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State-of-the-art Interventional Radiology - Selected Cases / Vanguarda da Radiologia de Intervenção: Casos seleccionados

Massive Peristomal Bleeding – How to Act?

Hemorragia Massiva de Varizes Periestomais – Como Atuar?

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Abstract

Peristomal varices are rare ectopic varices in chronic liver disease. They develop at the enterocutaneous junction of a stoma and represent a portosystemic venous shunt between the portal circulation and venous systemic circulation of the abdominal wall. Peristomal varices are hardly visible on clinical examination and are not accessible on endoscopic evaluation, therefore their diagnosis generally only surge after the first bleeding episode. In most severe cases, variceal bleeding can quickly progress to hypovolemic shock, with an estimated mortality rate of 3 to 4% per hemorrhagic episode. Recent clinical reviews do not define the standard of care, due to the small number of cases described. In this article, we present a case of massive peristomal varices hemorrhage successfully treated by transhepatic percutaneous endovascular embolization.

Keywords

Ectopic variceal bleeding; Parastomal bleeding; Percutaneous transhepatic endovascular embolization.

Resumo

As varizes periestomais são varizes ectópicas raras na doença hepática crónica. Estas desenvolvem-se na junção enterocutânea do estoma e representam um shunt venoso portossistémico entre a circulação portal e a circulação venosa sistémica da parede abdominal. As varizes periestomais são dificilmente visíveis ao exame objetivo e não são acessíveis na avaliação endoscópica, portanto o seu diagnóstico surge geralmente só após o primeiro episódio hemorrágico. Nos casos mais graves, a hemorragia das varizes pode evoluir rapidamente para choque hipovolémico, estimando-se que a mortalidade por episódio hemorrágico seja de 3 a 4%. As revisões clínicas recentes não definem o standard of care, devido ao reduzido número de casos descritos. Neste trabalho, apresentamos um caso de hemorragia massiva de varizes peri-estoma tratado com sucesso por embolização endovascular percutânea transhepática.

Palavras-chave

Hemorragia varizes ectópicas; Hemorragia peristoma; Embolização endovascular percutânea transhepática.

Clinical Case

We present the case of a 79-year-old man who went to the emergency department due to an episode of massive hemorrhage with loss of live blood through the ileostomy. He had a previous diagnosis of ethanolic liver cirrhosis (Child-Pugh B, 8 points) and a history of ileostomy surgery (4 months before) due to late dehiscence of the ileo-ileal anastomosis in the context of an incarcerated umbilical hernia operated on (2 years before). In the emergency department, the patient developed hemorrhagic shock (in the laboratory, a minimum hemoglobin value of 5.3g/dL was recorded), which was reversed with medical therapy. CT angiography was performed (figure 1), which identified the presence of peristomal varices, without evidence of active hemorrhage, and an upper digestive endoscopy was subsequently performed, which excluded losses from the upper gastrointestinal tract. After multidisciplinary discussion and taking into account the absence of upper digestive hemorrhage, the starting point of hemorrhage was assumed to be in the peristomal varices and it was decided to perform endovascular embolization via the transhepatic route.

Description of the Procedure

First, ultrasound-guided drainage of the ascites was performed. Next, an ultrasound-guided transhepatic puncture of the portal vein branch (segment 5) and selection of one of the peri-ileostomy varicose branches was performed, guided by the anatomical references of the CT angiography. Venography confirmed the existence of two peri-ileostomy varicose branches tributary to the superior mesenteric vein with anastomoses with the systemic circulation, namely with the superficial circumflex vein and the ipsilateral inferior epigastric vein(figure 2). Direct pressure in the portal vein (26 - 27mmHg) and varicose veins (7 mmHg) was measured. As it was considered that there was a risk of migration of embolic material into the systemic circulation, the right superficial femoral vein (5F sheath) was punctured and the superficial circumflex vein was selected and embolized with coils(figures 3 and 4). Subsequent venography demonstrated the persistence of a fine anastomosis with the inferior and superior epigastric veins, which it was decided not to embolize prophylactically, taking into account the reduced speed of flow to them after injection and the considerable distance to a large vein. In this way, the two peri-ileostomy varicose branches were subsequently embolized with glue, in a 1:3 dilution with Lipiodol® . Finally, the portal vein entry site was closed with a coil.(figure 5)

