

Diagnosis and Endovascular Management of Life-threatening Rectal Bleeding

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CASE SUMMARY

A 61-year-old was admitted for management of ascites related to alcoholic cirrhosis. The patient also reported a history of lower gastrointestinal (GI) bleeding from colonic angiodysplasia. During the inpatient stay, they experienced mild bleeding from rectal varices, which were successfully banded at endoscopy.

Forty-eight hours after endoscopy, the patient developed massive lower GI bleeding with hypotension, requiring initiation of the hospital's massive infusion protocol. Interventional radiology (IR) was consulted for arterial embolization.

The patient had ongoing massive lower GI hemorrhage and was on multiple vasopressors. The medical intensivists felt the patient would not survive two separate transfers and requested to bypass an initial CT angiography and bring the patient directly to the IR suite.

This patient had known cirrhotic liver disease with portal colopathy and recently banded rectal varices that were thought to be an unlikely source for the current hemorrhage because they were believed to have been successfully treated. Given their history of colonic angiodysplasia, this was suspected as the current source of hemorrhage.

With the patient on his way to the IR suite and ongoing life-threatening hemorrhage, identifying the etiology of the bleed became critical, as the approach would be angiography/embolization or placement of a transjugular intrahepatic portocaval shunt (TIPS) for an arterial or venous bleed, respectively.

By utilizing our 4DCT Angiography suite, we immediately performed a CTA on the same table as the intervention. Noncontrast, arterial, venous, and delayed phases were obtained.

IMAGING FINDINGS

CT angiography of the abdomen and pelvis demonstrated no active contrast extravasation on the arterial phase

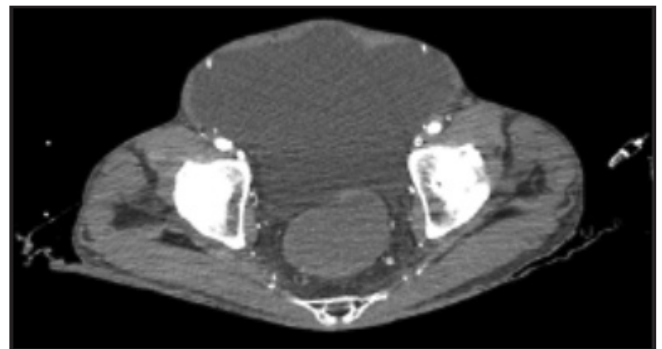


FIGURE 1. Arterial phase CTA demonstrating no active extravasation.

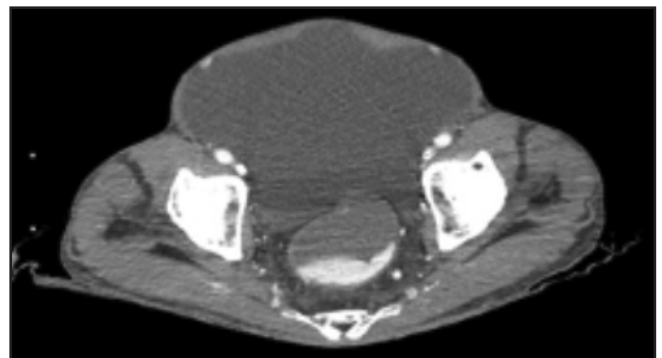


FIGURE 2. Venous phase CTA demonstrating active extravasation in the rectum.

(Figure 1). Venous- and delayed-phase images revealed contrast extravasation in the rectum adjacent to prominent rectal varices (Figure 2).

A TIPS procedure was emergently performed based on the CTA finding of active venous bleeding from large rectal varices.

