

from an RCC, the most common solid renal tumor, because the two have similar radiological characteristics⁽⁵⁾.

The imaging characteristics of foreign body granuloma of the kidney are extremely varied, depending on the presence of calcification, an adipose component, and necrosis. Because of those characteristics, it is quite difficult to distinguish among foreign body granuloma, RCC, and angiomyolipoma on the basis of imaging findings. Other differential diagnoses include transitional cell carcinoma, oncocytoma, lymphoma, leiomyoma, xanthogranulomatous pyelonephritis, and Erdheim-Chester disease^(2,3,5-7).

With the increase in the number of laparoscopic partial nephrectomies, the incidence of foreign body granuloma also increased⁽⁵⁾. When an expansile renal lesion exhibits calcifications, contains adipose foci, is well encapsulated, and shows no signs of infiltration of adjacent structures, the possibility of granuloma should be considered, especially if there is a history of surgical manipulation of the urinary tract⁽⁶⁾. It is also noteworthy that renal granulomas are not exclusively associated with foreign bodies in the renal parenchyma. They can be due to systemic diseases, be caused by inert endogenous substances, or even have an idiopathic etiology⁽⁸⁾.

REFERENCES

1. Miranda CMNR, Maranhão CPM, Santos CJJ, et al. Bosniak classification of renal cystic lesions according to multidetector computed tomography findings. *Radiol Bras.* 2014;47:115-21.

2. Israel GM, Bosniak MA. How I do it: evaluating renal masses. *Radiology.* 2005;236:441-50.
 3. Kutikov A, Fossett LK, Ramchandani P, et al. Incidence of benign pathologic findings at partial nephrectomy for solitary renal mass presumed to be renal cell carcinoma on preoperative imaging. *Urology.* 2006;68:737-40.
 4. Bosniak MA. The current radiological approach to renal cysts. *Radiology.* 1986;158:1-10.
 5. Öz II, Mungan A, Şerifoğlu I, et al. Suture granuloma mimicking renal cell carcinoma: magnetic resonance imaging (MRI) and pathologic correlation. *Journal of Urological Surgery.* 2014;1:36-8.
 6. Ferrozzi F, Bova D, Gabrielli M. Foreign-body granuloma of the kidney: CT, MR and pathologic correlation. *Eur Radiol.* 1999;9:1590-2.
 7. Kim JY, Kim JK, Kim N, et al. CT histogram analysis: differentiation of angiomyolipoma without visible fat from renal cell carcinoma at CT imaging. *Radiology.* 2008;246:472-9.
 8. Joss N, Morris S, Young B, et al. Granulomatous interstitial nephritis. *Clin J Am Soc Nephrol.* 2007;2:222-30.

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Ureterocolic fistula as an incidental finding after barium enema

Dear Editor,

A 42-year-old female patient who had undergone Hartmann's procedure for the treatment of colorectal carcinoma 7 months prior presented for preoperative evaluation before closure of the colostomy. She reported no clinical symptoms or

comorbidities and stated that she had never received chemoradiotherapy. She was given a barium enema (Figure 1), after which there was opacification of the ureter and left renal collecting system, consistent with ureterocolic fistula. Although the fistulous tract was difficult to characterize, it appeared to be connecting the distal stump to the middle third of the left ureter. There was also late opacification of the bladder. Careful

