A 71-year-old male presented to hospital with 3 months of increasing abdominal distention and pain. He underwent CT chest/abdomen/pelvis which showed large volume ascites and gastric wall thickening, particularly in the antrum. He had no history of significant alcohol use or other risk factors for cirrhosis.

He underwent paracentesis, and 3 litres of homogenously bloody ascites fluid was removed (Figure 1). Subsequent paracenteses from both sides of the abdomen confirmed the ascites was homogenously bloody throughout the abdomen. Ascitic analyses were negative for spontaneous bacterial peritonitis. The serum ascites albumin gradient was −6 g/L. Ascites cytology showed discohesive malignant cells suggestive of adenocarcinoma of unknown origin. Serological investigations revealed an elevated CA 19-9 of 5318.3 U/mL, with normal carcinoembryonic antigen and alpha fetoprotein.

Upper endoscopy showed an approximately 10-cm malignant-appearing circumferential mass just proximal to the gastric antrum. Gastric biopsies showed expression of CKAE1/AE3 by immunohistochemistry with Alcian blue staining of mucin vacuoles in tumor cells, supporting a diagnosis of poorly differentiated adenocarcinoma (Figure 2). The patient elected palliative care and passed away from complications of his malignancy.

Homogenously bloody ascites can be a startling finding for healthcare providers. While a traumatic tap may result in small amounts of blood leaking into the ascitic fluid from the perforation of superficial vessels, the fluid is often
Figure 2. Pathologist review shows a cytology specimen showing discohesive malignant cells with nuclear pleomorphism and irregular nuclear contours (A). One malignant cell has a large cytoplasmic mucin vacuole and an eccentric nucleus (arrow), suggestive of adenocarcinoma (B). Gastric biopsy with sheets of malignant cells infiltrating the mucosa (C). Malignant cells express CKAE1/AE3 by immunohistochemistry, indicating carcinoma (D). Malignant cells at high magnification include several signet ring cells (E: arrowheads). Alcian blue highlights mucin vacuoles in tumor cells, supporting a diagnosis of poorly differentiated adenocarcinoma (F).
heterogeneously bloody as the red color clears with further aspiration of the ascites fluid. The differential diagnosis for bloody ascites includes hepatocellular carcinoma or other malignancy, hemorrhagic pancreatitis, perforated ulcers/varices, blunt trauma (e.g., motor vehicle collision), and iatrogenic (suggested by recent paracentesis, transjugular intrahepatic portosystemic shunt, or other intraabdominal procedure). Contrary to popular belief, tuberculous peritonitis is rarely bloody. Bloody ascites secondary to trauma, hemorrhagic pancreatitis, or perforated ulcers/varices will generally be evident from history or result in an acute presentation. Thus, the presence of bloody ascites in an otherwise relatively asymptomatic individual should prompt a search for malignancy. In addition, this case highlights a rare presentation of gastric adenocarcinoma as bloody ascites.

Consent

The patient signed a consent form allowing the use of his health information for the purpose of presenting the de-identified information to publish as a clinical image.

Author Contributions

Felix Zhou: Conception and design; procurement of data; analysis of data; drafting of the original manuscript; critical review of the original manuscript. Ari Morgenthau: Conception and design; critical review of the original manuscript. Tom Arnason: Procurement of data; critical review of the original manuscript. Allen Tran: Conception and design; critical review of the original manuscript.

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