

Colorenal fistula and urinary tract infection in a pediatric patient with acute lymphoblastic leukemia

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ABSTRACT

Introduction. Colorectal fistula is rare in the pediatric population. It may occur at any segment involved by ischemia, chronic inflammation, or necrosis. It is typically associated with a preliminary renal lesion that may arise as a result of interventional procedures, inflammatory conditions, colon tumor, and xanthogranulomatous pyelonephritis, among others.

Clinical case. 15-year-old female patient diagnosed with acute lymphoblastic leukemia admitted at our institution for baseline condition management. During her stay, she experienced gastrointestinal and urinary infectious events. In the assessment and management of those, a left colorectal fistula was found. Surgical treatment was decided upon.

Discussion. Colorectal fistula typically occurs secondary to renal inflammation or infection. Clinical signs are highly variable, and treatment is surgical, with the fistulous tract being resected in all cases.

KEY WORDS: Urinary infection; Colorectal fistula; Acute lymphoblastic leukemia.

FÍSTULA COLORRENAL E INFECCIÓN DE VÍAS URINARIAS EN PACIENTE PEDIÁTRICO CON LEUCEMIA LINFOIDE AGUDA

RESUMEN

Introducción. Las fístulas colorrenales son infrecuentes en la población pediátrica. Pueden desarrollarse en cualquier segmento afectado por isquemia, inflamación crónica o necrosis. Suelen estar asociadas a una lesión primitiva en el riñón que puede producirse por procedimientos intervencionistas, enfermedades inflamatorias, tumorales del colon, pielonefritis xantogranulomatosa, entre otras.

Caso clínico. Paciente femenina de 15 años, con diagnóstico de leucemia linfocítica aguda, ingresa a la institución para recibir manejo de su enfermedad de base. Durante su evolución, desarrolla eventos infecciosos (gastrointestinales y urinarios), y en evaluación y manejo de estos se documenta fístula colorrenal izquierda, motivo por el cual se da un enfoque de tratamiento quirúrgico.

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Comentarios. La fístula renocolónica generalmente se presenta secundaria a procesos inflamatorios o infecciosos renales; su presentación clínica es muy variada, y el tratamiento es quirúrgico, incluyendo siempre la resección del trayecto fistuloso.

PALABRAS CLAVE: Infección urinaria; Fístula renocolónica; Leucemia linfocítica aguda.

INTRODUCTION

Colorectal fistula is a rare instance in the literature, and especially so in the pediatric population⁽¹⁾. The fistulous tract may develop at any segment involved by ischemia, chronic inflammation, or necrosis⁽²⁾. However, left colorectal fistula is the most frequent renal intestinal fistula⁽³⁾. It is typically associated with a preliminary renal lesion that may arise as a result of interventional procedures, inflammatory conditions, colon tumor, xanthogranulomatous pyelonephritis, trauma, chronic pyelonephritis, renal cell carcinoma, radiofrequency ablation, or perforation of renal or perirenal abscess^(1,3-5).

Symptoms and clinical findings associated with colorectal fistula are atypical and variable⁽⁶⁾. Urinary tract infection is the most frequent finding. The presence of a mass, abdominal pain, fever, and pyuria are also common. Classic manifestations such as pneumaturia and fecaluria are rarely reported⁽⁷⁾.

Diagnosis of colorectal fistula is usually achieved by means of imaging tests. Imaging tests using gastrointestinal contrast such as barium enema may demonstrate the fistulous tract in some cases. Imaging tests using intravenous contrast do so more frequently, but they also may compromise renal function, which could already be impaired as a result of the fistula. Retrograde pyelography is the gold standard technique for definitive diagnosis⁽⁸⁾.

Treatment may require nephrectomy and fistula closure, or intestinal resection with primary anastomosis⁽⁹⁾.

