

# A Rare Case of Nephrocolic Fistula Resulting from Radio Frequency Ablation (RFA) of Renal Cell Carcinoma

Bhavesh J. Patel, MD<sup>1</sup>, Arvind K. Mathur, MD, MPH<sup>2</sup>, Nishant Puri, MD<sup>1</sup>, and Christian S. Jackson, MD<sup>3</sup>

<sup>1</sup>Department of Gastroenterology, Loma Linda University Medical Center, Loma Linda, CA

<sup>2</sup>Department of Internal Medicine, Loma Linda University Medical Center, Loma Linda, CA

<sup>3</sup>Department of Gastroenterology, Jerry L. Pettis VA Medical Center, Loma Linda, CA

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## Abstract

Nephrocolic fistula is a rare, abnormal fistulous connection between the urinary system (kidney/ureters) and colon. Different benign and malignant etiologies are implicated in the formation of a nephrocolic fistula. Even though conservative treatment options have been tried recently (especially for benign etiologies), surgical resection has been the treatment of choice and should be pursued if conservative management fails. We report the first case of a nephrocolic fistula after a radiofrequency ablation of a renal cell carcinoma, which required surgical resection after conservative management failed.

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## Introduction

Nephrocolic fistula is an abnormal fistulous connection between the urinary system (kidney/ureters) and colon. Approximately 43 cases of nephrocolic fistula have been described in literature. Common reported causes of nephrocolic fistula are staghorn calculi, Crohn's disease, malignancy, surgical complications, and, rarely, renal tuberculosis.<sup>1-6</sup> Colovesical fistulas and ureterocolonic fistulas are most frequently caused by diverticulitis, and in the latter, the left ureter is most commonly affected.<sup>7-9</sup> Radiation therapy has been implicated as a cause of vesicovaginal, ureterovaginal, and vesicoileal fistulas. This is the first report of a nephrocolic fistula after radiofrequency ablation (RFA) for a renal cell carcinoma (RCC).

## Case Report

A 63-year-old, obese Caucasian male presented to a primary care clinic with pneumaturia and fecaluria for one month. The patient had recurrent urinary tract infections for the last 2 months, which were treated with oral antibiotics. He denied hematuria. Four months prior to presentation, he had CT-guided RFA for a left upper pole renal cell carcinoma. Based on clinical presentation and history of RFA, a presumptive diagnosis of nephrocolic fistula was made.

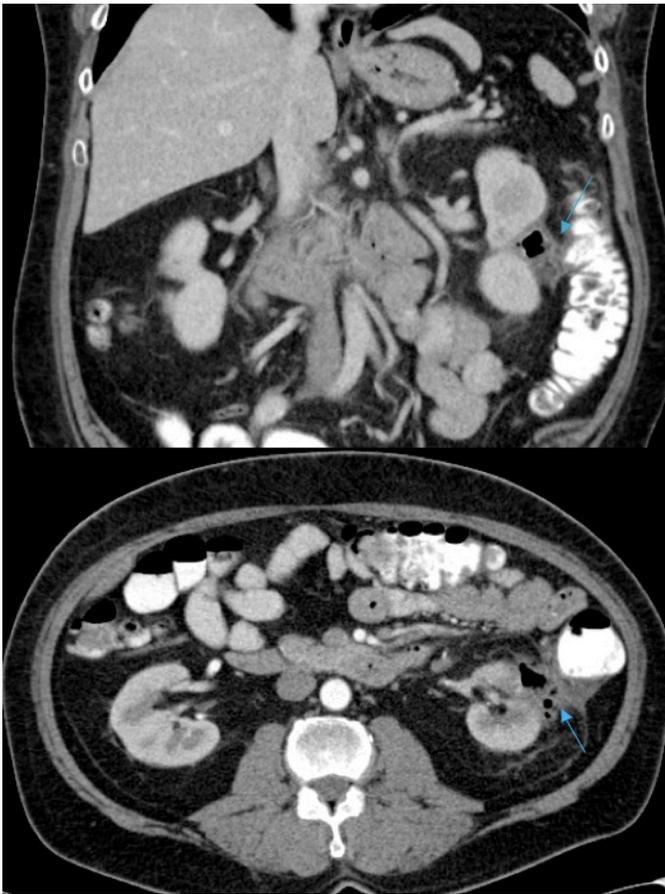
An abdomen/pelvis CT scan showed a fluid collection around the left kidney with extensive scar formation, thickening of left Gerota's fascia, moderate pericolonic edema/inflammation, and air in the urinary bladder (Figure 1). Colonoscopy revealed a fistulous tract opening in the descending colon 45 cm from the anal verge (Figure 2 and Figure 3). A retrograde pyelogram showed contrast extravasation from the middle calyx of the left kidney into the colonic system; a ureteral stent was then placed (Figure 4). The patient had persistent fecaluria and pneumaturia with no improvement over the next month. Total parenteral nutrition was initiated to provide