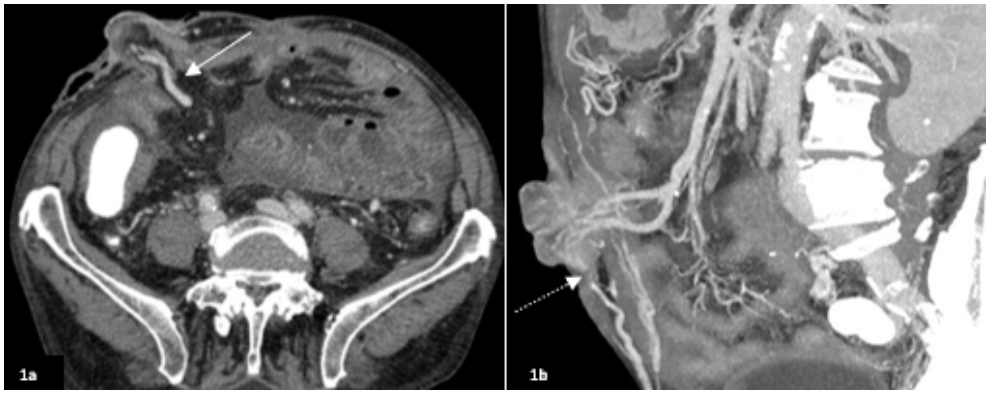

Figure 1 – CT angiography in the venous phase. 1a - Axial section and 1b - Sagittal reformatting, MIP. Peristomal varicose veins (white arrow) depending on two branches of the superior mesenteric vein with evidence of portosystemic shunt to abdominal wall veins (dashed arrow).

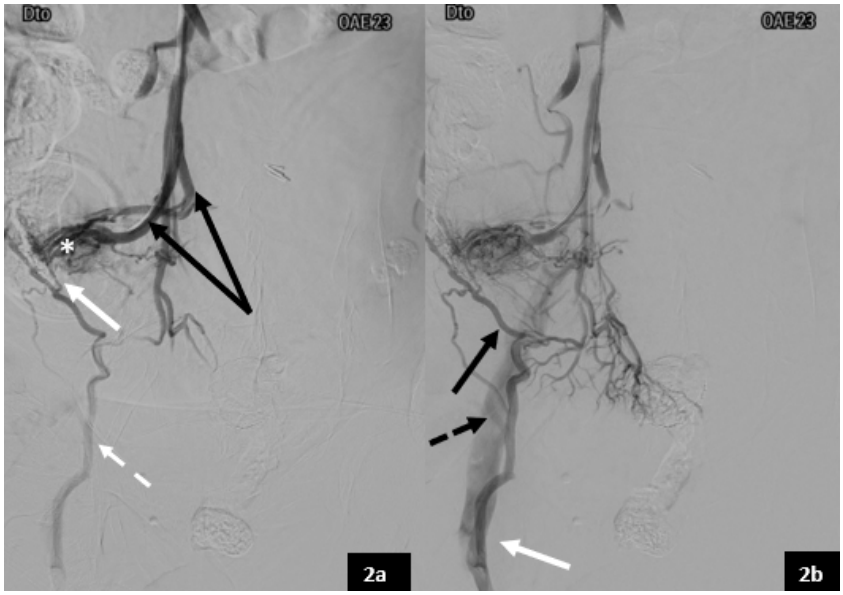

Figure 2 – Venography. (a) Peri-stoma varices (*); two tributary branches of the superior mesenteric vein (black arrows) and the point of communication with the systemic venous system (white arrow); right superficial circumflex vein (dashed arrow). (b) Anastomosis between the circumflex vein and the femoral vein (white arrow); inferior epigastric vein (black arrow); external iliac vein (dashed black.