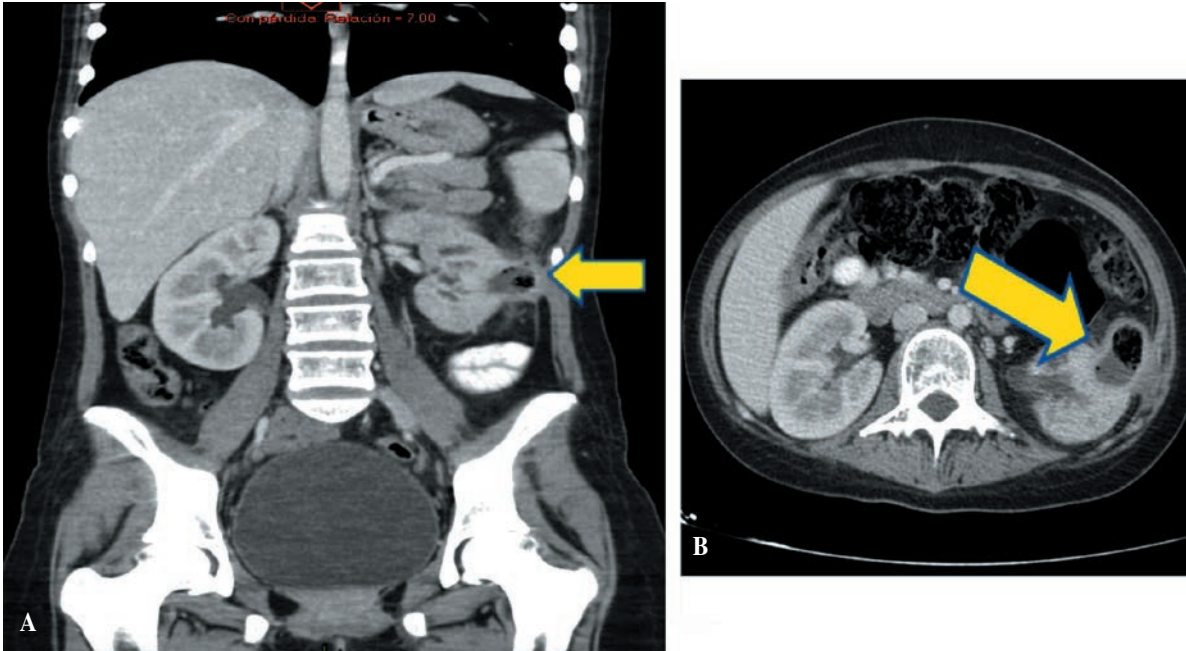


Figure 1. A) Abdominal and pelvic CT-scan demonstrating the colorenal fistula on the sagittal plane. B) Abdominal and pelvic CT-scan demonstrating the colorenal fistula on the coronal plane.

By 2010, just over 100 cases had been reported in the literature^(10,11). Diagnosis is usually achieved by means of imaging tests, and treatment is typically surgical. However, conservative management has also demonstrated good results⁽¹²⁻¹⁶⁾.

We could not find any instance of colorenal fistula as a complication secondary to acute lymphoblastic leukemia management in a pediatric patient.

CLINICAL CASE

15-year-old female patient with history of acute lymphoblastic leukemia. She was admitted at our institution to receive a remission protocol. During her stay, she developed multiple complications such as neutropenic colitis, urinary tract infection, and recurrent pyelonephritis.

Given the persistence of pain at the left hemiabdomen and the presence of recurrent urinary infection, a contrast-enhanced abdominal CT-scan was carried out, which demonstrated a colorenal fistula compromising the posterior wall of the descending colon and the lower pole of the left kidney (Fig. 1).

Laparoscopic surgical repair was decided upon. A 10 mm umbilical port was used for the scope, and two 5 mm working ports were placed. Toldt's fascia was dissected, with large adhesions being found at the proximal segment of the descending colon involving the lower pole of the left kidney. A 2 cm³ perirenal abscess was drained, with

opening of 70% of the circumference of the colon, and with an approximately 1.5 cm renal compromise, with friable tissue around (Fig. 2). The colonic segment involved was resected. Resection borders were submitted for pathological examination. A side-to-side anastomosis was performed at the antimesenteric border, the procedure being uneventful.

RESULTS

In the postoperative period, the patient required follow up at the pediatric ICU for 5 days, with parenteral nutrition. In that period, she developed surgical site infection, which was treated with antibiotics (sulbactam ampicillin and clindamycin), with an adequate progression.

