An unusual colonoscopic complication of inflammatory bowel disease

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QUESTION

A 24-year-old male presents a 2-year history of abdominal pain, diarrhea, and weight loss. Currently, he has 8-10 episodes of diarrhea per day with no blood and wakes up with abdominal pain. He was initially thought to have inflammatory bowel disease and started on corticosteroid treatment; however, he used his medication irregularly, taking 20 mg of steroid for 2-3 days when severe symptoms appeared.

On physical examination, vital signs were normal, and the cardiovascular and respiratory exam was unremarkable. Mild tenderness in the right lower quadrant was found during abdominal examination.

The laboratory tests revealed a WBC count of $8,14\times10^3$ / µL, Hb 13,8 g/dL, and Plt 208×10^3/µL. The level of C-reactive protein (2,9 g/dL) was lower than the normal range. The levels of electrolytes and liver enzymes were normal. Stool culture, stool sample for amebiasis, ova and parasites, and *Clostridium difficile* were all found to be negative. The calprotectin level was very high (1230).

Endoscopic examination of stomach and duodenum was normal. There was a narrowing in the distal part of the sigmoid colon, which did not allow the passage of an Olympus colonoscope (H180 AL-2807152); therefore, colonoscopy was completed using a gastroscope. Terminal ileum was normal in appearance, and endoscopic findings of the colon ranged from erythema, loss of vascular pattern, friability, and spontaneous bleeding to ulceration. Additionally, there were skip areas in the colon. Multiple biopsies were performed on samples from the ileum and all other parts of colon.

After gastroscopy and colonoscopy, abdominal computerized tomography was performed (Figures 1-3).

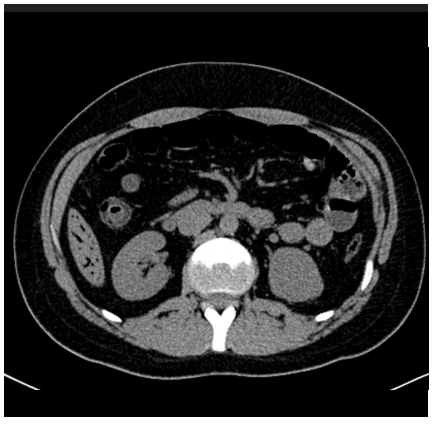

Figure 1. Abdominal computerized tomography showing diffuse portal venous gas in the liver as a complication of colonoscopic biopsy.

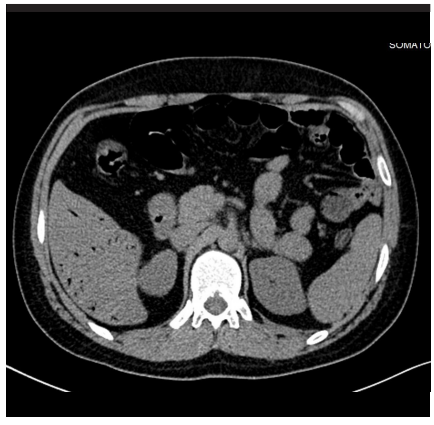

Figure 2. Hepatic portal venous gas.

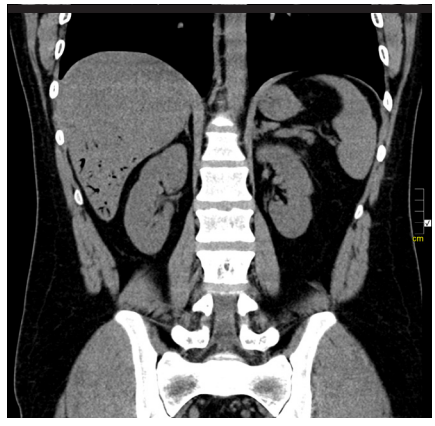

Figure 3. CT coronal image of hepatic portal venous gas in right lobe of liver.

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ANSWER

What is the patient's radiologic diagnosis according to the abdominal CT?

A submucosal tear in the ascending colon during colonoscopic biopsy led to the presence of gas in portal vein and its leakage through the venous system without a clear perforation. Hepatic portal vein gas (HPVG) can be caused by various diseases, the most common being intestinal ischemia or necrosis, followed by bowel obstruction, gastric ulcer, closed abdominal trauma, and various abdominal diseases, such as inflammatory bowel disease and diverticulitis (1, 2). HPVG is a rare complication related to endoscopic and radiological procedures.

HPVG is mainly diagnosed by X-ray, abdominal CT, and ultrasonography. The CT scan has a higher sensitivity for diagnosing HPVG than other methods and can help detect underlying diseases. HPVG has to be differentiated from air in the biliary tract (3).

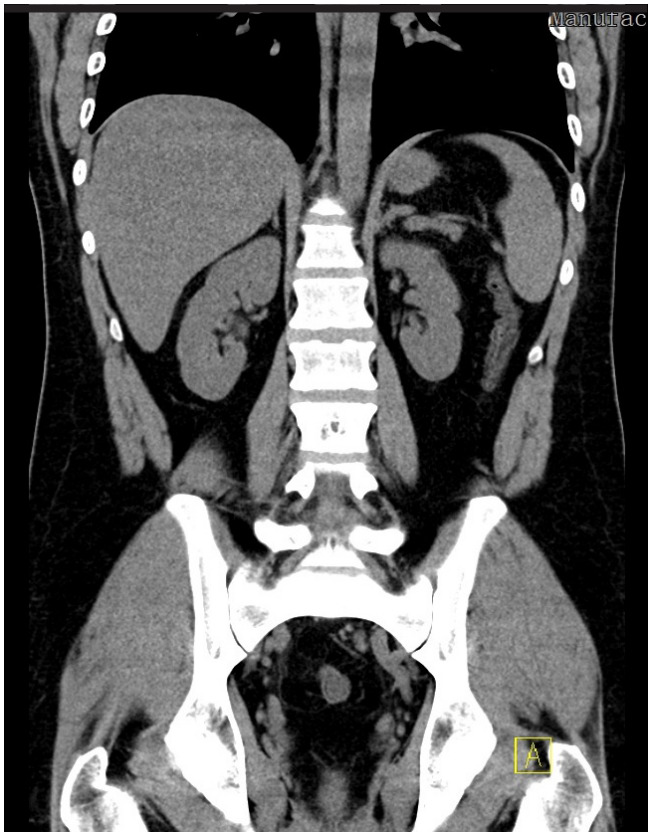

Figure 4. CT showing complete resolution of HPVG.

The pathophysiology of air entering a portal vein includes intestinal mucosal damage, which allows the air to enter the venules that are connected to the portal vein (3, 4).

HPVG requires conservative and/or surgical treatment, which should be based on the underlying cause of the disease (4, 5). Our patient was followed conservatively and provided intravenous antibiotics; he also underwent fluid replacement (Figure 4).

It is critical that gastroenterologists are aware of the differential diagnosis, pathogenesis, diagnostic approach, and management of HPVG.

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