

# Prolonged Diarrhea, Protein Losing Enteropathy, and Intestinal Perforation: An Illustrative Case of HIV-Associated Kaposi Sarcoma

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## Abstract

A 24 year-old male with AIDS, chronic non-bloody diarrhea, abdominal pain, and anasarca, developed a jejunal perforation. This case highlights a constellation of rare findings associated with Kaposi's sarcoma – GI lesions in the absence of cutaneous lesions, protein losing enteropathy with anasarca, and intestinal perforation.

## CASE REPORT

A 24 year old male with AIDS (CD4 count 4 cells/mm<sup>3</sup>, HIV viral load 29,500 copies/ml) presented with 2 months of non-bloody diarrhea, abdominal pain, fatigue, and subjective fevers. He was being treated presumptively for *Clostridium difficile* colitis (prior positive cytotoxin) and MAI, without microbiologic confirmation or clinical response. Past medical history included *Pneumocystis jirovecii* pneumonia, cytomegalovirus (CMV) retinitis with retinal implant, cryptococcal meningitis, and medical nonadherence. He engaged in cocaine and marijuana use, and sex with men. Medications included valganciclovir, dapsone, metronidazole, clarithromycin, and ethambutol. He had been off HAART for 6 months. His temperature was 35.4°C, heart rate 90 beats per minute, and blood pressure 80/50 mmHg without orthostasis. He had anasarca with severe pitting edema of the upper and lower extremities, scrotum and sacrum. Cardiopulmonary exam was unremarkable. His abdomen was distended and nontender, with shifting dullness and a fluid wave. Detailed examination of the skin and mucosal membranes revealed no lesions. White blood cell count was 5,600 cells/mm<sup>3</sup>, hematocrit was 23.9%, and platelet count was 39,000/mm<sup>3</sup>; kidney and liver function tests were normal, serum protein was 3.0 g/dL, and albumin was 1.0 g/dL. Random urine protein and creatinine were 51 mg/dL and 50 mg/dL, respectively. Stool studies revealed fecal leukocytes, but were negative for *C. difficile*, other pathogenic bacteria, and parasites. Plasma CMV PCR was 6610 copies/mL. Bacterial and mycobacterial blood cultures

were negative. Abdominal CT scan was unremarkable except for ascites.

Treatment with intravenous ganciclovir was initiated for CMV, and oral vancomycin was started pending results of repeat stool studies for *C. difficile*. Endoscopy and paracentesis were recommended, but declined by the patient. On hospital day 9, he developed fever to 38.5° C, tachycardia, worsening hypotension, and peripheral leukocytosis. Abdominal examination revealed hypoactive bowel sounds, diffuse rebound tenderness, and guarding. Abdominal CT scan showed ascites and new right sided colonic thickening consistent with colitis.

An emergent exploratory laparotomy for the presumed diagnosis of *C. difficile* colitis was notable for cloudy white ascites and multiple, friable, reddish-purple coliform growths throughout the small bowel and mesentery (Figure 1), one of which had perforated and was surgically repaired.

**Figure 1**

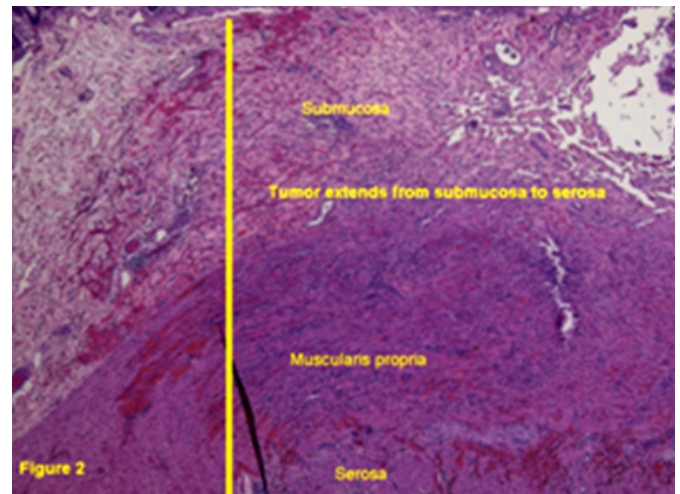
Figure 1: Reddish-purple coliform growths throughout the small bowel and mesentery seen intraoperatively.