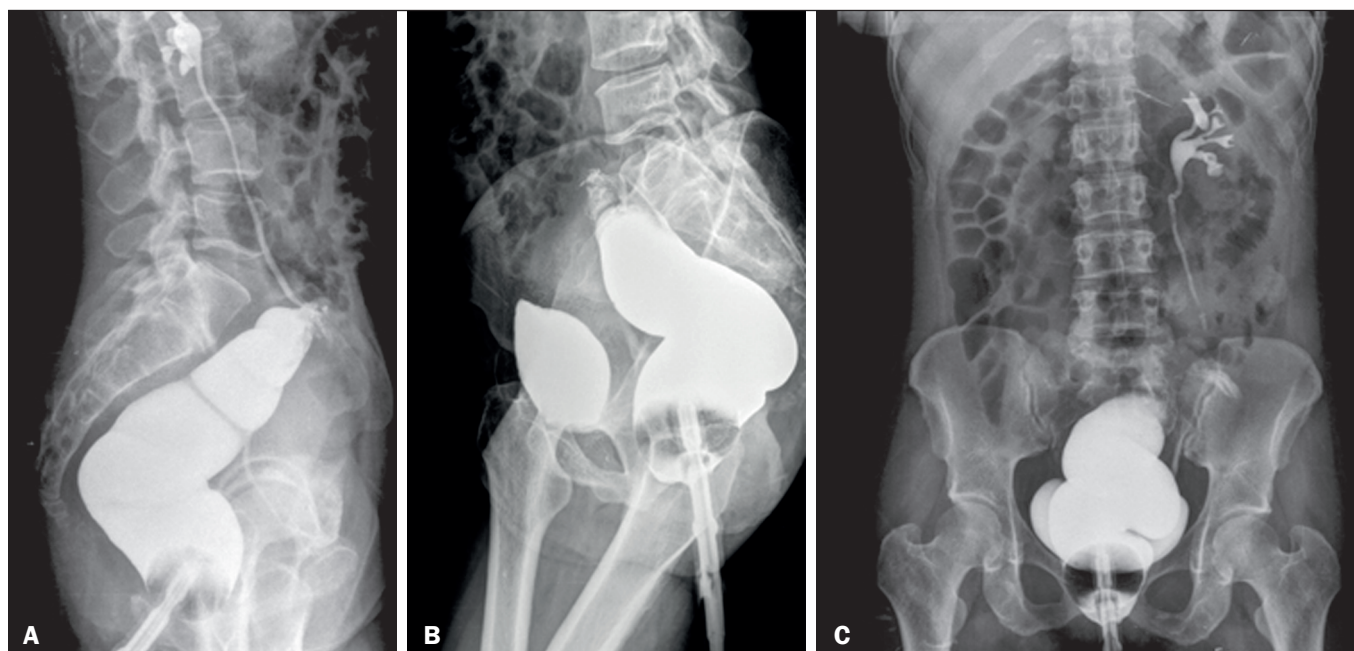


Figure 1. X-rays obtained after barium enema. A: Lateral view showing initial opacification of the rectum, remaining distal colon, ureter, and left renal collecting system. B: Lateral view showing late opacification of the bladder. C: Posteroanterior view showing late opacification of the bladder.

image analysis is important, in order to avoid an incorrect diagnosis of enterovesical fistula with vesicoureteral reflux.

Ureterocolic fistulas are rare and have a variety of causes, most being urological⁽¹⁾ or iatrogenic in origin, with an inflammatory, neoplastic, or idiopathic etiology. The recent increase in the number of ureteroscopic and laparoscopic procedures has greatly increased the incidence of ureterocolic fistulas⁽²⁾, because surgical manipulation generates inflammation that affects the ureter and leads to their formation⁽³⁾. Anatomically, most cases involve the right ureter, in its upper and middle thirds, rarely occurring on the left^(1,4,5).

The most common symptom of ureterocolic fistula is non-specific abdominal pain, typically on the flanks. Peritoneal irritation with psoas muscle involvement can lead to Morton's triad, consisting of low back pain, thigh adduction, and lower limb flexion. As a rule, there are no digestive symptoms, although some patients present with pneumaturia or fecaluria⁽⁶⁾.

Ureterocolic fistula can be diagnosed on contrast-enhanced examinations, such as X-rays obtained after a barium enema and retrograde cystourethrography⁽⁷⁾. Obtaining X-ray images after administration of a barium enema is the most reliable method of identifying the fistulous tract⁽⁸⁾. Although retrograde voiding cystourethrography can allow visualization of the fistulous tract, it can be difficult to identify the ureteral meatus with the method, because of the surrounding edema attributed to the inflammatory process and because of obstruction of the ureteral pathway by the fistula. Computed tomography is the most sensitive method for identifying pneumaturia and the fistulous tract.

The treatment of ureterocolic fistula consists in the surgical removal of the fistula. The technique employed varies depending on which portion of the ureter is affected, as well as on whether there is any accompanying renal dysfunction.

In the case reported here, the emergence of the ureterocolic fistula was iatrogenic, being attributed to previous surgical manipulation. A contrast-enhanced imaging examination was essential because it allowed the fistula to be corrected during the surgical procedure that was being planned, as well as allowing the patient to be referred to the nephrology department for the clinical monitoring of any renal dysfunction that might develop.

