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Уролимфатические фистулы, выявленные по данным компьютерной томографии на фоне почечной колики

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АННОТАЦИЯ

В работе представлены два клинических наблюдения уролимфатических фистул, диагностированных методом компьютерной томографии. В обоих случаях пациенты поступили в клинику с симптоматикой почечной колики. Уролимфатические фистулы являются редким состоянием, обусловленным формированием связи между мочевыделительной и лимфатической системами. Как правило, состояние вызвано обструкцией лимфатических сосудов на фоне паразитарной инвазии. Иными причинами могут быть лучевая терапия, травма забрюшинного пространства, прорастание опухоли. В эру до антибиотиков были распространены инфекционные процессы, такие как ксантогранулематозный пиелонефрит и туберкулёз почек.

Представляем клинические случаи уролимфатических фистул, сформированных на фоне уролитиаза.

В представленных клинических случаях моча напрямую поступала в лимфатические сосуды через уролимфатический свищ, обнаруженный на компьютерных томограммах с контрастным усилением. Уролимфатические фистулы, вызванные нарушением оттока мочи из-за блока мочевыводящих путей, выявляются редко по причине того, что диагностическим методом выбора при почечной колике является ультразвуковое исследование брюшной полости. В подавляющем большинстве случаев уролимфатические фистулы лечатся консервативно и не требуют оперативного вмешательства. Как правило, сформированные соустья перестают существовать при успешном лечении состояния, которое вызвало свищ.

Ключевые слова: уролимфатическая фистула; уретеролитиаз; почечная колика; компьютерная томография.

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Computer tomography of uro-lymphatic fistulas associated with renal colic

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ABSTRACT

This article presents two clinical observations of uro-lymphatic fistulas diagnosed by computed tomography. In both cases, the patients were admitted with symptoms of renal colic. Uro-lymphatic fistulas are a rare condition caused by the formation of a connection between the urinary and lymphatic systems, which is caused by, as a rule, lymphatic vessel obstruction due to parasitic infestation. Other causes may be radiation therapy, retroperitoneal trauma, and tumor sprouting. In the era before antibiotics, infectious processes such as xanthogranulomatous pyelonephritis and renal tuberculosis were common. Cases of uro-lymphatic fistulas formed against urolithiasis background are presented below. In the clinical cases presented, urine directly entered the lymphatic vessels through a uro-lymphatic fistula detected on contrast-enhanced computed tomography. Uro-lymphatic fistulas caused by impaired urine outflow due to blocked urinary tract are rarely detected since abdominal ultrasound is the diagnostic method of choice in renal colic. In the vast majority of cases, uro-lymphatic fistulas are treated conservatively and do not require surgical intervention. As a rule, the formed fistulas cease to exist when its root cause is successfully treated.

Keywords: uro-lymphatic fistula; ureterolithiasis; renal colic; computed tomography.

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以肾绞痛为背景的计算机断层扫描显示的泌尿淋巴瘘管

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简评

本文介绍了计算机断层扫描诊断的泌尿淋巴瘘的两个临床观察结果。在这两个病例中，患者都因肾绞痛症状入院。泌尿淋巴瘘是一种罕见的疾病，是由于泌尿系统和淋巴系统之间形成了连接。这种情况通常是由淋巴管在寄生虫害的背景下阻塞引起的。其他原因可能包括放射治疗、腹膜后间隙创伤、肿瘤萌发。在出现抗生素之前，黄色肉芽肿性肾盂肾炎和肾结核等感染过程很常见。

我们介绍了在尿石病背景下形成的泌尿淋巴瘘的临床病例。

在所提出的临床病例中，尿液通过泌尿淋巴瘘直接进入淋巴管，这是在对比增强计算机断层扫描中检测到的。由于尿路堵塞导致尿液异常流出而引起的泌尿淋巴瘘，很少被发现，这是因为超声检查是肾绞痛的首选诊断方法。在绝大多数情况下，泌尿淋巴瘘是保守治疗的，不需要手术干预。通常情况下，当引起瘘管的疾病被成功治疗后，已形成的吻合将不再出现。

关键词： 尿淋巴瘘；输尿管结石；肾绞痛；CT扫描。

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BACKGROUND

An abnormal connection between the urinary system and lymphatic vessels is known as urolymphatic fistula (ULF), which is a rare disorder. In most cases, such fistulas are clinically associated with chyluria [1]. ULF is usually caused by parasitic infections of the kidneys or lymphatic system, including filariasis, echinococcosis, cysticercosis, ascariasis, malaria, and renal tuberculosis [2, 3]. The ULF, however, is rarely associated with renal colic. Only isolated cases are reported in world literature [3].

