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ULB

Post ERCP Bleeding Management: Tips and Tricks

29th BSGIE september meeting

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POST ERCP BLEEDING (PEB)

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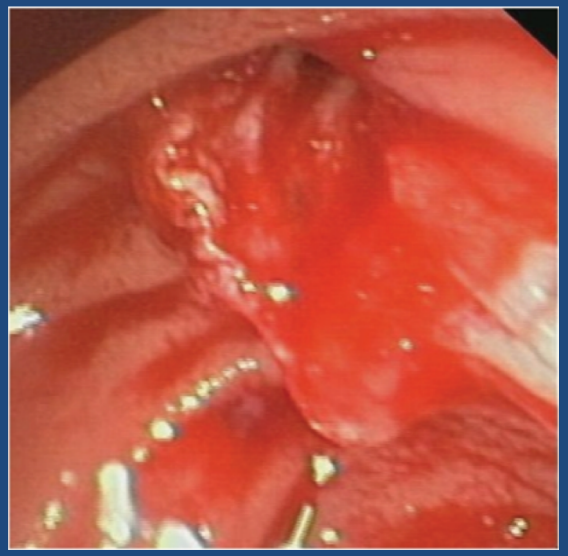
- Definitions
- Risk Factors
- Prophylaxy
- PEB Management



