Emergency Ileal Conduit Bleeding from Peristomal Varices due to Portal Hypertension

Christian Löhmann\textsuperscript{a} Christoph Sparwasser\textsuperscript{a} Carsten Hackenbroch\textsuperscript{b} Andreas Martinschek\textsuperscript{a}
Department of \textsuperscript{a}Urology and \textsuperscript{b}Diagnostic and Interventional Radiology and Neuroradiology, Federal Armed Forces Hospital of Ulm, Ulm, Germany

Key Words
Urinary diversion • Ileal conduit • Emergency • Bleeding • Portal hypertension • Transjugular intrahepatic portosystemic shunt

Abstract
An ileal conduit is a frequently used urinary diversion following cystectomy. Common complications include urinary tract infections, hydronephrosis due to stenosis of ureter and hernias. Hemodynamic-relevant bleeding from the conduit is a very rare occurrence. We report on a patient with massive bleeding from her ileal conduit due to intra-abdominal varices and portal hypertension and its diagnostic and therapeutic management by varices sclerotherapy. Even though bleeding from the conduit is very rare, the urologist should know how to manage this life-threatening complication.

Case Report
A 75-year-old female was admitted to our emergency room because of massive, hemodynamic-relevant bleeding from her conduit. Prior to hospitalization, she had received 1,500 ml of saline i.v. The physical examination revealed a hypotensive and tachycardia patient with signs of liver cirrhosis (icterus, ascites, and low coagulation). The urinary bag fixed on the conduit was completely filled with blood, while the hemoglobin was 7.0 g/dl and thrombocytes 64/nl.

The CT scan of the abdomen performed ruled out active arterial bleeding and any tumor of the renal pelvis or the ureter as a possible cause of the bleeding. Nevertheless, huge paraumbilical varices (fig. 1) were revealed. After initial assessment, the patient received transfusions of blood, thrombocytes, fresh frozen plasma, a prothrombin complex concentrate and fibrinogen and was transferred to the ICU for surveillance. The following day, endoscopic sclerotherapy of varices 5 mm proximal of the stoma was performed by the colleagues in gastroenterology. Following this, the patient remained stable and was discharged.

Discussion
Acute bleeding from an ileal conduit is a very rare complication of this frequently used urinary diversion, which is usually performed after cystectomy due to in-
Invasive urothelial cancer of the bladder. A review of the literature revealed 14 more reported cases. As well as patients with esophageal varices, patients with conduit bleeding usually suffer from portal hypertension and liver insufficiency.

Varices in places other than the gastro-esophageal region are called ectopic varices and their bleeding accounts for 1–5% of all varical bleeding [1].

It was necessary to perform diagnostics on our patient after hemodynamic stabilisation to find out the cause of the conduit bleeding and determine the proper therapy. Besides stomal varices tumors of the ureter, renal pelvis or the kidney can cause significant bleeding. Useful diagnostic tools are ultrasound, CT, retrograde pyelography and urine cytology. In cases of severe bleeding, additional blood tests, especially clotting tests, may show coagulation disorders which have to be treated to improve clotting [2]. Though there are no guidelines for the treatment of conduit bleeding, different approaches are described in several case reports. If the bleeding is superficial, stitches on the bleeding sites may be successful as a local procedure, though they pose the risk of damaging further vessels and the failure rate is 2 out of 3 [3]. Endoscopic sclerotherapy was not only performed in our approach, but several times before as a standard therapy for upper gastrointestinal bleeding. This technique has a high success rate, of up to 100%, but poses the risk of mucosal ulceration and necrosis [1, 3–5]. Selective embolisation of the bleeding vein is another very useful procedure in an emergency, the success rate being 88% [6]. Following embolisation, the formation of collaterals may trigger renewed bleeding [7, 8]. However, all local treatment techniques are emergency procedures and do not solve the main cause of the bleeding, which is portal hypertension. The transjugular intrahepatic portosystemic shunt (TIPS) is a technique that has been used by radiologists since the 1980s to reduce portal hypertension and its related complications [9]. This technique has also been used successfully for ectopic varices such as stomal varices with a rebleeding rate of 17–37%. The use of TIPS can eliminate the cause of the portal hypertension, but can also induce or increase hepatic encephalopathy [10–12]. Additionally, if it is known before, patients with portal hypertension should be evaluated for an other urinary diversion than ileal conduit.

**Conclusion**

A massive bleeding conduit is an acute challenge for urologists. A therapeutic step-by-step approach featuring initial hemodynamic stabilisation and local emergency procedures such as local stitches and sclerotherapy can be recommended. Endovascular embolisation may be another option after local therapeutic approaches have been taken. TIPS is a safe and approved technique for treating the cause of conduit bleeding, which is portal hypertension.

---

![Axial maximum intensity projection at the level of the stomal plate and abdominal volume rendering technique showing the extensive (i.e. parastomal) varices due to portal hypertension (white arrow) and the stomal plate (white arrowhead).](image)
References


