy via peritoneal dialysis. His past medical history includes type 2 DM and HTN. The patient was tolerating moderate exercise until 4 months before admission, when he started experiencing progressively increasing lower limb swelling, nausea, exercise-induced dyspnea as well as orthopnea.

Laboratory results at admission: hemoglobin = 8 g/dL, K = 3.7 mEq/L, PH = 7.10, PCO_2 = 26.2 mmHg, PO_2 = 85 mmHg, HCO_3^- = 11.3 mEq/L, albumin = 2.9 g/dL, BUN = 85.8 g/dL, and Cr = 12.4 mg/dL.

The case was discussed between the nephrologists, surgeons, and nurse staff; and the decision was made to proceed towards doing PD as a life-saving

procedure given that the patient refused HD initially. Under local anesthesia, Tenckhoff-swan neck curl peritoneal catheter, 62.5 cm in length, double cuff was inserted smoothly. Two days following the PD catheter insertion, the uremic symptoms worsened dramatically and the patient became more distressed so the decision was to do an urgent session of hemodialysis. After four sessions of hemodialysis, patient improved and was kept in the peritoneal ward for the whole day for educational purposes.

The patient experienced two episodes of peritoneal leak and the PD was discontinued for 14 days. After 14 days, the leak stopped and the exchanges went smoothly when the patient suddenly started complaining of abdominal pain and a cloudy fluid coming out with exchanges. A diagnosis of peritonitis was established and the patient was treated with IP antibiotics for 14 days.

His dry weight was set to 119 kg after 3 months with 4 exchanges/d (two with 2.27% dextrose and two with 4.5% dextrose). Dwell time was considered 4 hours.

DISCUSSION

Peritoneal dialysis is one of two major modalities to treat ESRD patients waiting or not amenable for transplantation.[2] Despite the wide variety of PD use over the world (72% in Hong Kong, 9.7% in the US, and 4% in Sudan)[4]. Contraindications for PD include: obesity, severe protein malnutrition, polycystic kidney disease, lack of the integrity of the abdominal wall, and massive adhesions.[8,11] Obesity is our main concern. It is thought that obesity and increased BMI are associated with increased risk of catheter leak, inadequate clearance, infectious processes, and peritonitis.[11] Many studies have reported the paradoxical relationship between obesity and mortality among dialysis patients, a term referred to as "Obesity Paradox" or "reverse epidemiology".[12] According to the CDC, BMI of more than 40 Kg/m^2 is defined as extreme or severe obesity.[14]

The arguments about the possibility to proceed towards PD among obese patients are diverse as some studies assumed obesity as a relative contraindication to PD,[11,16] a barrier to PD[8] or not a contraindication.[15] We have faced most of the complications related to obesity but we were able to deal with them.

CONCLUSION

Peritoneal dialysis is a highly valuable modality of treatment for end-stage renal disease patients. Being overweight should not impede the beneficial effects of PD for patients who are willing to do so, as it confers them the ability to be engaged deeper in the community. The previous recommendations that considered obesity as a contraindication for PD are attributed to technical problems related to catheter insertion and possible future complications that can be handled if the patient was transferred to a highly qualified center.

DECLARATIONS

Consent for Publication

No images or other personal data that might compromise the anonymity of the patient. Written consent was obtained from the patient for publication of this Case report.

Ethical Approval and Consent to Participate

Full verbal and written consent has been obtained from patient himself.

Competing Interests

The authors report no conflict of interest.

Availability of Data and Materials

Data are all contained within the case report. The raw data are available by the corresponding author when requested.

FUNDING

No funding was received for conducting the study.

AUTHORS' CONTRIBUTIONS

ZH, MT, EK, EA, and OS designed the study and its protocol.

OS, HN, and KJ collected the data.

All authors managed follow-up of the patient.

All authors reviewed the manuscript critically for important intellectual content.

All authors read and approved the final manuscript for submission.

ACKNOWLEDGMENTS

We thank the nursing staff in the hemodialysis unit at An-Najah National University Hospital for making the study possible.

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Received November 2019
Revised January 2020
Accepted March 2020