ABSTRACT
Posttraumatic hepatic artery pseudoaneurysm is a rare, but life threatening condition which should be considered in patients with a history of blunt abdominal trauma who present with abdominal pain or gastrointestinal bleeding. We report a case of a patient with such a pseudoaneurysm discovered five months after a bicycle accident resulting in hepatic rupture that was treated conservatively. The patient presented with fatigue, dizziness, inability to tolerate major exertion and gastrointestinal bleeding. After extensive diagnostic procedures, a right hepatic artery pseudoaneurysm was found. The condition was treated successfully with transcatheter coil embolization.

Key words: blunt abdominal trauma, hepatic artery, pseudoaneurysm, embolization, gastrointestinal bleeding, abdominal pain

Introduction
Posttraumatic hepatic artery pseudoaneurysm is a rare, but life threatening condition. (1) The enteric fistulization of such a pseudoaneurysm is even rarer. (2) The condition should be considered in patients with a history of blunt abdominal trauma presenting with abdominal pain or gastrointestinal (GI) bleeding of unclear origin. Symptoms can occur even years after the trauma. (3,4) We report an unusual case of a patient with a giant posttraumatic hepatic artery pseudoaneurysm which presented as GI bleeding, without detectable enteric fistulization, five months after a bicycle accident.

Case report
A 46-year old man was referred to hospital because of fatigue, dizziness and inability to tolerate major exertion. He also reported one black stool three days prior to admission. The patient had a history of smoking and chronic alcohol abuse and was not on any prescription medication. His medical history was remarkable for a bicycle accident that occurred five months earlier which resulted in a mandibular and clavicular fracture, chest contusion and hepatic rupture that was treated conservatively. During the physical examination he was pale, with a heart rate of 60 bpm and arterial blood pressure of 120/70 mmHg. The abdomen was soft, without tenderness or any obvious masses. On digitorectal examination fresh blood was found. Laboratory data on admission revealed severe normocytic anemia (red blood cell count 1.71 x 10^{12}/L, hemoglobin 49 g/L, hematocrit 0.159%, mean corpuscular volume 92.7 fL), as well as elevated gamma-glutamyltransferase (599 U/L) and creatine kinase (297 U/L) levels. Other laboratory parameters were within normal range or not significantly altered. The initial B-mode abdominal ultrasound showed an enlarged liver with a cystic formation in the right liver lobe, around 80 mm in diameter, classified as a hematoma. Upper GI endoscopy indicated no abnormalities. The patient was treated with transfusions of deplasmatized eryt...
hocytes, proton pump inhibitors and antibiotics. On the third day of hospitalization the patient became febrile with an axillary measured body temperature of 38.6°C and started complaining of pain in the right upper abdominal quadrant. Laboratory data at that time revealed an elevated white cell count (28.11 x 10^9/L), rise in aspartate – aminotransferase (48 U/L) and alanine – aminotransferase (148 U/L), as well as high C-reactive protein (164.7 mg/L), and CA 19,9 (363.36 U/mL) values. Severe anaemia was still present despite ongoing treatment. Coagulated but also freshly hemolysis blood was observed during colonoscopy with no clear source of bleeding. To further elucidate the possible site of GI bleeding, an abdominal multidetector computed tomography (MDCT) of the abdomen, with intravascular application of contrast media, was performed. There were no signs of bowel wall bleeding but a giant pseudoaneurysm (10x8 cm in diameter) of the right hepatic artery was discovered (figure 1). MDCT 2D reconstructions also revealed fast flow into the portal circulation in the late arterial phase of imaging suggesting a communication between the pseudoaneurysm and segmental portal vein (figure 2A). We hypothesized that the high pressure in the portal circulation was causing occasional bleeding from different sites of the enteric wall. This 'hemodynamic changes' hypothesis would be able to explain the episode of black stool and the episodes of fresh blood in the colon. In consultation with a vascular surgeon and interventional radiologist it was concluded that the treatment of choice would be pseudoaneurysm transcatheter embolization. (5-8) A giant pseudoaneurysm was confirmed by digital subtraction angiography (DSA) (figure 2B). Segmental embolization was successfully performed with five complex helical 8x12 mm coils (Boston Scientific Corporation, Pl. Natick, MA; USA) (figure 3A). One 10x14 mm helical coil was also deployed but it was too wide for the segmental artery and it was deployed into the right hepatic artery. Control abdominal MDCT two weeks after the procedure showed no

Figure 1. Volume rendering technique (VRT) computed tomography showing giant posttraumatic pseudoaneurysm of the right hepatic artery.

Figure 2. A Multidetector computed tomography 2D reconstructions showing fast flow into the portal circulation in the late arterial phase suggesting a communication between the pseudoaneurysm and portal veins.
B Giant pseudoaneurysm confirmed on digital subtraction angiography prior to embolization.

Figure 3. A Digital subtraction angiography following embolization showing almost complete absence of contrast filling of the pseudoaneurysmal sac.
B Multidetector computed tomography reconstruction two weeks following embolization showing complete occlusion of the pseudoaneurysmal sac.


