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Retroperitoneal Lymphatic Cyst Compressing the Ureter in a Child Presenting with Recurrent Flank Pain

Erik Johansson*

Department of Pediatric Urology, Nordic South University Hospital, Copenhagen, Denmark

✉ ***Erik Johansson***
Department of Pediatric Urology,
Nordic South University Hospital,
Copenhagen, Denmark
E-mail: erik.johansson.nsuh@uroclinmail.org

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Description

A ten-year-old girl was referred to a pediatric surgical unit because of intermittent right flank pain and episodic vomiting over a period of four months. The pain episodes were described as dull and colicky, sometimes radiating to the lower abdomen, and occasionally associated with decreased appetite. She had been treated multiple times for suspected urinary tract infection at local clinics, although urine cultures were repeatedly negative.

The patient had no significant past medical history and normal developmental milestones. Physical examination revealed mild tenderness over the right flank without palpable abdominal mass. Vital signs were stable, and no fever was present at admission. Laboratory investigations showed normal renal function, absence of leukocytosis, and sterile urine analysis. Initial ultrasonography demonstrated mild right hydronephrosis without visible calculus. Because of persistent symptoms and unclear etiology, further imaging with contrast-enhanced computed tomography was performed. This revealed a well-defined multiloculated cystic lesion in the right retroperitoneal space measuring approximately 6.5 cm, located adjacent to the ureter at the level of the mid-abdomen. The lesion exerted external compression on the ureter, leading to proximal dilatation.

Magnetic resonance imaging confirmed a lymphatic malformation characterized by thin-walled cystic spaces without solid components or vascular invasion. The ureter was displaced anteriorly and partially compressed, consistent with functional obstruction. Diuretic renography demonstrated delayed drainage from the right kidney with preserved differential renal function. Given the progressive nature of symptoms and evidence of obstructive uropathy, surgical intervention was planned. A laparoscopic approach was selected to minimize tissue disruption and improve postoperative recovery.

During surgery, multiple thin-walled cystic cavities filled with chylous fluid were identified in the retroperitoneum. The lesion was closely associated with the ureter but did not invade the ureteral wall. Careful dissection allowed complete excision of the cystic mass while preserving the integrity of the ureter and adjacent vascular structures. The specimen was removed intact and sent for histopathological evaluation. Postoperative recovery was uneventful. The patient resumed oral intake within twenty-four hours and reported immediate reduction in flank discomfort. Drain output was minimal and removed on the second postoperative day. Histopathology confirmed lymphatic malformation without evidence of malignancy.

Follow-up ultrasonography at three months demonstrated complete resolution of hydronephrosis and absence of residual cystic lesion. The patient remained asymptomatic at one-year review with normal renal function and no recurrence of urinary symptoms. Retroperitoneal lymphatic malformations are uncommon congenital lesions arising from abnormal development of lymphatic channels. They may remain asymptomatic for years or present with nonspecific abdominal or flank pain depending on size and anatomical location. When located near the urinary tract, these lesions may cause obstructive uropathy due to external compression of the ureter.

Clinical presentation in children is often nonspecific, leading to repeated misdiagnosis as urinary tract infection or functional abdominal pain. In this case, sterile urine cultures and absence of inflammatory markers helped exclude infectious causes, prompting further imaging evaluation. Ultrasonography serves as an initial screening tool but may not fully characterize deep retroperitoneal lesions. Cross-sectional imaging with computed tomography and magnetic resonance imaging provides superior delineation of lesion extent and relationship to adjacent structures. These modalities are essential for surgical planning.

Management depends on symptom severity, lesion size, and impact on adjacent organs. Observation may be considered for small asymptomatic lesions; however, progressive enlargement or compression of the urinary tract warrants intervention. Complete surgical excision is preferred when feasible to minimize recurrence risk. Laparoscopic resection offers advantages in pediatric patients, including reduced postoperative pain, shorter hospitalization, and improved visualization of deep anatomical structures. Preservation of the ureter is a key priority during dissection to prevent postoperative strictures or urinary leakage.

Conclusion

Histopathological confirmation is necessary to distinguish lymphatic malformations from other cystic retroperitoneal lesions such as mesenteric cysts, duplication cysts, or cystic neoplasms. Accurate diagnosis guides long-term surveillance strategies. This case illustrates a retroperitoneal lymphatic cyst causing ureteral compression and recurrent flank pain in a child. Surgical excision led to complete resolution of obstruction and symptoms. Early recognition of noninfectious causes of flank pain in children is essential to prevent unnecessary antibiotic exposure and delayed definitive treatment.