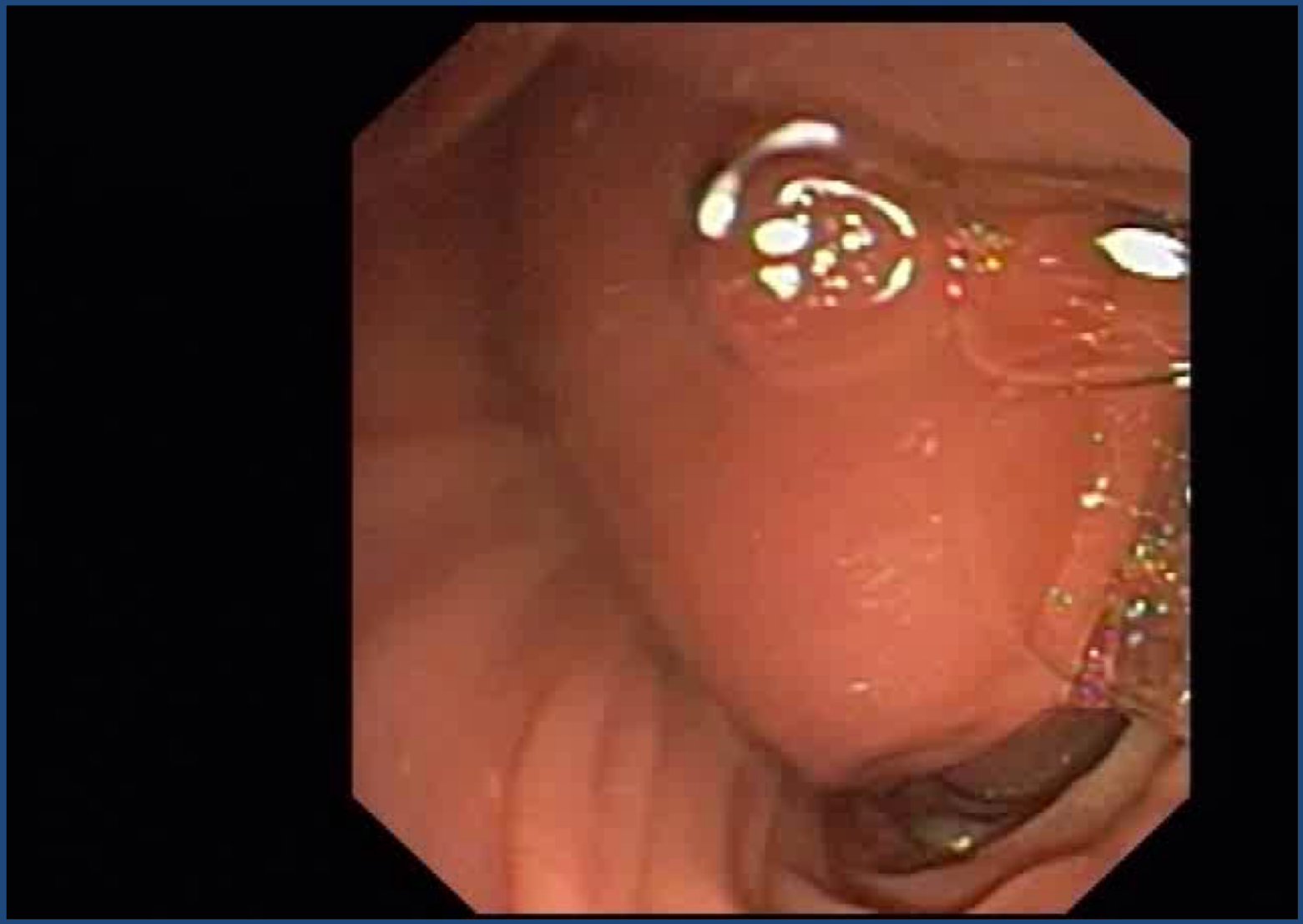
PEB DEFINITIONS

Immediate: during current endoscopy
Delayed: occuring after the end of current endoscopy (EBS) (from hours to days)

Non Clinically Significant: Hb drop in 48% have been described
Clinically Significant

Ferreira et al Am J Gastroenterology (2007)
Mellinger et al Surg Gynecol Obstet (1991)

IMMEDIATE BLEEDING COULD BE CLINICALLY SIGNIFICANT



Pr olivier Le Moine's courtesy

PEB: DEFINITIONS

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- Clinical evidence of bleeding: haematemesis and/or melena
- With or without a significant fall in Hb
- Requirement for secondary intervention:
  - Endoscopy
  - Or blood transfusion

Mild	Moderate	Severe
Clinical evidence of bleeding Drop of Hb < 3 gr/dl No transfusion	Transfusion of maximum 4 units of RBC No angiographic or surgical intervention	5 units or more OR Angiographic or surgical intervention

Cotton P, GIE (1991)

PEB RISK FACTORS

PEB: RISK FACTORS

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General incidence for clinically significant PEB: 0,5-2%

Definite	***Likely***	***Not***
Coagulopathy	Cirrhosis	ASA
Anticoagulation < 3 days after EBS	Dilated CBD	NSAID
Cholangitis prior to ERCP	CBD stone	Ampullary tumor
Bleeding during ES	Periampullar diverticulum	EBS longer length
Lower ERCP volume (< 1/ week)	Precut sphincterotomy	Extension of prior EBS

Definite significant in multivariate analysis in most studies
Likely significant in univariate analysis in most studies
Not significant by multivariate analysis in any study

