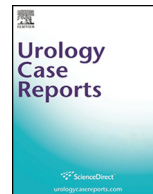




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Trauma and reconstruction

An unusual case of lymphadenopathy due to Continuous Ambulatory Peritoneal Dialysis becomes a challenge during renal transplantation[☆]



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ABSTRACT

A 31-year-old male was diagnosed with Stage V Chronic Kidney Disease and treated with Continuous Ambulatory Peritoneal Dialysis (CAPD) for five years before agreeing to a renal transplantation. Prior to the procedure he suffered from lymphadenopathy due to peritonitis. This complication became an obstacle as it prevented vascular access to the iliac artery and vein. An extensive lymphadenectomy had to be performed before continuing with the procedure. Nevertheless, the procedure was carried out successfully. Iliac lymphadenopathy as a result of peritonitis due to CAPD could become a challenge during renal transplantation if it hindered vascular access during anastomosis.

Introduction

End-stage renal disease (ESRD) is one of the leading causes of morbidity and mortality in the world. The rising rate of comorbidities such as hypertension, diabetes mellitus, and dyslipidemia accompanied by a higher life expectancy of the population also contribute to the therapy's rising demand.¹ Peritoneal dialysis is pushed as one of the major renal replacement therapy to increase the quality of life of patients. Continuous Ambulatory Peritoneal Dialysis (CAPD) or home dialysis limits the patient's constant hospital visits as opposed to regular in-center hemodialysis.² However, peritoneal dialysis is often followed by several complications like peritonitis, hernia formation, leaks including pleural effusion, hypokalemia, and back pain. In some patients, some unusual generalized and local lymphadenopathy complications due to infection have been reported in the past.³ Nevertheless, renal transplantation offers a better solution regarding survival rate, complications, and quality of life.⁴ As it is theoretically a better alternative, the option is always suggested to willing patients, especially those with complications following dialysis, even with complications which could cause difficulties during the procedure. In this report, we present a rare case of renal transplantation performed on a 31 year-old-male with ESRD who had been previously treated with CAPD for 5 years with multiple complications including an unusual finding of lymphadenopathy associated with previous peritonitis complication which created challenge during the transplantation.

Case presentation

A 31 year-old-male came to a general practitioner with a chief complaint of flank pain in 2013. The patient was only given painkillers. Instead of feeling better, the patient began to feel weak and nauseous. He was taken to the hospital afterward to be further examined. His kidney function test showed a severe decrease in function, and he was diagnosed with Stage V Chronic Kidney Disease. The patient had a history of heavy drinking of liquor mixed with undisclosed illegal toxic substances since junior high school. He was first treated with regular hemodialysis with Brachiocephalic Arteriovenous shunt access. In regard to his age, the physician suggested the use of Continuous Ambulatory Peritoneal Dialysis (CAPD). He underwent two insertions and two repairs due to multiple malfunctions and peritonitis complications which occurred two times during the course of the treatment. After five years of relying on CAPD, the patient agreed to an alternative solution, Renal Transplantation. The instrument was removed two months before the procedure due to peritonitis, which was treated successfully prior to the procedure. Pre-transplant evaluations and investigations were performed months before the operation (Fig. 1).

An oblique Gibson incision was made in the lower quadrant beginning in the midline extending upward paralleling the inguinal ligament. The fascia and external oblique muscle were then divided. The internal oblique and transverse muscles were divided to expose the peritoneum. Spermatic cord was identified and retracted laterally. The

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Fig. 1. The patient's multiple abdominal scar tissues after multiple CAPD Insertions, taken before the procedure.

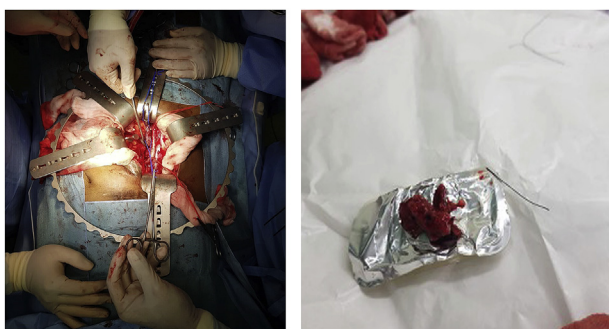


Fig. 2. Extensive Lymphadenectomy During the Procedure (Left) and Iliac Lymph Node Tissue Taken from the lymphadenectomy (Right).