REFERENCES

- Sumiya H, Nagashima K, Naito H, et al. Ureteroduodenal fistula. *Urol Int.* 1985;40:33–5.
- Maeda Y, Nakashima S, Misaki T. Ureterocolic fistula secondary to colonic diverticulitis. *Urol Int.* 1998;5:610–2.
- Bensouda A, El Hader K, Sbihi L, et al. Entero-urinary fistula. *Tunis Med.* 2010;88:814–9.
- Desmond JM, Evans SE, Couch A, et al. Pyeloduodenal fistulae. A report of two cases and review of the literature. *Clin Radiol.* 1989;40:267–70.
- Infantino A, Dodi G, Lise M. Ureteroduodenal fistula. *Br J Surg.* 1987;74:499.
- Ducassou J, Richaud C, Duvainage JF, et al. A rare etiology of ureterocolic fistula. *J Urol Nephrol (Paris).* 1977;83:252–4.
- Conde Santos G, Griñó Garreta J, Bielsa Gali O, et al. Uretero-colonic fistula in non-functioning ureter. *Arch Esp Urol.* 2001;54:1126–9.
- Cirocco WC, Priolo SR, Golub RW. Spontaneous ureterocolic fistula: a rare complication of diverticular disease. *Am Surg.* 1994;60:832–5.

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Lymphocytic interstitial pneumonia and pulmonary amyloidosis in Sjögren's syndrome

Dear Editor,

A 72-year-old male patient who was a former light smoker presented with a complaint of dyspnea. In 2014, he had been diagnosed with Sjögren's syndrome during investigation of thrombocytopenia identified on a routine laboratory test. An X-ray performed prior to transurethral resection of the prostate showed pulmonary nodules. Further evaluation with computed tomography (CT) of the chest revealed multiple thin-walled pulmonary cysts in the peribronchovascular and subpleural regions of both lungs, predominantly in the middle and lower lung fields, together with solid, irregular, partially calcified nodules, some in close proximity to the cysts (Figure 1). A biopsy of the largest nodule revealed fragments of lung parenchyma with lymphocytic infiltrate and proteinaceous fibrin filling the alveolar spaces, with degenerated red blood cells (ghost cells), sometimes forming hyaline membranes. Complementary analysis of the material showed a light chain amyloidosis (kappa) peptide profile.

Sjögren's syndrome is an autoimmune disease in which lymphocytes attack the glands that generate saliva and tears⁽¹⁾. Many patients with Sjögren's syndrome develop interstitial lung diseases such as lymphocytic interstitial pneumonia (LIP), amyloidosis, follicular bronchiolitis, and even lymphoma^(1,2). On CT, LIP can manifest as ground-glass opacity or consolidations, as well as

septal thickening, centrilobular nodules, and cysts⁽³⁾. Cysts are believed to be formed by air trapping caused by a check-valve mechanism, with airway dilation distal to bronchiolar obstruction caused by lymphocytic infiltrate, and can be the only residual findings in chronic cases^(3,4).

Amyloidosis occurs due to excessive formation and deposition of certain proteins in an abnormal fibrillar pattern, resulting in malfunction of the affected organ^(3,4). Pulmonary nodular amyloidosis typically manifests as multiple nodules, of varying attenuation, which can cavitate^(3,4). Some are associated with mucosa-associated lymphoid tissue lymphoma^(3,4). In the clinical context of Sjögren's syndrome, calcification within a nodule is more consistent with amyloid nodules⁽²⁾. More rarely, amyloidosis can also lead to the formation of pulmonary cysts, of varying sizes^(3,4). The mechanism of cyst formation is uncertain and is believed to involve a check-valve mechanism secondary to narrowing of the airways, caused by the accumulation of inflammatory or amyloid cells or by capillary rupture due to amyloid deposition with alveolar destruction and cyst formation⁽³⁾. In alveolar-septal amyloidosis, the CT findings include septal thickening and ground-glass opacity, whereas CT shows circumferential thickening of the tracheobronchial wall in the more common form of the disease^(3–5).

The prognosis for patients with amyloidosis and LIP varies, the condition resolving in some patients, whereas it progresses to pulmonary fibrosis and respiratory failure in others⁽³⁾. Although there is no cure, corticosteroids can be used