



Oncology

Chylous ascites following a right robotic assisted laparoscopic partial nephrectomy

Daniel Roberson^{a, **}, Raju Chelluri^a, Alan J. Wein^a, Phillip Mucksavage^a^a Division of Urology, Department of Surgery, University of Pennsylvania Health System, Philadelphia, PA, USA

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A B S T R A C T

Chylous ascites (CA) is a known complication of retroperitoneal surgery. We are reporting the case of a 65-year-old male who underwent a robotic assisted laparoscopic (RAL) partial nephrectomy for a renal mass and subsequently developed CA. He was successfully treated with a low-fat diet and maintenance of a surgical drain. To our knowledge, this is the first reported case of CA following right RAL partial nephrectomy. Current literature shows a significantly greater incidence of CA after left sided kidney surgery and with concurrent lymph node dissection. The majority of patients with this complication can be successfully managed without reoperation.

Introduction

Chylous ascites (CA) results from disruption of lymphatic channels and is predominantly a complication of left sided retroperitoneal surgery with wide dissection of lymphatic tissue.^{1–3} The following case is unique as we are reporting an instance of CA following a right robotic assisted laparoscopic (RAL) partial nephrectomy. To our knowledge, there have been no prior such cases reported, although rare cases have been reported following right nephrectomy.

Case presentation

This patient is a 65-year-old male with a medical history significant for nephrolithiasis, type II diabetes mellitus, hypertension, hyperlipidemia, and benign prostatic hyperplasia. He had no prior abdominal operations. He is a social alcohol user and former smoker.

In February of 2019, he presented with gross hematuria. A CT urogram revealed a 20 × 20mm anterior, upper pole, enhancing mass of the right kidney (Fig. 1) as well as two simple cysts, a 1cm bladder stone, and prostatic enlargement. After a discussion of the risks, benefits, and alternatives, he was taken to the operating room for a right RAL partial nephrectomy. The partial nephrectomy was performed with the aid of intraoperative ultrasound. The renal vessels separately clamped. A lymph node dissection was not preformed. Warm ischemia time was 12 minutes and estimated blood loss was 100ml. A Jackson-Pratt (JP) drain

was placed in the right perinephric space (Fig. 2).

After surgery, his Foley catheter was draining an adequate amount of clear urine and the JP drain collected thin, serosanguinous fluid. The morning after surgery he was recovering without issue and his Foley catheter was removed. He was subsequently unable to void, and a Foley catheter was replaced. Shortly after, the JP drain output was noted to be increasing and was now draining thicker “milk-like” fluid. Drain fluid triglyceride level resulted at 2144 mg/dL. The patient’s serum triglyceride was 81 mg/dL. The JP drain was left in place, the patient was started on a low-fat diet, and he was kept overnight for observation. On the morning of post-operative day (POD) 2, the quality of the drain fluid remained the same and output totaled 165ml since the operation. He was discharged to home with the Foley catheter and JP drain in place.

His catheter was removed in the office and he voided without issue on POD 5. At this time the JP drain output remained high (>50ml day) and “milky” in quality. The following day he was hospitalized for a UTI and a CT scan performed during the admission did not show renal or perinephric pathology (Fig. 3). The JP drain remained the same quality, yet now trended down in output to 20–30 ml a day of fluid. He was next seen in clinic on POD 14 at which time the pathology results were reviewed and revealed a 1.5cm oncocytoma with negative margins. At this visit, his JP drain was removed as the output changed to a thinner, less “milky” appearing fluid, and collected less than 50ml of fluid a day for multiple days. Six weeks post operatively, a retroperitoneal ultrasound did not show pathology in the kidney parenchyma or detectable

Abbreviations: CA, Chylous Ascites; RAL, Robotic assisted laparoscopic; JP, Jackson-Pratt; POD, Post-operative day; LDN, Living donor nephrectomy.

* Corresponding author. Division of Urology, Department of Surgery, University of Pennsylvania Perelman Center for Advanced Medicine, West Pavilion, 3rd Floor 3400 Civic Center Blvd, Philadelphia, PA, 19104, USA.

E-mail address: Daniel.roberson@penntmedicine.upenn.edu (D. Roberson).