Freeman GIE 2002
Ferreira and Baron GIE 2007

PEB PROPHYLAXIS

PEB PROPHYLAXIS

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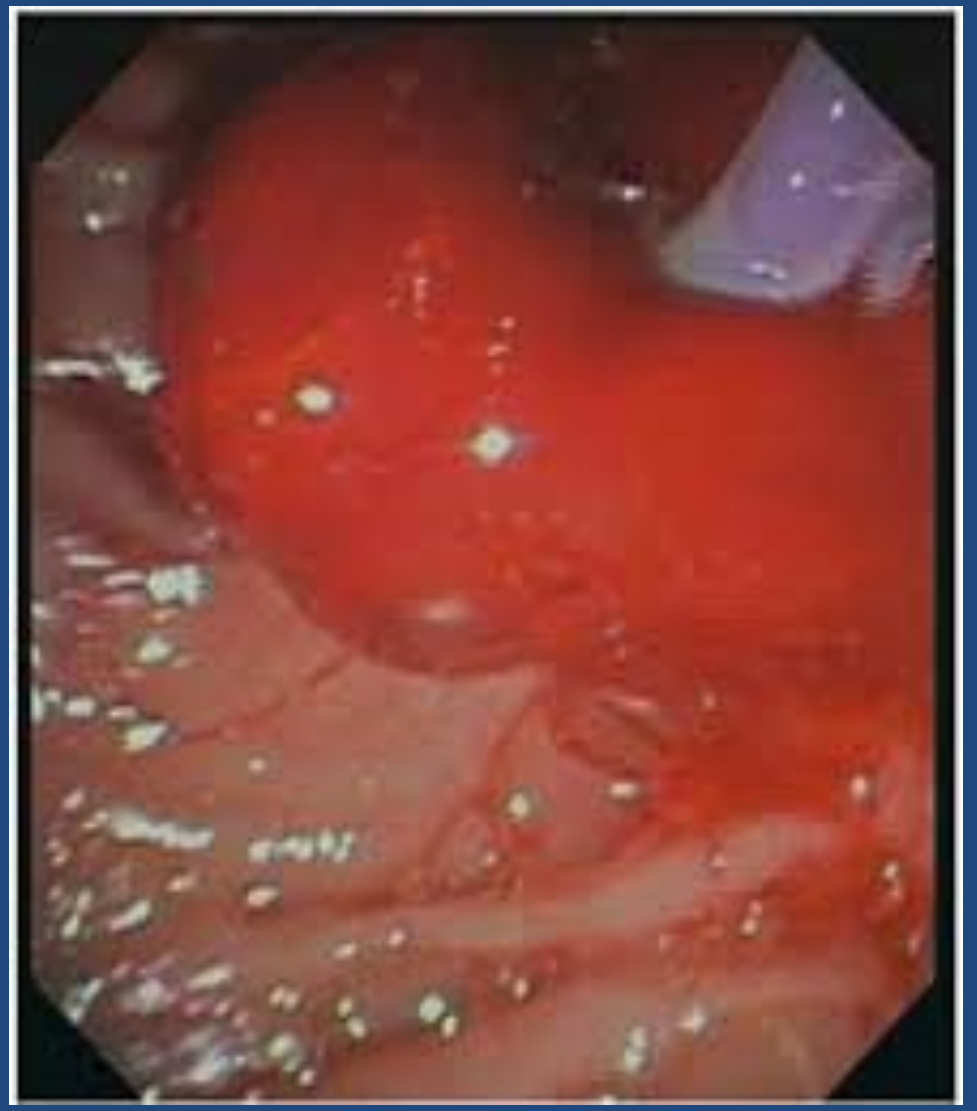
Avoid unecessary sphincterotomy in patients with risk factors (coagulopathy).

Correction of coagulopathy before EBS:

- Plt > 50,000/mm³
- INR < 1,5

Withhold AAS for ampullectomy.

Proper EBS technique.



Talukdar et al BPRCG 2016
Ferreira et al Am J Gastroenterology (2007)

PEB PROPHYLAXIS: EBS PROPER TECHNIQUE

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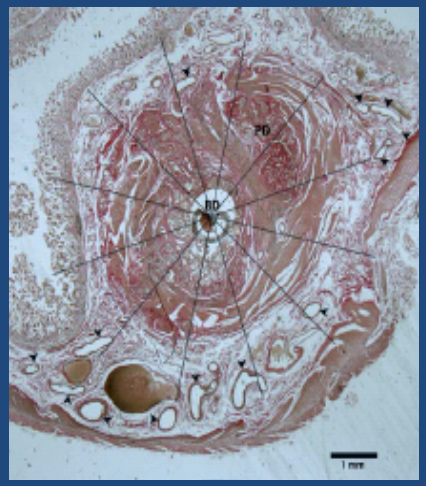
Proper EBS technique

Position

Cutting between 11 and 1 o’ clock arc above major papilla

Use of a blended current (avoid mild, transient episodes of intraprocedural bleeding)