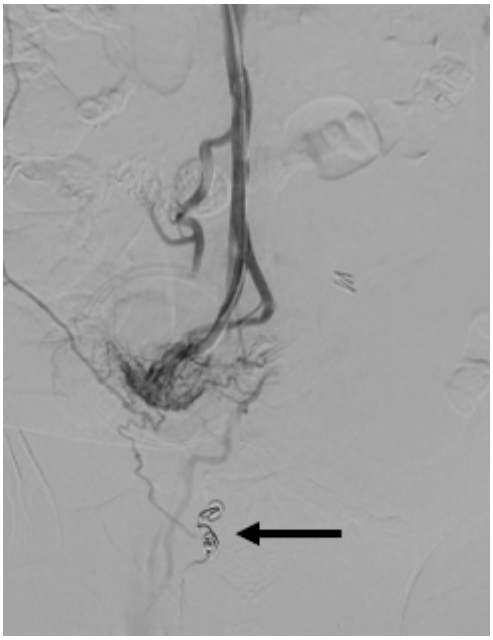

Figure 3 – Venography. Pre-embolization injection, after coil placement (arrow) in the superficial circumflex vein demonstrating flow interruption.

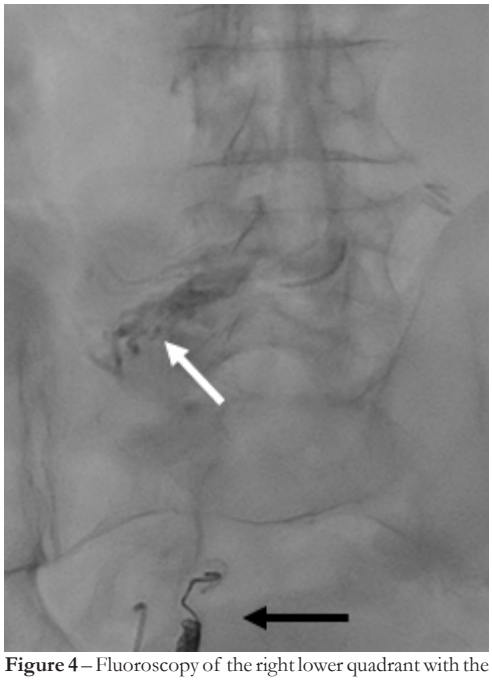

Figure 4 – Fluoroscopy of the right lower quadrant with the coil (white arrow) previously positioned and glue injection into the first tributary branch of the superior mesenteric vein (black arrow).

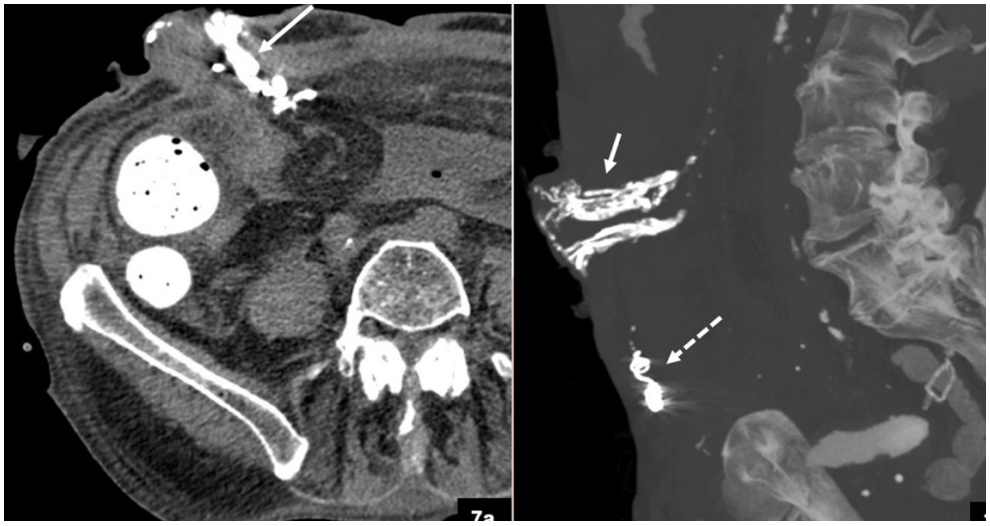

Figure 5 – Control CT without contrast injection. Glue (arrows) and coil (dashed arrow). 7A) Axial section. 7B) MIP reformatting, sagittal section.

During the procedure, hematic ascitic fluid leaked through the drain, which was attributed to hemorrhage through the percutaneous access site, being resolved after the placement of the coil. The peritoneal drain was maintained 24 hours after sheath removal.

After the procedure, complete resolution of the hemorrhage from the peristomal varices was achieved, with no complications documented, and the patient was discharged from hospital the day following the procedure. To date, 12 months after the procedure, there is no record of recurrence of bleeding.

