

CASE REPORT

Extraperitoneal laparoscopic nephrolysis for the treatment of chyluria

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Case report

A 37-year-old white woman presented with a 7-year history of chyluria. The patient denied any history of travelling to endemic areas of filariasis. Urine chemistry revealed high triglycerides with a layer of chylomicrons. Intravenous urography and abdominal and pelvic CT were normal but lymphangiography detected abnormal lymphatics and fistulous communications in the left kidney (Fig. 1). Conservative management had failed and surgical options were discussed. The patient consented to an extraperitoneal laparoscopic nephrolysis.

Under general anaesthesia, the left ureter was catheterized and the patient placed in the flank position. A 2 cm transverse incision was made just anterior to the tip of the 12th rib. The lumbodorsal fascia was identified and two stay sutures were placed. The flank muscles

were separated and the retroperitoneum entered. The peritoneum was displaced medially by finger dissection and Gerota's fascia was grasped with Scanlon clamps, delivered into the incision and incised. A commercially available balloon (PDB, Origin Medsystems, Menlo Park, CA, USA) was placed within the Gerota's fascia and inflated with 1 L of air. The dissection was visually controlled by inserting the laparoscope within the trocar balloon. A Hasson cannula was inserted and CO₂ insufflation maintained at a pressure of 15 mmHg.

Working ports were placed as follows: subcostal in the posterior axillary line (5 mm), 2 cm below the umbilicus in the anterior axillary line (10 mm), and 2 cm above the umbilicus in the anterior axillary line (10 mm).

Gerota's fascia was stripped from the kidney and removed. Near the hilum, several large lymphatic ducts and nodes were clipped and excised with the renal hilum completely skeletonized (Fig. 2). Pathology showed only reactive lymph nodes. The post-operative period was uneventful, with discharge within 48 h and return to usual activities within a week. The chyluria rapidly



Fig. 1. Lymphangiogram demonstrating the abnormal lymphatic fistulous connections in the left kidney.

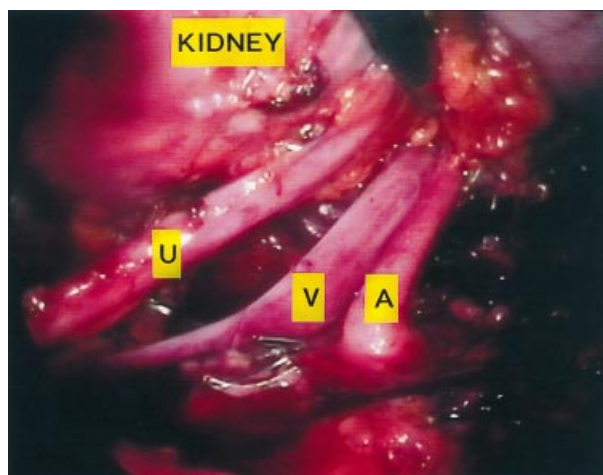


Fig. 2. Laparoscopic view of the left renal hilum at the completion of the procedure. Note the complete stripping and clip ligation of all lymphatic tissue around the renal artery, vein and ureter. U, ureter. V, renal vein. A, renal artery.

resolved and the patient has been followed for over 2 years with no recurrence.

Comment

The passage of chyle into urine (chyluria) is caused by rupture of lymphatic varices into the pelvicalyceal system. The most frequent cause of chyluria is parasitic infestation by *Wuchereria bancrofti*, which is found in south-east Asia. Non-parasitic chyluria is rare in western countries and commonly caused by congenital lymphatic malformation, trauma, infection, or neoplasm.

Treatment options include a medium-chain fatty acid diet, instillation of sclerosing agents into the renal pelvis, lymphovenous anastomosis, ligation of all lymph vessels leading to the kidney and renal pelvis, renal autotransplantation and nephrectomy [1,2]. Stripping of the renal pedicle with ligation of all lymphatic vessels leading to the kidney (nephrolysis) is a safe procedure, with cessation of chyluria most patients.

One case of transperitoneal laparoscopic lymphatic ligation has recently been reported [3]. The present report shows that this condition can also be treated by extraperitoneal laparoscopy. In addition to the advantage of being minimally invasive, laparoscopy provides optical

magnification that facilitates the identification of small lymphatics and thus should improve success rates. The extraperitoneal technique avoids the potential complications (bowel injury, prolonged ileus, etc.) that can be associated with transperitoneal laparoscopy.

References

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