# *Ileal conduit stomal hemorrhage as the first presentation of end stage liver disease: case report and review of the literature*

Luke T. Lavallée, MD,[1] Greg Trottier, MD,[2] Greg Bailly, MD[2]
[1]Department of Urology, University of Ottawa, Ottawa, Ontario, Canada
[2]Department of Urology, Dalhousie University, Halifax, Nova Scotia, Canada

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*Hemorrhage from an ileal conduit is a rare and potentially life threatening event with only 17 cases reported in the medical literature. We present the unique case of an 83-year-old patient with acute stomal hemorrhage as the first sign of underlying liver disease and portal hypertension. Bleeding was controlled with conservative measures including balloon tamponade, betablockade, octreotide, and suture ligation. Our review of the literature revealed multiple management options for stomal hemorrhage with most authors advocating definitive management via portosystemic shunt creation, either surgically, or with transjugular intrahepatic portosystemic shunt (TIPS). In all cases the incidence of rebleeding associated with the procedure, and the ability of the patient to undergo invasive procedures, must be considered carefully.*

**Key Words:** cystectomy, hemorrhage, ileal conduit

## Case report

An 83-year-old man presented to a community hospital with a 1 month history of severe bleeding from his ileal conduit. History includes previous cystectomy for bladder cancer 20 years previous, and cerebral aneurysm, osteomyelitis, and remote malaria. On admission to the hospital, he had signs of hemorrhagic shock including hypotension, a hemoglobin of 59 g/l, and platelets of 66 x10^9/l with bleeding that was thought to be originating from within his ileal conduit, suspicious for hematuria. Emergent management included multiple blood transfusions and balloon tamponade of bleeding with a foley catheter. The stoma faceplate was removed. The stoma had a normal rosebud appearance, with no retraction, stenosis, or evidence of damage related to a malpositioned faceplate. Point bleeding was observed to originate along the edge of the stoma as opposed to coming from inside. Stomal hemorrhage was controlled with bedside absorbable suture ligation.

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Address correspondence to Dr. Luke T. Lavallée, Department of Urology, The Ottawa Hospital, 1053 Carling Avenue, Ottawa, Ontario K1Y 4E9 Canada

Once stabilized, the patient underwent a computed tomography scan of the abdomen and pelvis. The findings were consistent with severe liver disease including ascites, liver changes consistent with chronic liver disease, a prominent portal vein, and secondary splenomegaly. Multiple dilated collateral vessels at the splenic hilum, paraumbilical region, and most notably, at the stoma site, were visualized, Figures 1 and 2. Specifically, two approximately 1cm vessels were seen entering the stoma. These findings indicated that portal hypertension and subcutaneous varices secondary to undiagnosed liver disease were the factors most responsible for the patients' massive stoma bleed.

The patient had no prior known history of liver disease. Hepatology was consulted and instituted routine hepatology investigations including liver enzyme levels, coagulation studies, bilirubin, hepatitis B surface antigen, alpha 1 antitrypsin, ceruloplasmin, and immunoglobulin studies, all of which were normal. The only possible explanation for liver failure in this case was remote malaria treatment combined with mild alcohol consumption. Nadolol and octreotide therapy were initiated.

The patient's stomal hemorrhage remained well controlled, and on day 10 he was discharged from hospital on nadolol with follow up planned in the hepatology clinic for further work up of his end stage liver disease. Unfortunately, the patient expired months later during a subsequent admission related to urosepsis. To our knowledge he did not have any bleeding in the interim.

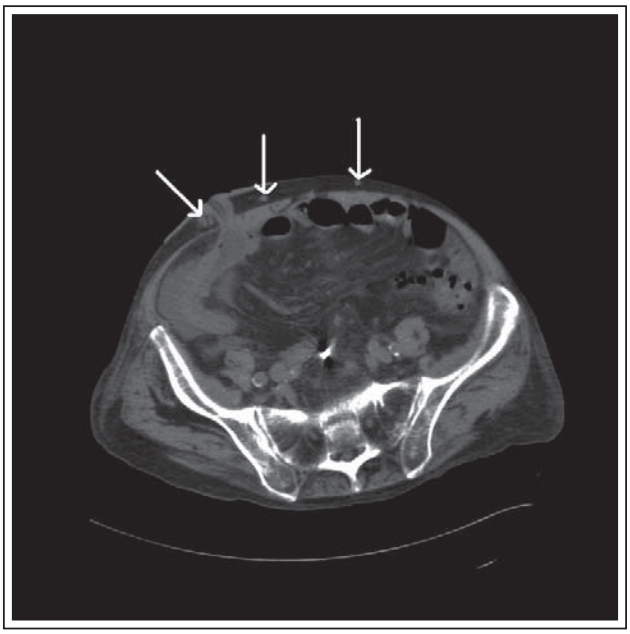

**Figure 1.** Non-contrast computed tomography scan of the abdomen revealing marked peristoma collateral vessel/varices formation secondary to portal hypertension.

