

# Portal hypertensive enteropathy; an unusual cause of gastrointestinal bleeding in cirrhosis: or is it?

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**ABSTRACT** We present a patient with liver cirrhosis, and portal hypertensive gastropathy who was transfusion-dependent due to chronic gastrointestinal blood loss. Wireless capsule endoscopy revealed bleeding from extensive vascular ectatic lesions in the small bowel and right colon as well as from the stomach. We discuss briefly the recent literature relating to chronic gastrointestinal bleeding due to portal hypertensive enteropathy, the diagnosis of this condition, and the use of TIPSS in treatment.

**KEYWORDS** Cirrhosis, gastrointestinal bleeding, portal hypertensive enteropathy

**LIST OF ABBREVIATIONS** Argon plasma coagulation (APC), portal hypertensive enteropathy (PHE), portal hypertensive gastropathy (PHG), transjugular intrahepatic porto-systemic shunt (TIPSS), wireless capsule endoscopy (WCE)

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## CASE REPORT

A fifty-one-year-old man with cryptogenic cirrhosis became blood transfusion-dependent for two years due to continued gastrointestinal blood loss. He required up to six units of blood per week.

Continued melaena suggested a source of bleeding in the upper gastrointestinal tract. Upper gastrointestinal endoscopies had revealed florid PHG and well-covered gastric varices without stigmata of bleeding. Vascular ectatic lesions were also present in the first and second part of the duodenum. A colonoscopy was reported as normal. He had other signs of portal hypertension including splenomegaly and thrombocytopenia but normal coagulation. Despite treatment with beta-blockers, he remained transfusion-dependent. Endoscopic APC of the PHG lesions led to endoscopic improvement, but he still required up to three units of blood every two weeks.

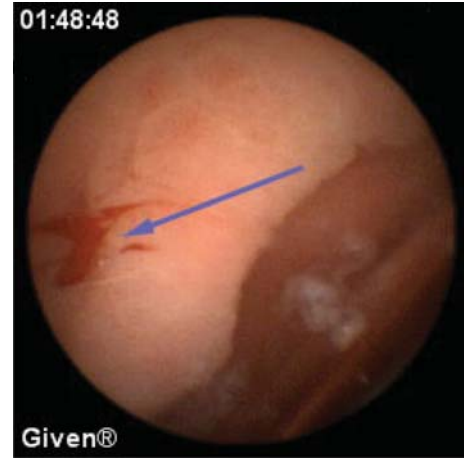
In view of continued bleeding, WCE (Pillcam™, Given Imaging Ltd.) was carried out. This confirmed the previous gastric antral (see Figures 1 A–B) and proximal duodenal vascular ectatic lesions. Furthermore, mucosal oedema and vascular ectatic lesions (some actively bleeding during the examination) were visible along the jejunum and down to the ileum (see Figures 1 C–E), in keeping with a diagnosis of PHE. Wireless capsule endoscopy also allowed vascular ectatic lesions to be seen in the right colon (see Figure 1 F).

Widespread lesions along the totality of the small bowel made endoscopic treatment through an enteroscope impracticable, so a decision was taken to treat the patient with a TIPSS. Following successful TIPSS insertion the portal pressure gradient was reduced from 15 to 3 mmHg. He suffered a short-lasting episode of hepatic encephalopathy. His transfusion requirements dramatically improved, and three months after TIPSS insertion he no longer required any blood transfusions.

## DISCUSSION

Portal hypertensive enteropathy is a recently recognised manifestation of portal hypertensive intestinal vasculopathy. Endoscopic findings include bleeding, vascular ectasias, ulceration and small bowel varices. In a study of 44 patients, ileal varices were present in 18% of patients with cirrhosis, especially in patients with concomitant colopathy.<sup>1</sup> A case control study in similar patients demonstrated jejunal lesions, and all patients had portal gastropathy.<sup>2</sup> Previous case reports have demonstrated the efficacy of push enteroscopy in the initial diagnostic work-up of these cases, as well as proposing retrograde ileoscopy and WCE as alternative modalities.<sup>3</sup>

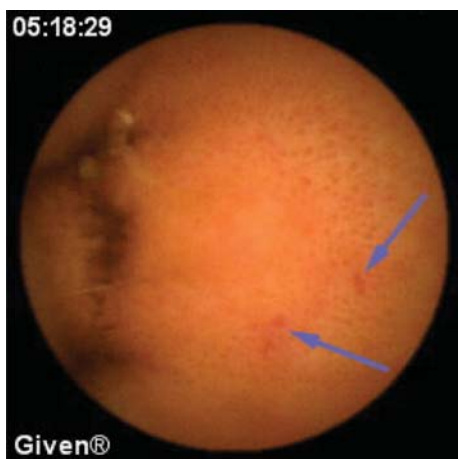
In a comparative study of 37 cirrhotic cases vs controls using WCE, mucosal changes were found to be significantly more common in the former (67.5% vs 0,