EPLBD (ES+LBD) reduces risk of bleeding



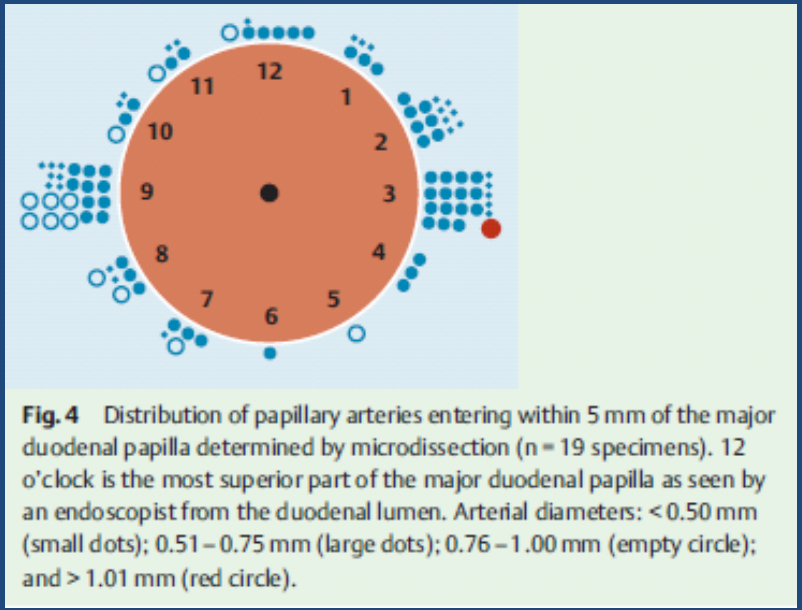


Fig. 4 Distribution of papillary arteries entering within 5 mm of the major duodenal papilla determined by microdissection (n = 19 specimens). 12 o'clock is the most superior part of the major duodenal papilla as seen by an endoscopist from the duodenal lumen. Arterial diameters: < 0.50 mm (small dots); 0.51 – 0.75 mm (large dots); 0.76 – 1.00 mm (empty circle); and > 1.01 mm (red circle).

Mirjalili Endoscopy 2011; Verna GIE 2007; Wilcox et al Am J Gastroenterol 2004; Minami et al W J Gastroenterol 2007

BEP IN ELECTIVE PATIENTS

- In low risk patients: stop AC therapy 3-5 days before (48 hours for DAC) without bridge
- In high risk patients: stop AC 3-5 days before (48 hours for DAC) with bridge (LMWH or UH)
- If AC resume before 3 days : 10-15 % risk of PEB

Table 2. Condition Risk for Thromboembolism (ASGE guideline (43))

High-Risk Conditions	Low-Risk Conditions
• Atrial fibrillation associated with valvular heart disease	• Deep vein thrombosis
• Mechanical valve in the mitral position	• Uncomplicated or paroxysmal nonvalvular arterial fibrillation
• Mechanical valve and prior thromboembolic event	• Bioprosthetic valve
	• Mechanical valve in the aortic position

Freeman et al NEJM (1996); 335 : 909-18
Van Os et al GIE (1999); 50:536-43
Eisen et al GIE (2002): 55:775-9,

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PEB MANAGEMENT

PEB MANAGEMENT

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« UGI bleeding »

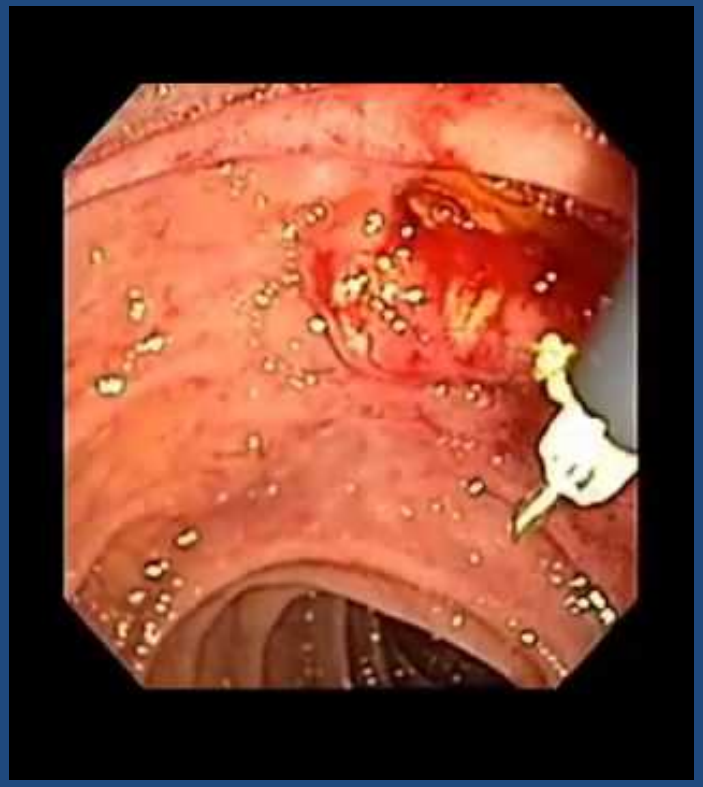
- Prompt and appropriate resuscitation
- Management of comorbide conditions

Use a duodenoscope.

Spray an epinephrine (1/10,000) solution through a catheter.