We present two cases of ULF associated with renal colic.

CLINICAL CASES

Clinical case No. 1

At approximately 3 am, a 65-yr-old male patient woke up with a dull, aching pain in his left iliac region [visual analogue scale (VAS) score: 3–4]. The pain intensity remained the constant both at rest and on movement. The antispasmodic the patient took had no effect. To relieve the condition, he came to the clinic.

Clinical examination revealed a stable and closer to satisfactory condition. There were no respiratory or hemodynamic disorders. The respiration rate was 18/min. The pulse was 74/min. The abdomen was unswollen, soft, and sensitive in the left iliac region. There were no peritoneal signs were observed. Auscultation of bowel sounds was done. Flatus was passing. There is no dysuria. The right costovertebral angle tenderness was positive. There were no abnormalities in urinalysis. Blood tests revealed leukocytosis with left shift.

The left renal colic was suggested in the emergency room. The patient was referred for an intravenous contrast-enhanced computed tomography (CT) of the abdomen and kidneys to confirm that diagnosis and exclude a sigmoid diverticulitis.

At 15 min, the CT revealed a small peripelvic contrast extravasation (urinoma) (during the delayed phase). In addition, the retrograde contrast enhancement of lymphatic vessels was observed along the left renal vein during the excretory phase. These signs are typical for ULF. The examination showed the calculus at the left ureteric orifice, left ureteropyelocalicoectasia, left peripelvic urinoma, and right renal calculus (Figure 1).

The left ureteric calculus had urodynamic effects on the left upper urinary tract resulting in high risk of purulent-septic complications, so the left contact lithotripsy was initiated.

Surgery Report Summary. Ureteroscope No. 7 was freely passed through the urethra into the bladder. The ureteric orifices were slit-shaped and typically located. A large black calculus protruded from the left ureteric orifice into the bladder. For safety, a core wire was guided to the left ureteric orifice. The calculus was also moved into the ureter. The ureteroscope was inserted into the left ureter. Laser lithotripsy was performed. Calculus fragments were removed. Over the previously inserted wire, stenting catheter

