

The MDCT-scan as an important tool in the management of relapsing, overt upper gastrointestinal bleeding : letter to the editor

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To the Editor,

Severe life-threatening hemorrhage in the duodenum is nearly always due to an arterial bleeding in peptic- or NSAID-induced ulcerations. In patients with overt arterial duodenal bleeding without visible ulcerations, congenital vascular malformations must be considered, especially in younger patients.

A 27-year old man presented with a major upper gastrointestinal (GI) bleeding and hypovolemic shock. On urgent endoscopic examination, an arterial bleeding without visible ulceration was documented in the second part of the duodenum, suggesting a Dieulafoy lesion. The bleeding was successfully treated with endoscopic hemoclips, after local injection of a diluted adrenaline solution. The day after, the bleeding relapsed and on urgent laparotomy, the bleeding site in the duodenum was sutured. He recovered well but a week later, he was readmitted with a major upper GI bleeding. A multi-detector computed tomography-scan (MDCT-scan) was performed, showing a large arteriovenous malformation

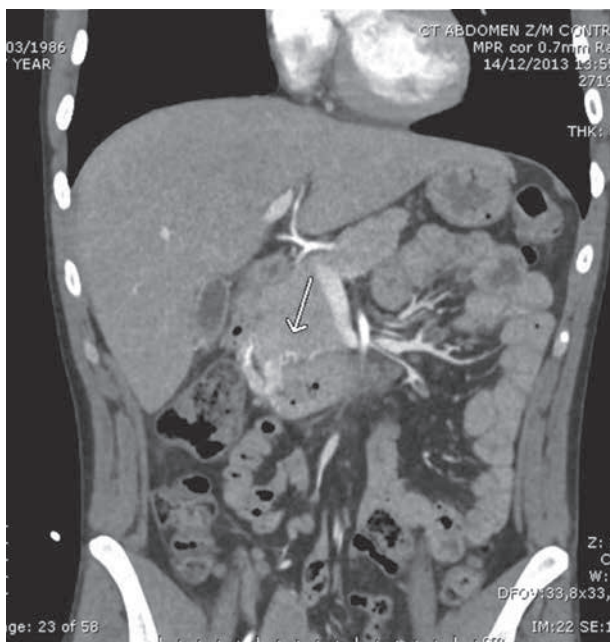


Fig. 1. — CT-scan in the arterial phase shows a large feeding artery and a racemose vascular network in the wall of the inferior part of the duodenum.



Fig. 2. — A VRT (Volume Rendering Technique) nicely displays the duodenal AVM.

(AVM) in the wall of the second part of the duodenum (Fig. 1 and Fig. 2). The patient was transferred to a tertiary teaching hospital where an angiographic embolization was successfully performed.

Dieulafoy lesions and AVMs of the duodenum are a rare cause of major duodenal bleeding. Dieulafoy lesions are dilated and tortuous arterioles, aberrantly located in the submucosa. They can cause life-threatening bleeding if erosion through the mucosa occurs. They are more frequent in the stomach than in the duodenum or other parts of the small intestine (1). AVMs are characterized by a large aberrant artery, directly draining into a large vein. Dieulafoy lesions and AVMs are thought to be congenital.

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Generally, endoscopic hemostasis is the gold standard for the treatment of Dieulafoy lesions. Several endoscopic modalities have been used, such as aethoxysklerol injection, electric coagulation, laser, heat probe, ligation and hemoclips. The overall efficacy of endoscopic treatment is more than 80% and the combined therapy of hemoclip hemostasis with aethoxysklerol injection is described to be the most effective method for gastrointestinal bleeding due to Dieulafoy lesions (2). Other authors reported very successful experience in treating patients with endoscopic band ligation, but this treatment modality has some potential risks (3).

However, Dieulafoy lesions and AVMs may cause only intermittent bleeding and therefore, these lesions may be difficult to identify endoscopically (4). A MDCT-scan has a high sensitivity for bleeding lesions, since it requires a bleeding rate of only 0.35 mL/min (5). The non-invasive nature of this technique compared with a conventional angiography, makes a MDCT-scan more suitable for emerging evaluation of major GI bleeding where endoscopy failed to establish a diagnosis or when endoscopic treatment of the bleeding was not successful. Furthermore, a MDCT-scan can lead to rapid and targeted embolization of the specific bleeding vessel, avoiding blind resections with high morbidity and mortality.

A MDCT-scan is nowadays seen as the first diagnostic procedure to be performed in patients with relapsing, overt, potentially life-threatening GI bleeding, in whom prior upper GI endoscopy was negative (6).

References

1. HUPRICH J.E., BARLOW J.M., HANSEL S.L., ALEXANDER J.A., FIDLER J.L. Multiphase CT enterography evaluation of small-bowel vascular lesions. *Am. J. Roentgenol.*, 2013, **201** (1) : 65-72.
2. CUI J., HUANG L.Y., LIU Y.X., SONG B., YI L.Z., XU N. *et al.* Efficacy of endoscopic therapy for gastrointestinal bleeding from Dieulafoy's lesion. *World J. Gastroenterol.*, 2011, **17** (10) : 1368-72.
3. YEN H.H., CHEN Y.Y. Endoscopic band ligation for Dieulafoy lesions : disadvantages and risks. *Endoscopy*, 2006, **38** (6) : 651.
4. POON R., POON J. Massive GI bleeding due to duodenal arteriovenous malformation. *Gastrointest. Endosc.*, 2000, **52** (1) : 101-4.
5. GEFFROY Y., RODALLEC M.H., BOULAY-COLETTA I., JULLÈS M.C., RIDEREAU-ZINS C., ZINS M. Multidetector CT angiography in acute gastrointestinal bleeding : why, when and how. *Radiographics*, 2011, **31** (3) : 35-46.
6. AGRAWAL J.R., TRAVIS A.C., MORTELE K.J., SILVERMAN S.G., MAURER R., REDDY S.I., *et al.* Diagnostic yield of dual-phase computed tomography enterography in patients with obscure gastrointestinal bleeding and a non-diagnostic capsule endoscopy. *J. Gastroenterol. Hepatol.*, 2012, **27** (4) : 751-9.