1. Epinephrine injection (1/10,000) through a **CarrLock** needle at the apex of the sphincterotomy
2. 0,5-30 cc have been described
3. Take care of underlining ICM

- Between 96-100% of succes (Leung et al GIE 1995; Kim et al Endoscopy 1999; Wilcox et al Am J Gastroeneterol 2004)



PEB MANAGEMENT

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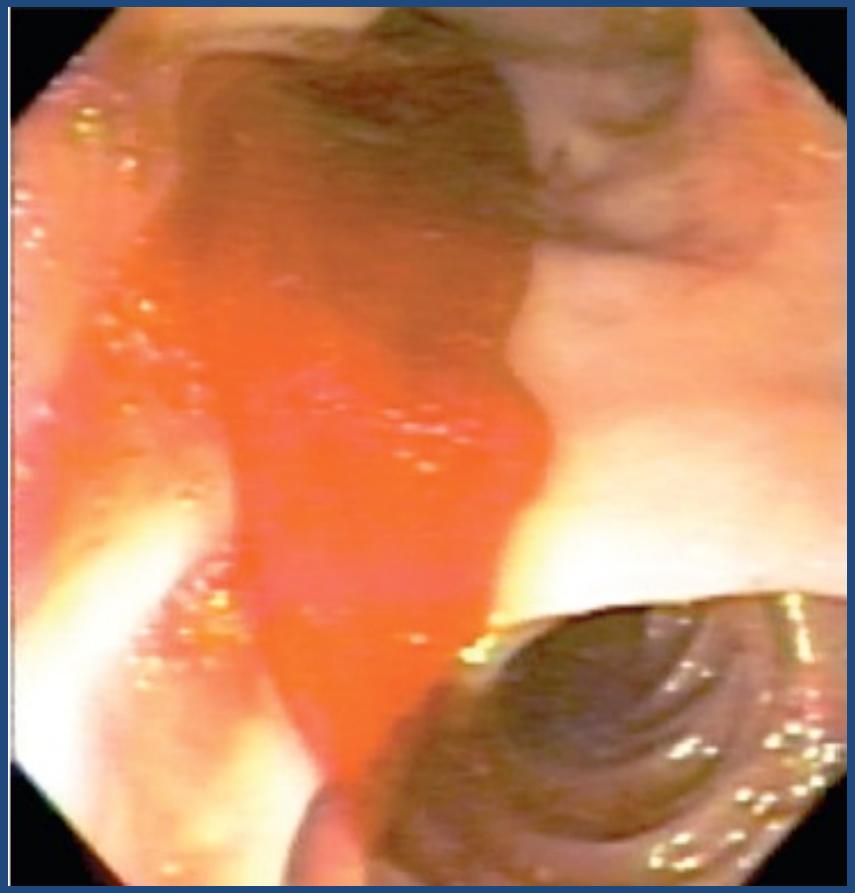
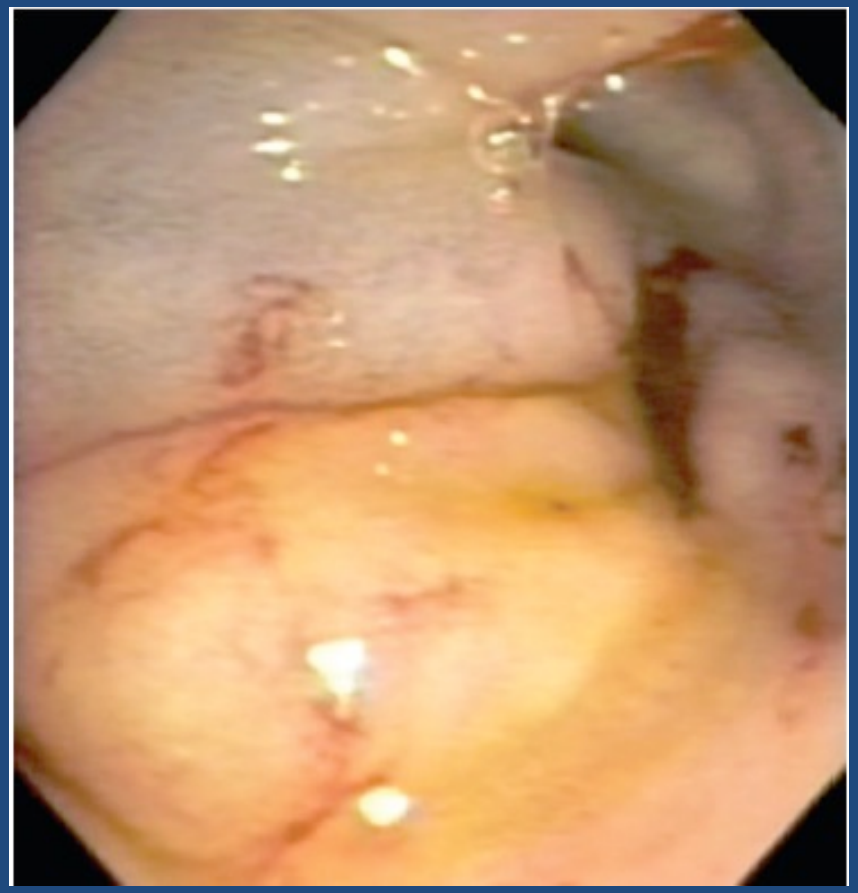
- BEFORE