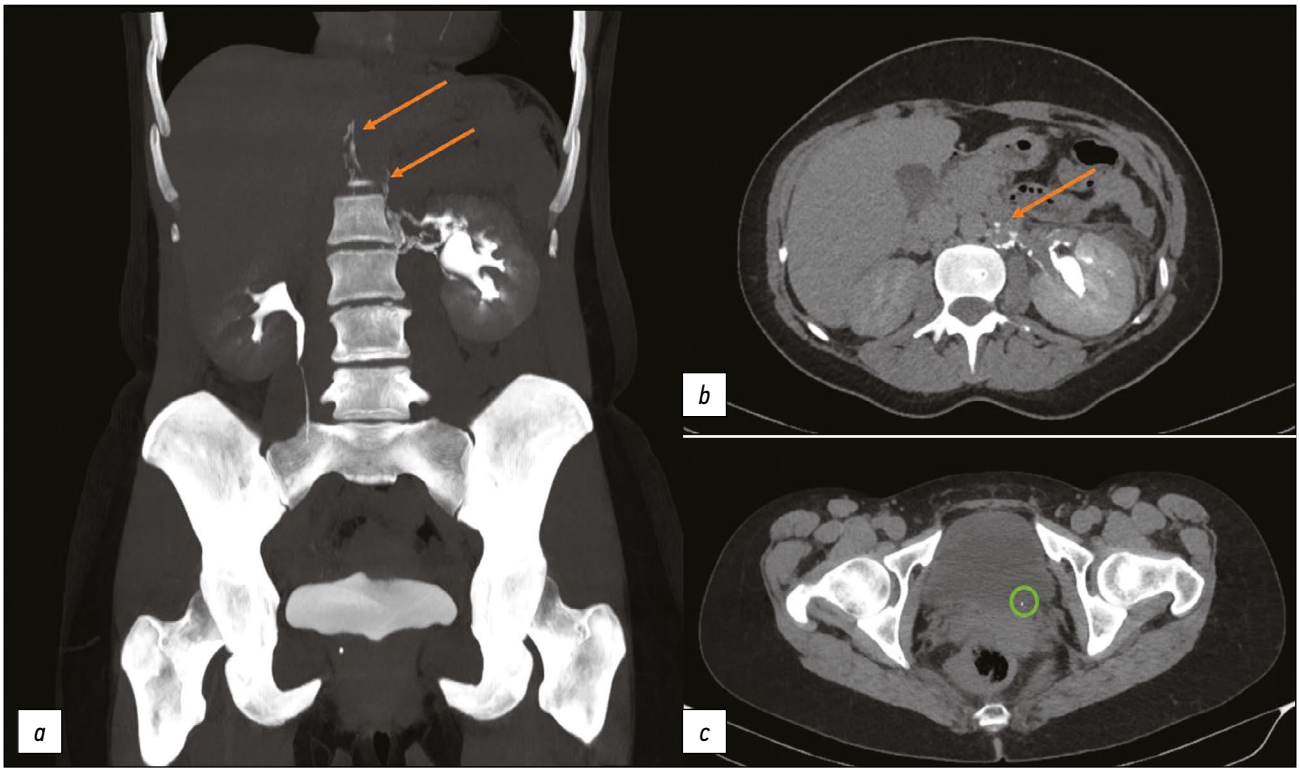

Fig. 1. Computed tomography of the abdomen with intravenous contrast enhancement. The excretory phase: (*a, b*) Orange arrows show the contrast spreading along lymphatic vessels; (*c*) A green circle highlights a calculus at the left ureteric orifice.

No. 6 was guided from the left side, having the proximal end folded in the pelvis and the distal one in the bladder.

The patient was discharged the next day for further outpatient treatment and follow-up.

Clinical case No. 2

The previous, a 38-yr-old female patient complained gradually increasing lumbar pain (VAS score: up to 3). Clinical examination revealed that the general condition was relatively satisfactory. The abdomen was soft and painless. There were no peritoneal signs observed. The right costovertebral angle tenderness was positive. Complete blood count was normal. The left renal colic was suspected in the emergency room. To confirm the diagnosis, a contrast-enhanced CT of the abdomen and pelvis was recommended.

The CT showed a contrast extravasation in the left kidney lymphatic ductus up to the thoracic lymphatic duct (typical for ULF). A calculus at the left ureteric orifice with ureteropyelocalicectasis and signs of urinary tract obstruction, as well as a calculus at left middle calix, were found during the examination (Figure 2).

The patient refused hospitalization and was referred to a third-party hospital for further treatment.

DISCUSSION

Fistulas of the urinary system can communicate with the intestines, skin, blood and lymphatic vessels, and thoracic cavity (pleura, bronchi) [3]. Urinary fistulas can be divided into two: those that communicate with renal collecting tubules via the renal parenchyma and those that communicate directly with the renal pelvis. The relatively abundant lymphatic vessels of the renal pelvis eventually communicates with the retroperitoneal lymphatic system via the peripelvic system [4, 5].

In developed countries, most cases of fistulas involving the kidney are caused by iatrogenic trauma, such as percutaneous nephrostomy or nephrolithotomy guidewire insertion, extracorporeal shock wave lithotripsy, and abdominal surgery. Other causes include radiation therapy, penetrating trauma, and neoplastic invasion. Chronic infections commonly associated with calculi formation (xanthogranulomatous pyelonephritis) and tuberculosis have become less common causes due to development of next generation antibiotics [3].

In our clinical cases, urine directly entered the lymphatic vessels through the ULF detected by contrast-enhanced CT. Following the obstruction of the urinary system, the ULF developed (Figure 3). The reported cases are relatively unique because most ULFs are caused by obstruction of lymphatic vessels. The ULF is often followed by chyluria caused by lymphatic fluid penetration into the urinary system [1]. In our cases, no chyluria was detected, possibly as a result of the directed urine flow from the urinary system to lymphatic vessels in the setting of increased pressure in the urinary system [6].

Since most cases of renal colic are diagnosed using abdominal radiography and ultrasound, urolithiasis-related