Initial venogram of the portal vein demonstrated hepatofugal flow with retrograde flow down both the superior and inferior mesenteric veins (Figure 3). The portal system was successfully decompressed following TIPS placement (Figure 4). While hepatopetal flow was restored in both the

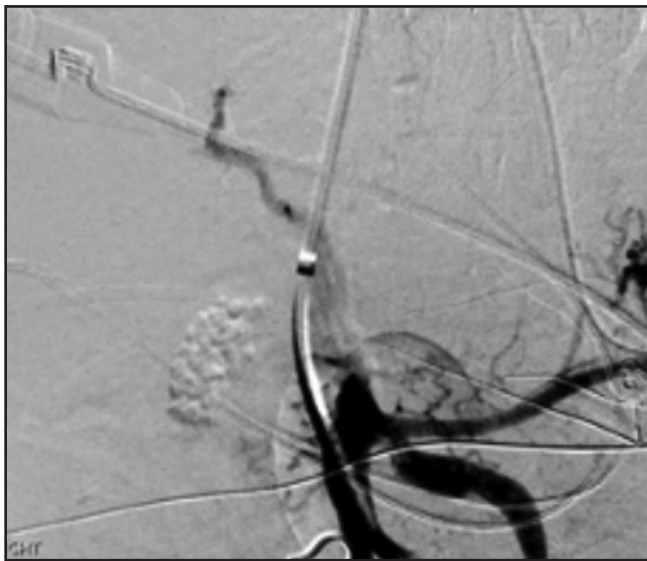


FIGURE 3. Initial venogram of the portal vein demonstrated hepatofugal flow with retrograde flow down both the superior and inferior mesenteric veins.

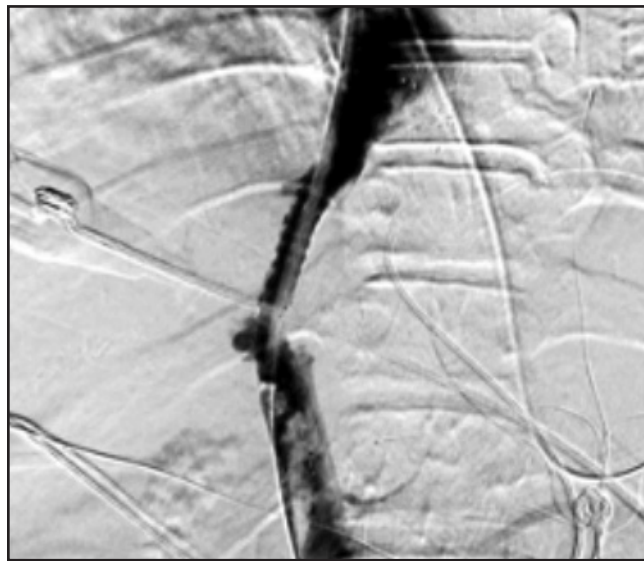


FIGURE 4. Successful decompression of the portal system following TIPS placement.

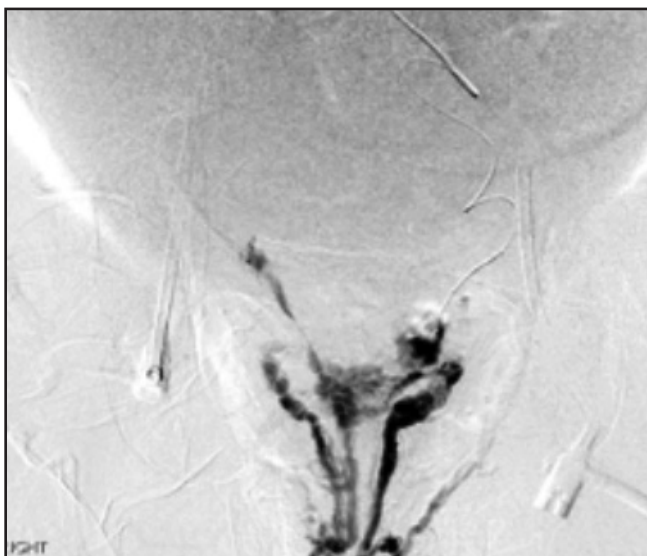


FIGURE 5. Venogram from the IMV demonstrating robust rectal varices with small-volume active extravasation in the vicinity of the left rectal wall.

portal vein and superior mesenteric vein, flow in the inferior mesenteric vein (IMV) remained retrograde and sluggish.