- AFTER ADRENALINE INJECTION



PEB MANAGEMENT

Depending of the location use of electrocautery through

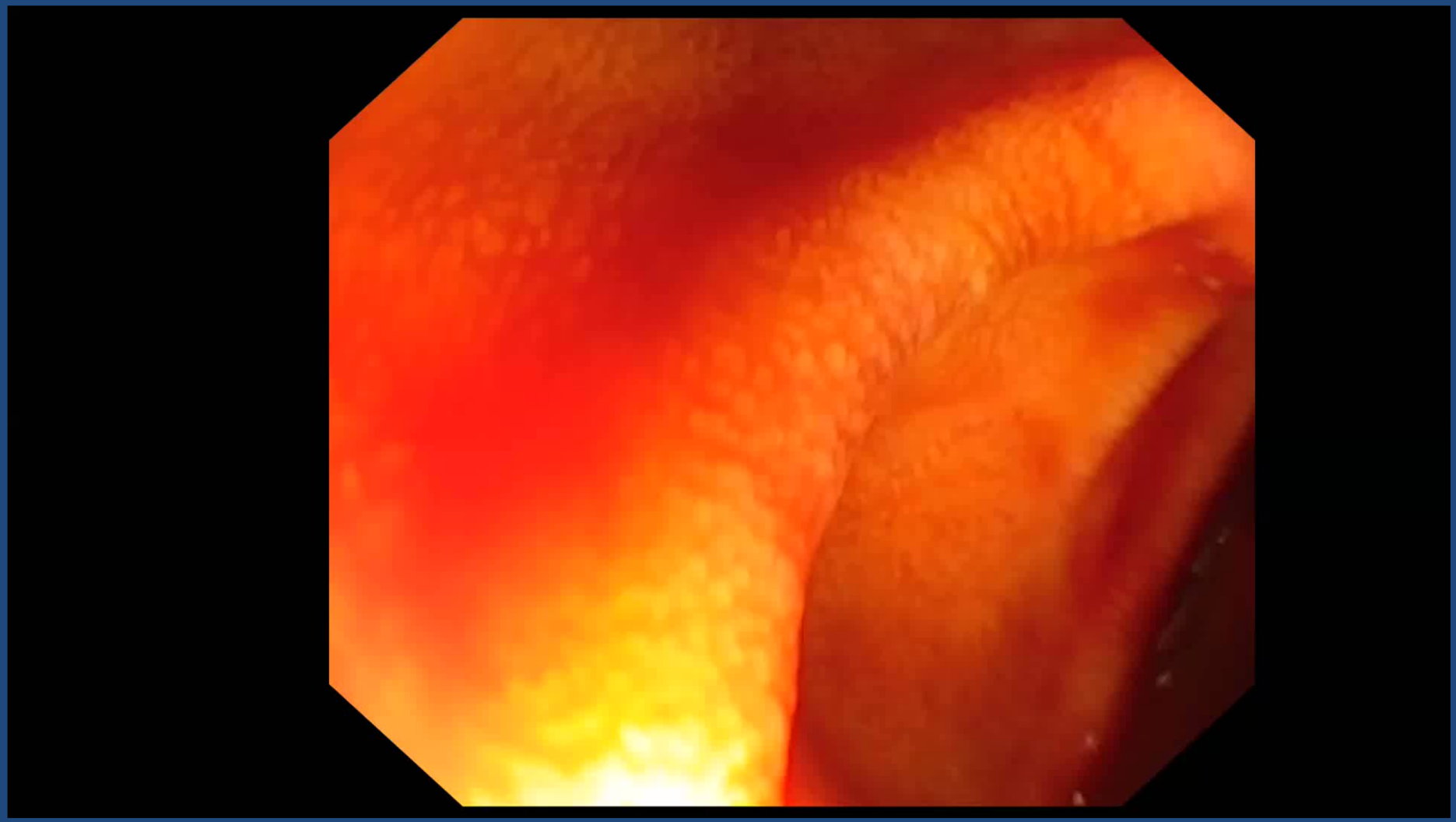
The cutting wire of a Sphincterotome (APEX Bleeding)