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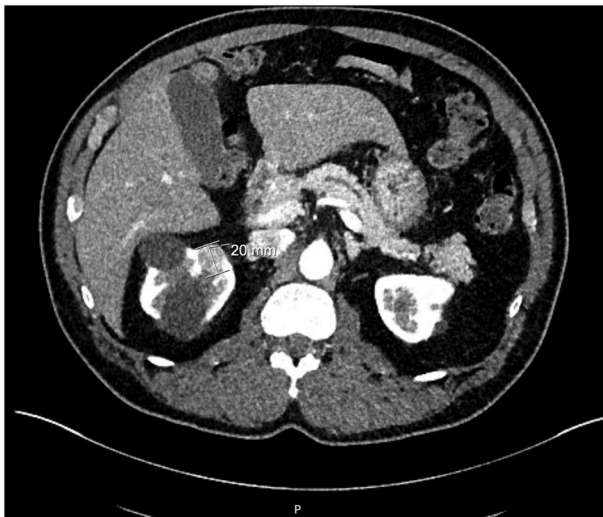


Fig. 1. CT Urogram-axial view of the right renal mass prior to surgery.



Fig. 2. Intraoperative picture showing the hilar dissection. Top of image is right lateral and image right is cranial.

perinephric collections. At the present, he is doing well from a urological perspective and has no sequelae of having developed CA after his partial nephrectomy.

Discussion

Much of the current literature involving CA after renal surgery comes from the realm of transplantation. A contemporary review by Seth et al. examined all published cases of CA after laparoscopic living donor

nephrectomy (LDN). They found that the overwhelming majority of cases of CA were from left sided surgery, which was attributed to the left kidney being the preferred side for donation, as well as the distribution of important lymphatic channels.¹

Studies not limited to LDN have echoed similar results. A case series in 2010 looked at 622 transabdominal laparoscopic nephrectomies. The overall incidence of CA in their sample was 5.1% (32 cases), with 78% of cases occurring after left sided surgery. The presence of lymph node dissection was also associated with CA. Only one patient with CA required reoperation. The authors suggest that the best way to prevent CA is meticulous clipping of lymphatics.³ A study in 2015 discussed 1156 laparoscopic nephrectomies at a single institution and reported 9 cases of CA (0.77%). In this series, all of the patients that developed CA either had bilateral nephrectomies or a left sided nephrectomy, none had isolated right sided kidney surgery.²

A paucity of literature exists examining post-operative CA specifically after partial nephrectomy. A 2009 case report discussed the development of chyluria and subsequent chyloma and urinoma after an open, left partial nephrectomy. This patient’s urine only turned to a white color and milky after meals and the chyle leak completely resolved by 8 weeks with stenting and dietary changes.⁴ The first reports in the literature of CA after RAL partial nephrectomy are from Pahouja et al., in 2016. This case series of three patients who developed CA after RAL partial nephrectomy all had left sided surgery which was a significant predictor of CA in these authors population.⁵

Conclusion

This is a case of a 65-year-old male who underwent a RAL partial nephrectomy for a right, 20mm renal mass and who subsequently developed CA which was successfully managed with a low-fat diet and maintenance of a drain. If a drain were not left in place, we believe the patient most likely would have had a delayed presentation with symptoms of painless abdominal distension leading to possible peritonitis. Current literature shows left sided kidney surgery and concurrent lymph node dissection as predictors of post-operative CA.¹⁻³ To our knowledge, this is the first reported case of CA following a right RAL partial nephrectomy.

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Fig. 3. CT Scan-Coronal and axial views of the right kidney on POD6 with effort to show the wedge-shaped defect in the renal parenchyma, the presence of the surgical drain, and the lack of a lymphocele.

Author contributions

Daniel Roberson, MD: Conception, interpretation of data, manuscript writing.

Raju Chelluri, MD, MS: Conception, interpretation of data, manuscript writing.

Alan Wein, MD PhD (Hon): Interpretation of data, manuscript writing.

Phillip Mucksavage, MD: Conception, interpretation of data, manuscript writing.

Declaration of competing interest

There are no directly relevant conflicts of interest to declare from any author.

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