

## Abdominal Distention in a Patient on Peritoneal Dialysis

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### Case Description

A 66-year-old Caucasian man with a failing cardiac transplant, transfusion-dependent myelodysplastic syndrome, and ESKD from calcineurin inhibitor toxicity on peritoneal dialysis (PD) was admitted with complaints of acute onset of shortness of breath after suspected aspiration, and progressive abdominal distention. Physical examination revealed crepitations in the right lung base and distended abdomen that was dull on percussion in the flanks, as well as bilateral inguinal hernias. Chest x-ray confirmed right lower lobe patchy pneumonitis consistent with aspiration along with mild cardiomegaly. Because his symptoms persisted despite antibiotics and achieving daily ultrafiltration in excess of 1 L with PD, a computed tomography (CT) abdomen scan with oral contrast was performed that showed extensive diffuse, nonseptating, hypodense material with Hounsfield units of  $-110$  (consistent with fat) in the retroperitoneum. The kidneys were displaced anteriorly (Figure 1A) by this material, as were the bowel loops. The coiled PD catheter was also displaced outside the pelvis and anteriorly (Figure 1B). There was no loculated ascites, localized neoplasm, or lymphadenopathy identified and subcutaneous fat thickness was normal. Overall findings were consistent with diffuse retroperitoneal lipomatosis.

Retroperitoneal lipomatosis is a rare and benign condition with predominance in men that results from the overgrowth of mature adipose tissue in the retroperitoneal compartment. Presentations are nonspecific, including progressive abdominal pain, pelvic fullness, constipation, and urinary obstruction (1). Although PD is associated with gain in fat mass and obesity (2), diffuse retroperitoneal lipomatosis has not been reported in the PD population. Because it can lead to diminished intraperitoneal space and consequent reduction in solute clearances, infusion of dialysate can also increase intraabdominal pressure, leading to diaphragmatic splinting, hernia,

gastroesophageal reflux, and aspiration. CT scan and magnetic resonance imaging (MRI) are the investigations of choice with distinctive features (3). On CT scan, the lesion appears as a diffuse, nonenhancing, and homogenous mass of fat density, with some internal septae in the retroperitoneum and an absence of solid components, whereas on MRI it appears homogenous and hyperintense on both T1- and T2-weighted images, without enhancement on postcontrast studies and suppression of signal on fat-saturated sequences (1,3). Biopsy of the lesions is recommended in localized lesions to differentiate the important potential etiologies, which include lipoma, liposarcoma, and myelolipoma. Treatment is usually conservative, with surgical excision reserved for patients with severe symptoms.

### Teaching Points

- Abdominal distention in patients on PD without catheter malfunction should be investigated by imaging studies.
- Retroperitoneal lipomatosis is a rare cause of abdominal distention, with distinctive features on CT and MRI scans.
- Diffuse retroperitoneal lipomatosis in patients on PD can lead to reduced solute clearances as well as complications related to increased intraperitoneal pressure.
- Biopsy of the lesion is recommended if lesions are localized, and treatment is usually conservative with surgical excision reserved for patients with severe symptoms.

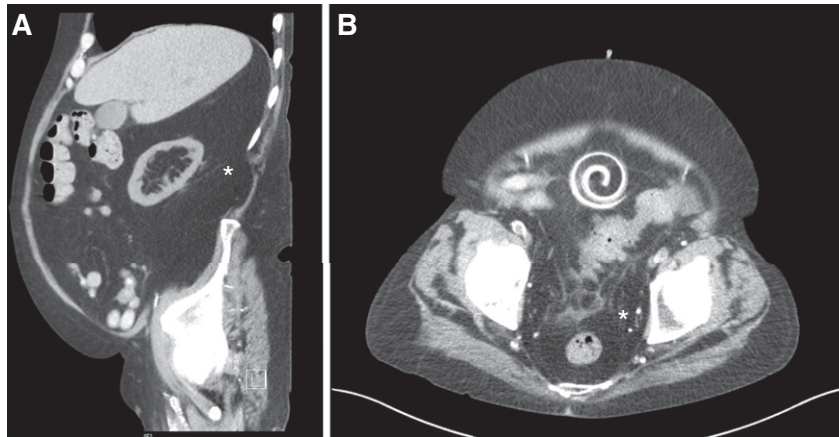
### Disclosures

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**Figure 1. | Computed tomography of the abdomen with oral contrast.** The retroperitoneal lipomatosis appears as a diffuse and homogenous lesion (\*) displacing the kidney anteriorly (A). The lipomatosis (\*) is also displacing the coiled peritoneal dialysis catheter anteriorly (B).

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#### Author Contributions

J. Li wrote the original draft; K. Sud was responsible for supervision, and reviewed and edited the manuscript.

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