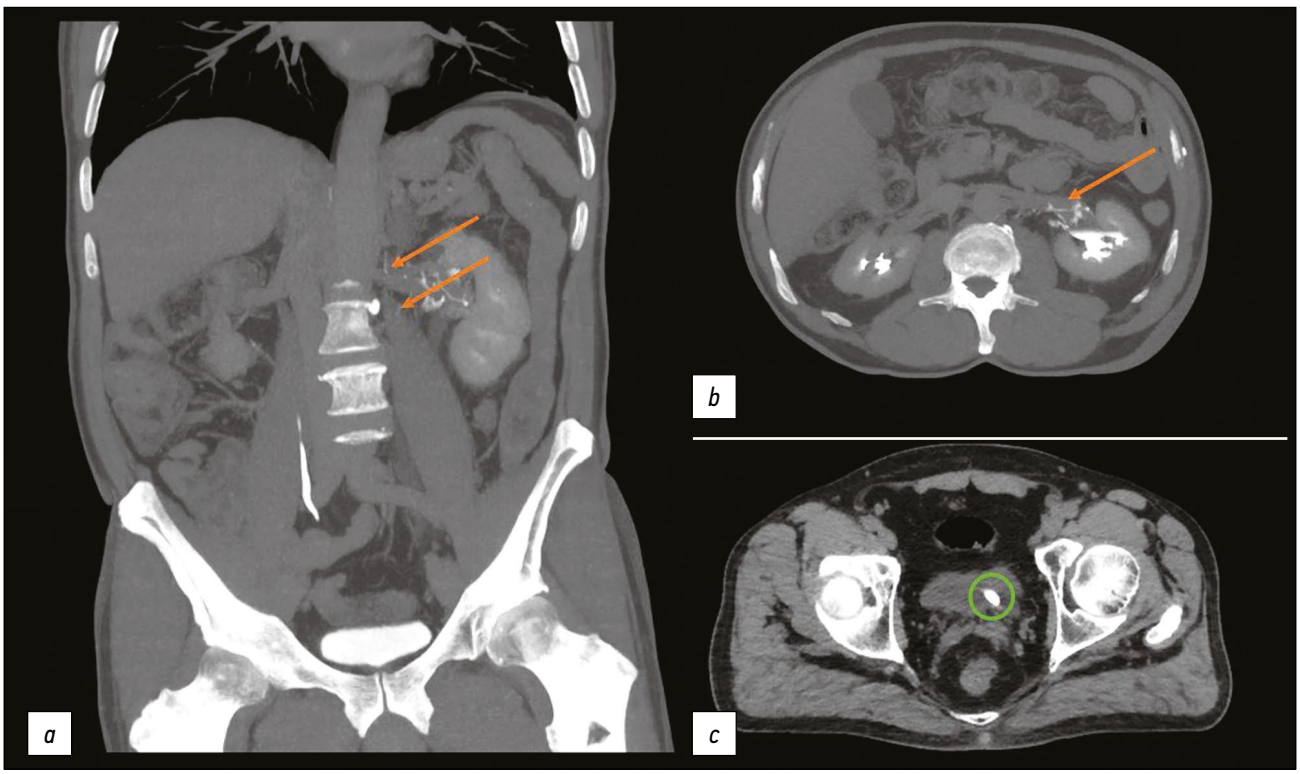

Fig. 2. Computed tomography of the abdomen with intravenous contrast enhancement. The excretory phase: (*a, b*) Orange arrows show the contrast spread along lymphatic vessels; (*c*) A green circle highlights a calculus at the left ureteric orifice.

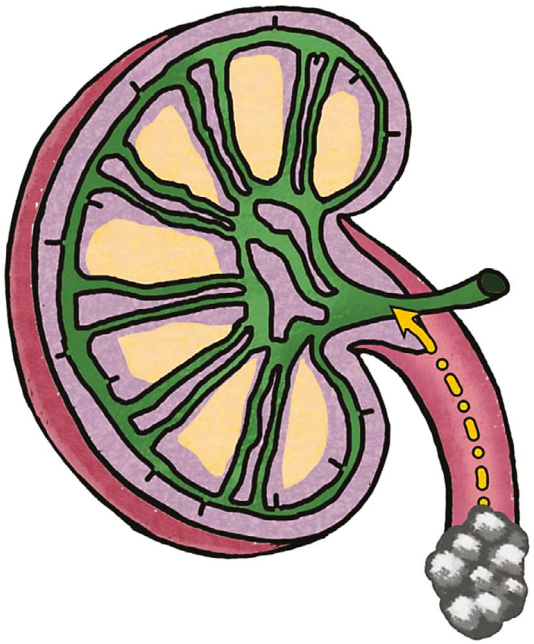

Fig. 3. A schematic shows the mechanism of urolymphatic fistula formation associated with impaired urine outflow due to the ureteral calculus (yellow arrow).

ULFs are rarely detected [3, 7]. The excretory phase CT is advised if the urinary and lymphatic systems are still connected after the ureteral obstruction. In other causes of the lymphatic system occlusion, it is possible to perform lymphography[8].

In most cases, ULFs are treated conservatively [8, 9]. Fistulas usually close after the treatment of the underlying condition.

The reported cases have some limitations. The fistulas described could theoretically exist before the current attack of renal colic. The first patient did not have a CT scan of the urinary system after the treatment, so we do not know whether the fistula persisted after lithotripsy and ureteral stenting.

CONCLUSION

As a result, these ULFs were detected as a part of examination due to renal colic attacks and were confirmed by contrast-enhanced CT. Despite the direct urine penetration into lymphatic vessels, no significant clinical changes were observed.

Further research is required to determine clinical consequences of this disorder.

ADDITIONAL INFORMATION

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