Endovascular treatment options for acute gastrointestinal bleeding

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Disclosures

I have nothing to disclose
Upper gastrointestinal bleeding (UGIB)

Guidelines:
2017
S2k-Leitlinie Gastrointestinal Blutung

2016
Acute upper gastrointestinal bleeding in over 16s: management, Nice(National Institute for Health and Care Excellence). Guidelines Clinical guideline [CG141] Published date: June 2012 Last updated: August 2016

2015
Diagnosis and management of nonvariceal upper gastrointestinal hemorrhage: European Society of Gastrointestinal Endoscopy (ESGE) Guideline DOI http://dx.doi.org/10.1055/s-0034-1393172 Published online: 0.0. Endoscopy 2015; 47: 1–46

2012
The role of endoscopy in the management of acute non-variceal upper GI bleeding American Society for gastrointestinal endoscopy (ASGE) Gastrointest Endosc 2012;75:1132
1138 / DOI: http://dx.doi.org/10.1016/j.gie.2012.02.033
Case 1 UGIB gastroduodenal

- 77 y old man
- Acute haemodynamic shock
- CT Scan – interdisciplinary discussion
  => Angiography

- Right CFA, 6F Destination 45cm
- 5F SHK
- Terumo Progreat 2,7F
- Radix 2 7/15
Case 1 UG

- 77 y old man
- Acute haemodynamic shock
- CT Scan – interdisciplinary discussion
  => Angiography

- Right CFA, 6F Destination 45cm
- 5F SHK
- Terumo Progreat 2,7F
- Radix 2 7/15
- Boston pushable coils 3/3

The principle of embolization is backdoor AND frontdoor occlusion, if no superselective embolization of a terminal branch is possible.
Case 2 UGIB gastroduodenal

- 94 y old woman
- Acute abdominal pain and haemodynamic shock
- CT Scan: ruptured small pseudoaneurysm of the right hepatic artery originating from the SMA
- interdisciplinary discussion => Angiography

- Right CFA, 6F Destination 45cm
- 5F SHK
- Terumo Progreat 2,7F
- No stable catheter position for coiling
- Histoacryl 1:4 Lipiodol 0,1ml
1. Use 1ml lipiodol resistant syringes!!!
2. Inject Glucose 20 %, but slowly (painful)
3. n-Butyl-2-Cyanoacrylat : Lipiodol = 1:4
4. Preload MC with Glucose 20 % (1ml Syringe)
5. Inject 0,1 ml of solution No 3
6. Inject Glucose 20 % until the embolisate is fully injected
7. Repeat if necessary
Case 3: Endograft: hepatic artery bifurcation

- 46-year-old man with active bleeding from the hepatic artery
- Drug abuse
- Liver cirrhosis
- Symptomatic cholecystitis
- Endoscopy confirmed active bleeding from the biliary system

=> CTA + Angiography
Case 4: Endograft in the SMA

53 y old woman after Whipple surgery (cancer)

Pancreatic fistula following several extensive surgical procedures.
Pancreatic juice eroded SMA.

Herald bleed (abdominal drainage) due to a pseudoaneurysm in the SMA.

Covera 8/60 flared
**Case 5: Acute Bleeding of a splenic aneurysm**

65 yo woman in shock

CT shows ruptured large splenic aneurysm with massive bleeding
Blood pressure about 40 systolic

Surgeons: General anesthesia and laparotomy would take too long

Time to bleeding control: 30min
Lower gastrointestinal bleeding (LGIB)

2019
Diagnosis and management of acute lower gastrointestinal bleeding: guidelines from the British Society of Gastroenterology

2017
S2k-Leitlinie Gastrointestinalale Blutung
DOI: 10.1055/s-0043-116856

2014
The role of endoscopy in the patient with lower GI Bleeding, American Society for gastrointestinal endoscopy (ASGE) Gastrointest Endosc 2014;79:875-885 / DOI: http://dx.doi.org/10.1016/j.gie.2013.10.039
Case 6 LGIB SMA

- 61 y old woman
- Acute bleeding (peranal) with haemorrhagic shock
- Endoscopic approach failed
  => Angiography

- Right CFA
- 6F Destination 45cm
- SHK 5F
- Progreat 2,7F
- Boston pushable coils 2/2 and 3/3
Case 7 LGIB IMA

- 84 y old man
- Acute bleeding (peranal) with haemorrhagic shock
- Endoscopic approach failed
  => Angiography

- Right CFA
- 6F Destination 45cm
- SHK 5F
- Progreat 2,7F
- Boston pushable coils 2/2 and 3/3
Special Case portal venous bleeding

50 yo man with pancreatitis and bleeding
Several CT`s showed a bleeding

Every time Angiography was performed but no bleeding could be detected

Last CT showed Bleeding from a portal venous/mesenteric vessel
**Summary:**
Endovascular treatment if endoscopy fails/not possible

**Upper GI tract (90%)**
Arcadal supply
Extensive collaterals

**Embolic agents**
- Coils
- NBCA (2-N-Butyl-Cyanoacrylat)
- Gelfoam (gelatin, Slurry/Torpedos)
- Stentgrafts
- Plaques/Microplaques
- Onyx
- Particles (polyvinylalcohol PVA)
- Autolog blood clot

**Lower GI tract (10%)**
“Poor“ collateral network

- Vasopressin injection

*Note: High rebleeding rate of 25%, Messmann et al. 2003*
Thank You!
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Special Thanx to
PD Dr. Regula von Allmen
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