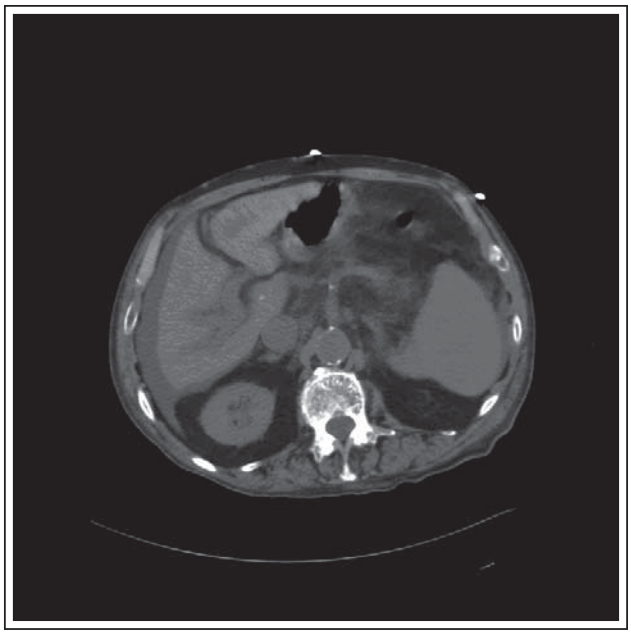

**Figure 2.** Non-contrast computed tomography scan of the abdomen with signs of portal hypertension including ascites, prominent portal/splenic veins, and splenomegaly.

## Discussion

Varicoceal hemorrhage from the stoma site of patients with colostomies, ileostomies, and ileal conduit secondary to end stage liver disease and portal hypertension has been a recognized phenomenon since 1968.[1] Stoma varices are the result of increased resistance to portal venous flow which leads to the development of venous communications at the stoma mucocutaneous junction creating a portasystemic collateral circulation. Our review of the medical literature revealed 17 reported cases of bleeding from ileal conduit stomas since 1968, making this a rare yet important entity for the urologist to be aware of, as it may be associated with life threatening massive blood loss.[1,2,3-10]

Variceal stomal bleeding can be confused with bleeding from within the conduit or upper tracts and thus a high degree of suspicion must be maintained, especially in patients with a history of liver disease or known risk factors. Our case was unique in that ileal conduit variceal hemorrhage was the first sign of end stage liver disease in the patient. The diagnosis may

be suggested by recurrent bleeding from the stoma site in a patient with other signs and symptoms of portal hypertension, such as known esophageal varices, internal hemorrhoids, ascites, caput medusa, and splenomegaly.[1,11] Patients may also exhibit a degree of hepatic encephalopathy, pancytopenia secondary to splenic sequestration, or renal failure secondary to hepatorenal syndrome.[1,11] The diagnosis can be confirmed with selective arteriography, stomal endoscopy, or computed tomography (CT) scan.[1] In our patient, CT scan had the added benefit of revealing splenomegaly, ascites, a prominent portal vein, and liver changes which confirmed the patients previously undiagnosed liver disease.

Once the diagnosis of variceal bleeding from an ileal conduit is established, multiple management options are available as demonstrated by previous case reports. Conservative treatments include, local compression, beta blockade to reduce portal blood flow via decreased cardiac output, somatostatin analogues to reduce the hepatic venous pressure gradient, local sclerotherapy, suture ligation, and balloon tamponade.[8,11] Drawbacks to conservative management may include a high recurrence rate of bleeding and the need for multiple interventions. A rebleeding rate of 100% was reported by Conte et al for all types of stoma's (ileal conduit , ileostomy, and colostomy) following suture ligation and sclerotherapy.[1]

More invasive treatment options include stomal manipulation, which involves surgically dividing the venous mucocutaneous connections between the portal and systemic system, in conjunction with the formal takedown and relocation of the stoma. These methods, as reported by Conte et al, were found to be associated with 100% rebleeding rates for all types of ostomies within 9 months.[1]

Historically, the most definitive therapy to correct bleeding and reduce the amount of rebleeding episodes for portal hypertension induced stomal hemorrhage has been to treat the underlying increase in portal pressure via the creation of a portosystemic shunt. Conte et al reported that only 1 of 10 patients with stomas who underwent a surgical shunt procedure had an episode of rebleeding.[1] More recently, the advent of transjugular intrahepatic portosystemic shunt (TIPS) has been advocated as an effective and less invasive alternative to surgical shunt creation as a method of correcting the underlying high portal pressure. Since 1994, four authors have reported using TIPS with satisfactory results.[2,3,5,7] Finally, transhepatic embolization of stomal varices has also been suggested as a successful method of treatment in patients who do not have an elevated portosystemic pressure gradient, and thus would not benefit from TIPS.[4]

Appropriate management of stomal hemorrhage must be selected based on patient comorbidities, life expectancy, the degree of portosystemic pressure gradient, and the suitability of the patient for invasive interventions. In all cases, the ideal selected therapy will stop the bleeding, have a low rebleeding rate within the patients' life time, low morbidity, prolong survival, and be cost effective.[1]

## Conclusion

Ileal conduit stomal hemorrhage is a rare and potentially life threatening event. It may present as the first sign of underlying liver disease. Urologists should be aware of this pathology and be familiar with the multiple options for management. Thus far, definitive relief of bleeding has best been achieved with surgical shunt creation or TIPS. □

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