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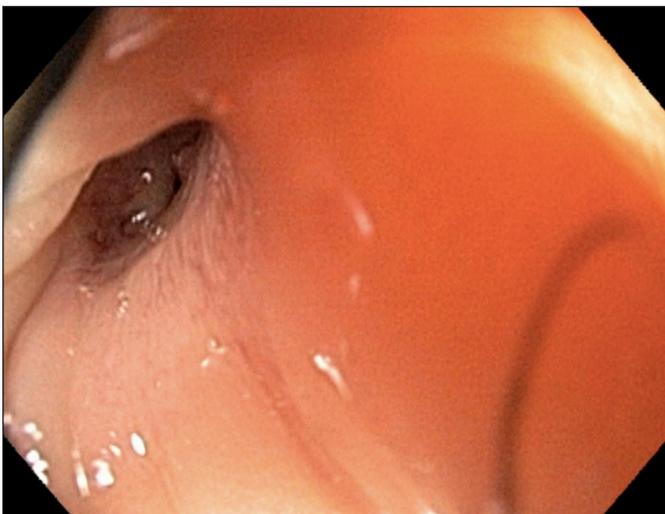
**Correspondence:** Arvind K. Mathur, MD, MPH, 11234 Anderson Street, Loma Linda, CA 92354 (amathur@llu.edu).

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**Figure 1.** CT scan showing air around the left kidney with severe inflammation and scar formation between left kidney and descending colon.

bowel rest and to optimize nutritional status prior to surgery. Surgical resection of nephrocolic fistula and resection of 8 cm of descending colon with end-to-end anastomosis was performed. The post-operative course was uneventful and the patient recovered well, with no recurrence of symptoms.

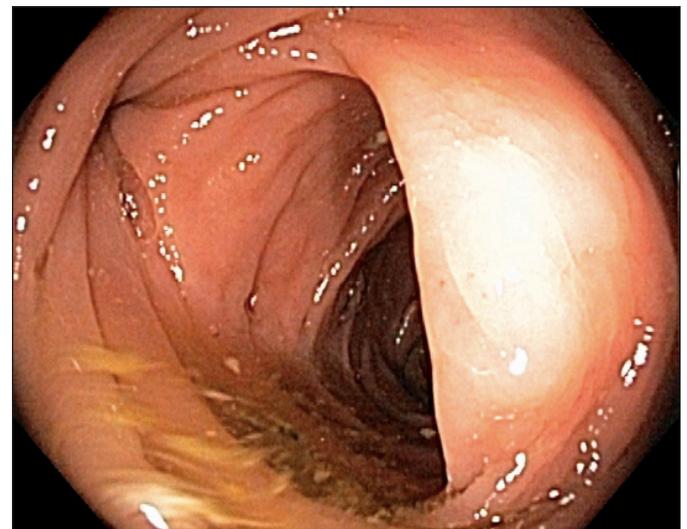


**Figure 2.** Fistula opening in descending colon 45 cm from anal verge.

Repeat CT scan showed no inflammation or air around the left kidney indicating resolution of fistula (Figure 5).

## Discussion

Although a case of nephroduodenal fistula has been reported as a consequence from RFA, nephrocolic fistula is not a known complication of RFA treatment for renal cell carcinoma.<sup>10</sup> Usually, the nephrocolic fistula manifests as a late result of chronic inflammation and is not seen in early stages on a CT scan. In our case, the CT scan did not show the fistulous tract, but clinical findings were suspicious for nephrocolic fistula. Diagnosis was confirmed by retrograde pyelogram (Figure 4).