On day 6, enteral nutrition was initiated and well tolerated. Chemotherapy was resumed and also well tolerated, without associated complications. Baseline condition is currently under follow-up. She has not developed any further urinary tract infection episodes or other events with renal compromise. Intestinal transit disorders have not been reported.

DISCUSSION

Colorenal fistula is a rare entity typically occurring secondary to acute or chronic renal inflammation.

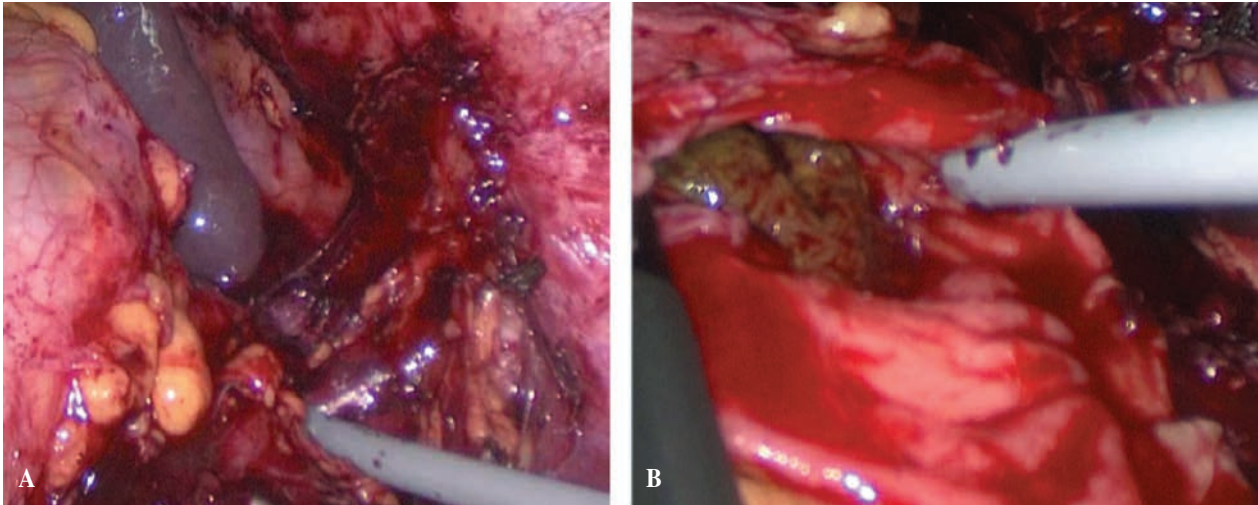


Figure 2. A) Fibrotic area following left coloparietal lifting, corresponding with the fistula. B) Colonic segment opened following fistula resection.

It is usually associated with renal obstruction and infection, perpetuated by the presence of renal calculi in half of the cases. In other instances, it is secondary to other infections such as tuberculosis, and to a lesser extent, fungal infections. Instances associated with iatrogenic trauma in the presence of lithotripsy and urinary diversion stents have also been described. Malignant tumors are regarded as a rare cause of this entity. In our case, the patient developed urinary and gastrointestinal infectious complications in an immunosuppression context as a result of baseline pathology. These complications were considered the triggering etiology.

Fistulous tract formation may occur at any intestinal segment, secondary to ischemia, acute or chronic inflammation, and/or necrosis.

Symptoms and clinical findings are highly variable, with urinary tract infection being the most common one, as in our case.

Diagnosis was achieved using intravenous-contrast-enhanced abdominal and pelvic CT-scan images, as described in the literature. However, retrograde pyelography, which stands as the gold standard technique, was not carried out.

Treatment may involve nephrectomy with subsequent closure of the fistulous tract in the gastrointestinal tract, or resection of the intestinal segment compromised with subsequent primary anastomosis. Intestinal diversion is also feasible, since it favors the deferred closure of the fistulous tract. However, the fistulous tract should always be removed in order to prevent abscess formation and subsequent epidermoid carcinoma. The decision on how to manage this entity should be based on the patient's overall compromise and the experience of the physicians in charge with the relevant technique. In our patient, the intestinal

segment compromised was resected, and the fistulous tract was removed, with subsequent primary anastomosis.

In conclusion, this is a rare entity associated with a wide spectrum of clinical signs. Treatment is surgical, with the fistulous tract being resected in all cases.

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