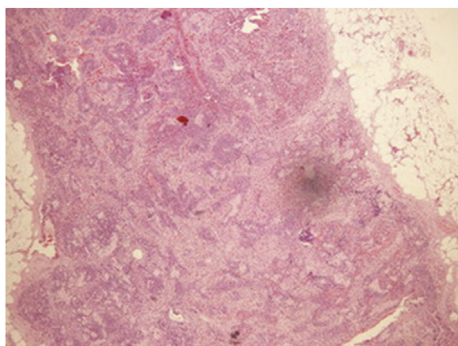


Fig. 3. Histopathological Examination of the patient's Iliac lymph node showing reactive hyperplasia and sinus histiocytosis with hyalinization.

peritoneum was swept upward to expose the iliac vascular system. Unfortunately, an iliac lymphadenopathy associated to the previous peritonitis complication caused a problem during the procedure as it surrounded the iliac artery and vein, thus preventing vascular access. The operator attempted to proceed with the procedure, however it was difficult to perform anastomosis. The team decided to perform an extensive lymph node dissection before proceeding with the procedure (Fig. 2). The tissue biopsy of the lymph node resulted in a sinus histiocytosis with hyalinization indicating a benign reactive hyperplasia as a response to the infectious peritonitis (Fig. 3). Several minutes after the anastomosis of renal and ureteral arteries, the donated kidney was revascularized. Ureteroneocystostomy was performed as a form of urinary tract reconstruction using the Lich-Gregoir technique. The bladder's mucosa layer was incised and the spatulated ureter was anastomosed to

the mucosal layer. The seromuscular layer was closed over the ureter to create a submuscular tunnel which acts as an anti-reflux mechanism. Clear yellowish urine production was seen after the procedure.

On the 1st day after the surgery, urine production of 1400 ml of clear yellowish urine could be seen. Wound care was performed daily, fluid input and output were also evaluated meticulously. As expected, on the 10th day, a bilateral hydrocele occurred due to the lymph node removal. On the 15th day, the urinary catheter was removed. The surgical wound healed normally without any fluid leakage or drainage from the site. The patient was discharged from the hospital with restored kidney function and no further complications.

Discussion

Home dialysis with CAPD increases the overall quality of life by allowing more mobility and lower cost compared to regular in-center-dialysis. It is unfortunately often followed with an abundance of significant complications.⁴ In this report, the patient had undergone several CAPD insertions in 5 years due to multiple complications, such as numerous malfunctions, partial obstructive ileus, and lastly peritonitis. Throughout the treatment, it was clear that CAPD is not the best solution for this patient's condition. Prior to the procedure, the patient had a massive pelvic lymphadenopathy due to previous peritonitis complications. Lymphadenopathy as an immune response to peritonitis as a complication of CAPD has been reported in the past.³ After the patient's several complications of peritonitis, lymphadenopathy was expected. However, a case of iliac lymphadenopathy which surrounded the iliac artery and vein during a renal transplantation has never been reported; hence it was not expected. During the procedure, it was impossible to gain access to the iliac artery due to the size of the lymphadenopathy surrounding the area. Thus, the operator could not proceed with the operation without resolving the obstacle. The team decided to perform an extensive lymphadenectomy which brought risks that could jeopardize the entire procedure. The anastomosis could have been unsuccessful due to possible vascular damage. Moreover, the duration of the operation was increased significantly by performing the lymphadenectomy. Nevertheless, the procedure was carried out successfully. The lymph node histopathological examination resulted in a reactive hyperplasia indicating an immune response towards the peritonitis. The risk of several postoperative complications like ureteral leakage, ureteral stenosis, and vesicoureteral reflux which are mostly related to ischemia is higher in this patient due to the anastomosis challenge during the operation.⁵

None of these high-risk complications occurred in the patient. An expected complication, bilateral hydrocele, due to the lymphadenectomy occurred, which was promptly treated. Currently, the patient still routinely comes to the hospital to be examined and evaluated for any signs of complications or a decrease in renal function.

Conclusion

A rare finding of Iliac lymphadenopathy as a result of peritonitis due to CAPD could become a challenge during renal transplantation if the size and location of the lymphadenopathy hindered vascular access required for the anastomosis.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2019.100890>.

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