INTERVENTION

Selective catheterization of the IMV was performed and venogram was obtained demonstrating robust rectal varices with small-volume active extravasation in the vicinity of the left rectal wall (Figure 5), correlating to the findings on initial CTA. The actively bleeding varix was successfully embolized with coils (Figure 6). Proceeding in this fashion and eliminat-

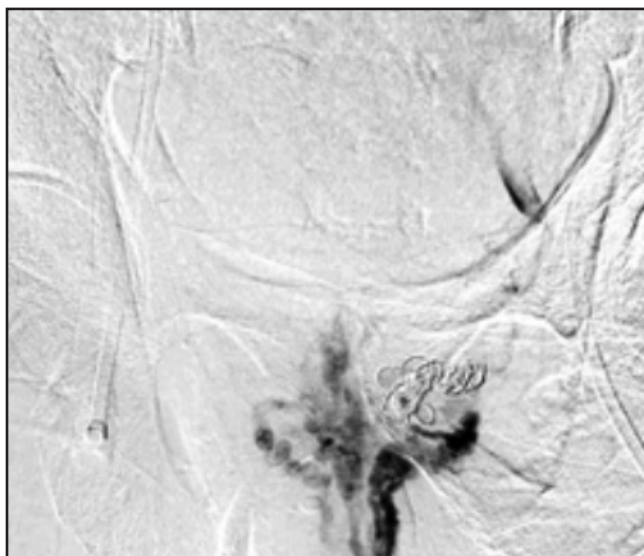


FIGURE 6. Successful coil embolization of the actively bleeding varix.

ing the need to transfer a hemodynamically unstable patient to multiple locations saved a minimum of 30 minutes, allowing rapid and efficient treatment this critically ill patient.

DISCUSSION

Identifying the exact source and location of lower GI bleeding can often prove challenging. The most common causes for hemorrhage include diverticulosis, angiodysplasia, and internal hemorrhoids. Bleeding from these sources will typically arrest spontaneously. Intervention may be necessary

in cases of recurrent, refractory, or hemodynamically significant hemorrhage. These interventions include endoscopy, angiography with embolization, and/or surgery.

Initial assessment should include a clinical history and physical exam. While patients with previous episodes of hemorrhage will likely re-bleed from the same source, care should be taken to assess all potential sites of bleeding to avoid the “satisfaction of search” phenomenon. Differentiating between an arterial source versus bleeding from gastrointestinal ectopic varices or portal colopathy can also prove challenging.

Dilated portosystemic varices outside of the gastroesophageal junction account for only 2-5%¹⁻³ of variceal bleeds, yet they carry a mortality rate as high as 40%.^{4,5} Of these, over 60% are rectal varices.⁶ Rectal varices occur as a result of communication between the superior rectal vein and the middle or inferior rectal veins. These veins dilate owing to high pressure from reversed flow in the draining veins of this region.

Although rectal variceal rupture is rare (0.5-3.6%),⁷⁻¹⁰ life-threatening hemorrhage can result when it does occur. In addition to rectal varices, portal colopathy can result in hemorrhage. This pathology is defined by mucosal changes that can produce telangiectasias and angiodysplastic-like lesions.

Lower endoscopy remains the gold standard for initial assessment and localization of bleeding in stable patients. This changes in the setting of massive, life-threatening lower GI hemorrhage. Bleeding is often so brisk that it cannot be identified or controlled endoscopically. At our institution, the next step is to obtain a CTA followed by embolization.

Conclusion

Identifying the source of massive lower GI hemorrhage can prove challenging, especially in patients with multiple potential etiologies. Good outcomes can be achieved, however, with rapid triage, diagnosis, and the flexibility to quickly change the treatment approach when warranted.

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