**Figure 3.** Fistula opening.

Traditionally, nephrocolic fistulae have been treated with surgical excision but, recently, conservative approaches (antibiotics, ureteral stent, treatment of underlying diseases like tuberculosis) have been successfully tried.<sup>11-12</sup> Our patient did not improve on conservative management; this may be because of extensive scar formation that required resection. Surgical interventions (partial bowel resection, fistulectomy, and possibly nephrectomy) should be pursued in cases of failed conservative management, complex fistulae, sepsis, renal failure, or bleeding.<sup>13</sup>

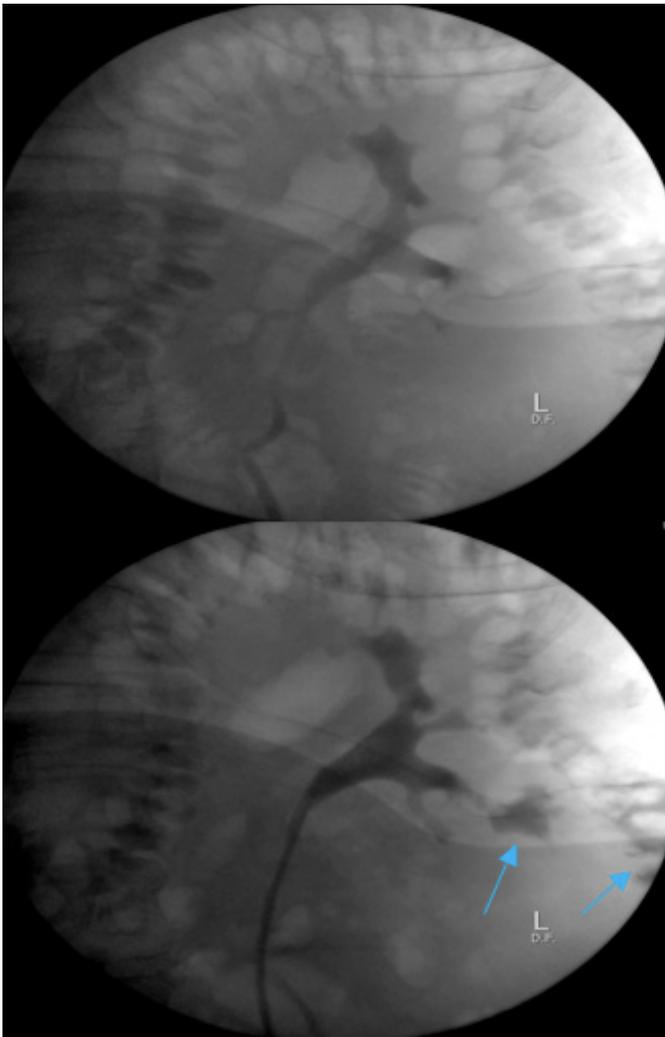
## Disclosures

Author contributions: All authors equally participated writing and editing this manuscript. BJ Patel is the article guarantor.

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Informed consent was obtained for this case report.

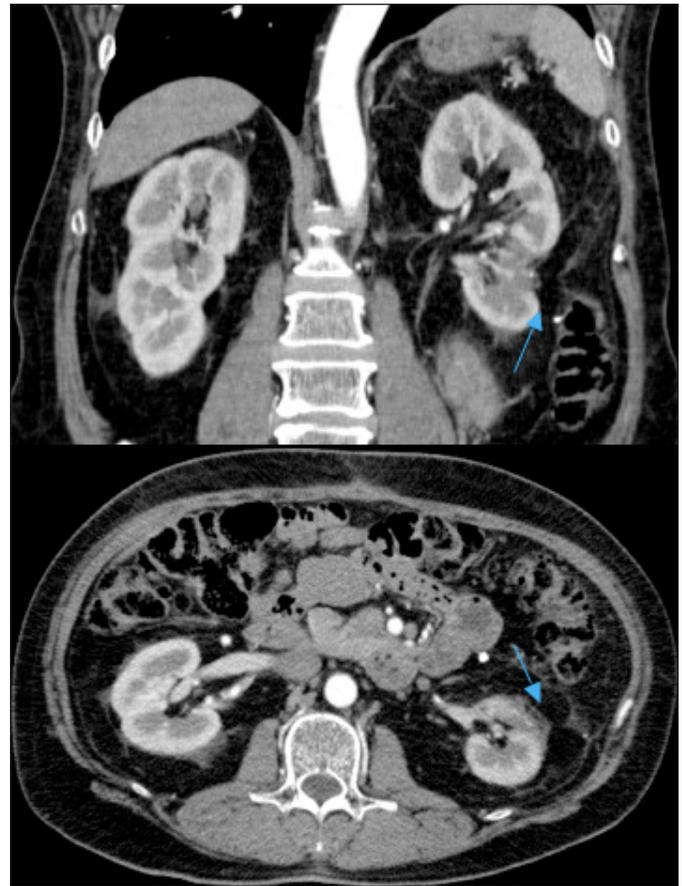
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**Figure 4.** Retrograde pyelogram.

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**Figure 5.** Post-surgery CT scan showing resolution of fistulous tract.

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