Discussion

Peristomal varices are rare ectopic varices in chronic hepatic disease (CHD). These develop at the enterocutaneous junction of a stoma and represent a venous shunt between the portal circulation of the small intestine or colon and the systemic venous circulation of the abdominal wall, similar to the pathophysiology of medusa head. Peristomal varicose veins may be difficult to see on objective examination and are not accessible on endoscopic evaluation, so their diagnosis generally only appears after the first bleeding episode through the stoma. The bleeding rate is between 27 and 50% and the period of time until the first bleeding event is variable, with episodes having been documented after 1 month or after 23 years.[1,2] Variceal bleeding can quickly progress to hemorrhagic shock, requiring blood transfusion in 42.9% of patients.[1] It is estimated that mortality from a bleeding episode is 3 to 4%.[3] Therefore, timely diagnosis and treatment are essential.

A high degree of clinical suspicion is necessary in the management of stoma hemorrhage. Its diagnosis first requires the exclusion of upper gastrointestinal bleeding through endoscopic evaluation and subsequent multidisciplinary approach between hepatologists, interventional radiologists and surgeons.

There are multiple minimally invasive treatment options, however, none of them has been clearly established as first line yet.

One of the options is endovascular embolization via a direct percutaneous approach, via a transsplenic or transhepatic route. The direct percutaneous approach has a lower risk of bleeding, especially in patients with ascites, who have an increased risk of post-puncture hemorrhage. However, it is more difficult to guarantee the asepsis of the procedure due to its proximity to the stoma and the possible need to remove the bag. Transsplenic embolization presents a greater hemorrhagic risk due to splenic puncture. And finally, transhepatic endovascular embolization, which was our option, as it presents a lower hemorrhagic risk compared to the transsplenic approach and guarantees sterilization of the procedure. Possible complications of varicose vein embolization using a transhepatic approach are hepatic hemorrhage, biliary leak or fistula and portal vein thrombosis. From our experience in relation to the procedure, the following practical aspects stand out:

- Importance of performing a venoCT with multiplanar reconstructions prior to the procedure because this is the venous sector and anatomical references are necessary to identify the peristomal varicose branches.
- It is advisable to aseptically prepare not only the abdomen, but also the roots of the thighs, since in these cases, in addition to embolizing the peristomal varices, it is necessary to previously embolize the systemic venous collaterals in order to prevent associated complications.
- Puncture of the femoral vein must be performed below the inguinal ligament, in the superficial femoral vein, approximately at the level of the proximal third of the thigh, so as not to block the origin of the inferior epigastric vein, since the length of the endovascular sheaths is generally in the order of 11 cm.
- Ultrasound-guided drainage of ascites with vacuum aspiration, before the procedure, optimizes hemostasis at the site and puncture. Maintaining the peritoneal drain during the first 24 hours allows the drainage of residual fluid and early identification of complications.

Another treatment possibility is the intrahepatic portosystemic shunt (TIPS), which reduces the pressure in the portal venous system and is indicated for the prevention of upper digestive hemorrhages, but in these cases it is often insufficient, since despite the demonstration of good results in resolving the initial bleeding episode, the re-bleeding rate reaches 40%.[1] In these patients, the hepatic venous pressure gradient (HVPG) was less than 12 mmHg, suggesting that peristomal varices can bleed even with low portal pressure values and, therefore, the exclusive performance of TIPS is not sufficient to prevent re-bleeding.[2,3] Additionally, it is not uncommon to be faced with clinical conditions that represent absolute or relative contraindications to performing TIPS, due to the increased risk of development and severity of hepatic

encephalopathy. It is estimated that 30% of patients who undergo TIPS for peristomal variceal bleeding will develop hepatic encephalopathy.[4]

Conclusion

In conclusion, peristomal variceal hemorrhage is a rare complication of ostomized patients with portal hypertension. There are multiple treatment options, however, none of them has yet been clearly established as first line treatment. In this work, we present a case of massive peristomal variceal hemorrhage successfully treated by transhepatic percutaneous endovascular embolization.

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.
Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.
Financing Support: This work has not received any contribution, grant or scholarship.
Suporte financeiro: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.
Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.
Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.
Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).
Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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