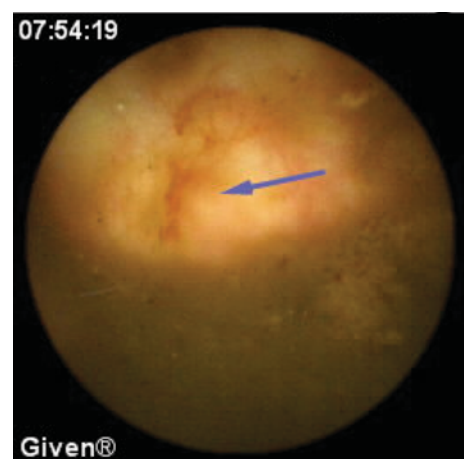
**FIGURE 1 A–B** Wireless capsule endoscopy images. Portal hypertensive gastropathy (antrum) with active bleeding (B).



**FIGURE 1 C–D** Wireless capsule endoscopy images. Portal hypertensive enteropathy with lesions in the jejunum.



**FIGURE 1 E** Wireless capsule endoscopy image. Portal hypertensive enteropathy with lesions in distal ileum.



**FIGURE 1 F** Wireless capsule endoscopy image. Portal hypertensive colopathy with lesions in the cecum.

$p < 0.001$ ).<sup>4</sup> Grade 2+ or larger oesophageal varices, portal gastropathy and colopathy and Childs–Pugh class C cirrhosis were found to be significantly associated with PHE, mirroring findings of previous studies. Underlying cause of cirrhosis, gender, or prior history of variceal bleeding was not related to the presence of PHE.

Wireless capsule endoscopy is now firmly established as an adjunct investigation in identifying sources of obscure gastrointestinal bleeding.<sup>5</sup> A recent study comparing WCE and enteroscopy showed high detection rates of occult bleeds with both. Although the detection rate of WCE was superior, their results indicate that the procedures are complementary; an initial diagnostic imaging employing WCE might be followed by therapeutic

enteroscopy in some cases.<sup>6</sup> Over 170,000 WCE examinations have been carried out to date, with very few clinical risks or technical problems, which can often be prevented by careful case selection.<sup>7</sup>

This case also elegantly demonstrates the therapeutic potential of TIPSS in the context of severe chronic blood loss due to portal hypertensive intestinal vasculopathy. Wireless capsule endoscopy imaged most of potential bleeding sites, not only in the stomach and colon, but also throughout the small intestine. Small bowel enteropathy correlates with portal hypertensive gastropathy, and colopathy,<sup>8</sup> for which TIPSS is a recognised treatment modality.<sup>9,10</sup> Wireless capsule endoscopy is a very useful new modality of investigating such complex cases.

## REFERENCES

- Misra SP, Dwivedi M, Misra A *et al.* Ileal varices and portal hypertensive ileopathy in patients with cirrhosis and portal hypertension. *Gastrointest Endosc* 2004; **60**:778–83.
- Desai N, Desai D, Pethe V *et al.* Portal hypertensive jejunopathy: a case control study. *Indian J Gastroenterol* 2004; **23**(3):99–101.
- Tang SJ, Jutabha R, Jensen DM. Push enteroscopy for recurrent gastrointestinal hemorrhage due to jejunal anastomotic varices: a case report and review of the literature. *Endoscopy* 2002; **34**(9):735–7.
- De Palma GD, Rega M, Masone S *et al.* Mucosal abnormalities of the small bowel in patients with cirrhosis and portal hypertension: a capsule endoscopy study. *Gastrointest Endoscop* 2005; **62**(4):529–34.
- Sturniolo GC, Di Leo V, Vettorato MG, D'Inca R. Clinical relevance of small-bowel findings detected by wireless capsule endoscopy. *Scand J Gastroenterol* 2005; **40**(6):725–33.
- Hadithi M, Heine GDN, Jacobs MA, v Bodegraven AA, Mulder CJ. A prospective study comparing video capsule endoscopy with double-balloon enteroscopy in patients with obscure gastrointestinal bleeding. *Am J Gastroenterol* 2005; **100**:1–6.
- Rondonotti E, Herreras JM, Pennazio M *et al.* Complications, limitations and failures of capsule endoscopy: a review of 733 cases. *Gastrointest Endoscop* 2005; **62**:712–6.
- Primignani M, Carpinelli L, Preatoni P *et al.* Natural history of portal hypertensive gastropathy in patients with liver cirrhosis. The New Italian Endoscopic Club for the study and treatment of esophageal varices (NIEC). *Gastroenterology* 2000; **119**(1):181–7.
- Kamath PS, Lacerda M, Ahlquist DA *et al.* Gastric mucosal responses to intrahepatic portosystemic shunting in patients with cirrhosis. *Gastroenterology* 2000; **118**(5):905–11.
- Balzer C, Lotterer E, Kleber G, Fleig WE. Transjugular intrahepatic portosystemic shunt for bleeding angiodysplasia-like lesions in portal-hypertensive colopathy. *Gastroenterology* 1998; **115**(1):167–72.