There was thickening of the peritoneum and visceral walls, attributed to inflammation from peritonitis, but no other abnormal pathology was noted. The colon was grossly unremarkable, but due to the patient's sepsis, colitis on CT imaging, perforation, and concern for fulminant and refractory *C. difficile* colitis, a subtotal colectomy was performed. Pathological examination revealed spindle cells consistent with Kaposi's sarcoma (KS) at multiple sites throughout the colon with the largest focus of tumor involving the cecum (Figure 2).

**Figure 2**

Figure 2: Kaposi-sarcoma-40X Hematoxylin and eosin stained section: Low power view of the bowel demonstrating Kaposi's sarcoma extending from the level of the submucosa to the serosa, featuring the classic findings of monotonous spindle-shaped cells and extravasated erythrocytes. Immunohistochemistry showed reactivity for CD31, a vascular marker (not shown).



There was no evidence of infectious colitis due to CMV, *C. difficile* or other pathogens. The patient declined therapy for HIV or KS. His post-operative course was complicated by an intra-abdominal abscess, manifestations of hypoalbuminemia (recurrent pericardial and pleural effusions), intravenous catheter-associated bacteremia, and ventilator associated pneumonia. He subsequently declined further interventions except comfort measures, and expired shortly thereafter.

## DISCUSSION

Epidemic KS is the most common HIV-associated malignancy. Though classically limited to the skin, KS can be aggressive and can involve nearly every organ. Visceral KS rarely occurs in the absence of cutaneous lesions, but is frequently present once cutaneous KS is diagnosed. At autopsy, visceral KS has been recognized in 30-77% of patients with a history of cutaneous KS lesions<sup>1,2,3,4,5,6</sup>.

In HIV-associated KS, gastrointestinal lesions are typically asymptomatic, but can cause diarrhea, gastrointestinal bleeding, bowel obstruction, mesenteric cyst formation, protein-losing enteropathy, intussusception, and diverticulitis<sup>2,7</sup>. To our knowledge, there are only 3 prior case reports of intestinal perforation attributed solely to KS<sup>7,8,9</sup>, with the few other reported cases of KS-associated intestinal perforation complicated by CMV vasculitis<sup>10</sup>,

mycobacteria and candida<sup>11</sup>. In our case, histopathology showed no other contributing factors, further emphasizing that isolated gastrointestinal KS can have catastrophic outcomes.

Protein-losing enteropathy (PLE) is frequently seen in AIDS, and can be caused by infections (e.g. cryptosporidium, giardia, CMV) or malignancy (e.g. lymphoma), or be idiopathic (e.g. HIV enteropathy)<sup>12</sup>. PLE can result from mucosal erosion, increased permeability, or lymphatic obstruction -- all of which can occur in KS. In a series of 83 HIV patients evaluated for PLE by measure of fecal alpha-1 antitrypsin, 33% with normal serum albumin, and 70% with hypoalbuminemia were found to have PLE. Of the patients who underwent GI evaluation, the five percent that were identified to have KS had the highest degree of protein loss. KS is an unusual, but important cause of PLE in HIV patients<sup>13,14,15</sup>.

In our patient, chronic diarrhea, profound hypoalbuminemia and anasarca were a result of KS-associated PLE, in the setting of a large tumor burden in the intestines and mesentery, and in the absence of significant hepatic or renal disease. This case illustrates that even in the absence of cutaneous findings, KS can cause PLE and visceral perforation resulting in significant morbidity.

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