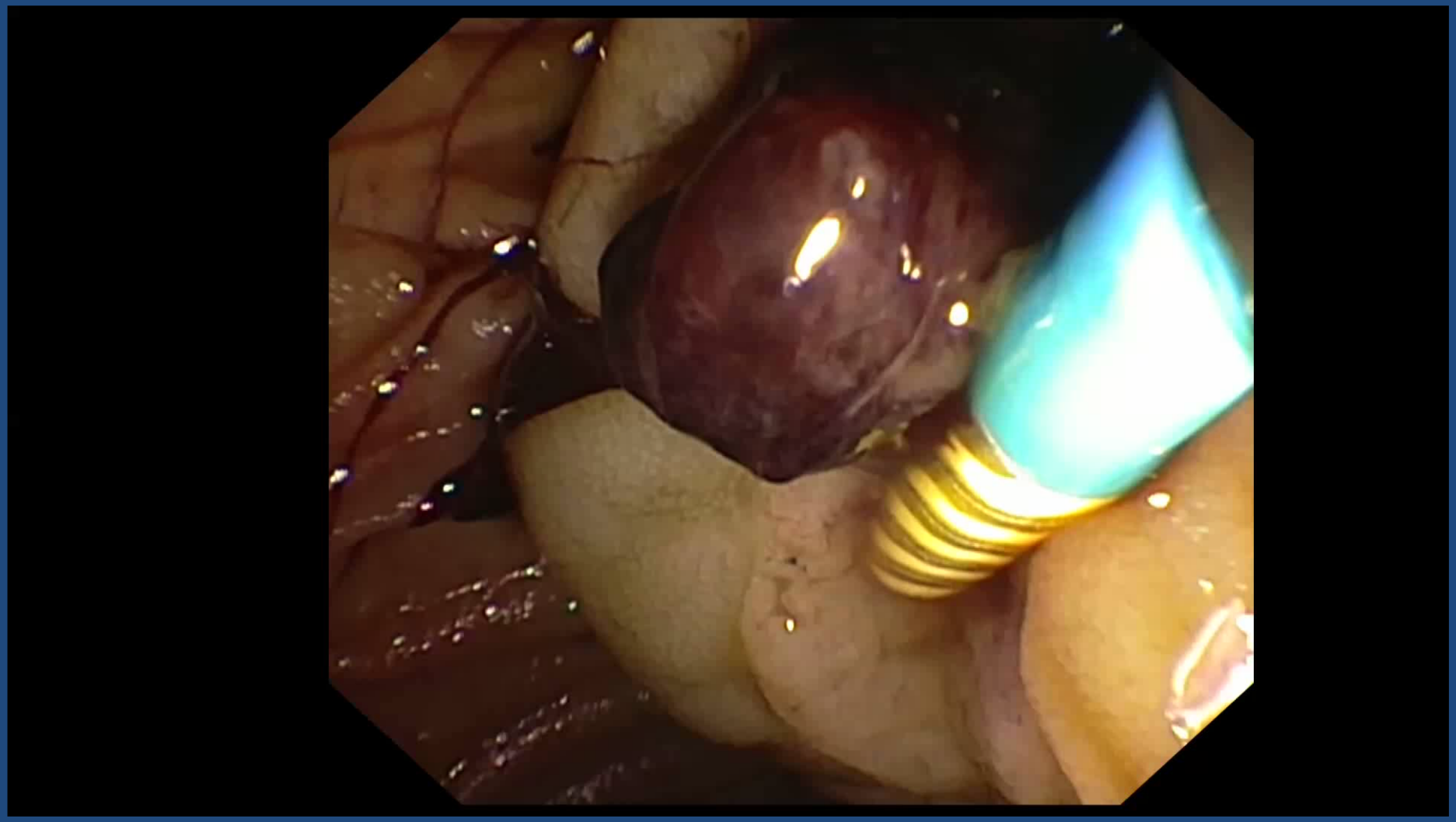
Coaptive coagulation (using bipolar or heater probe devices (BANKS bleeding)

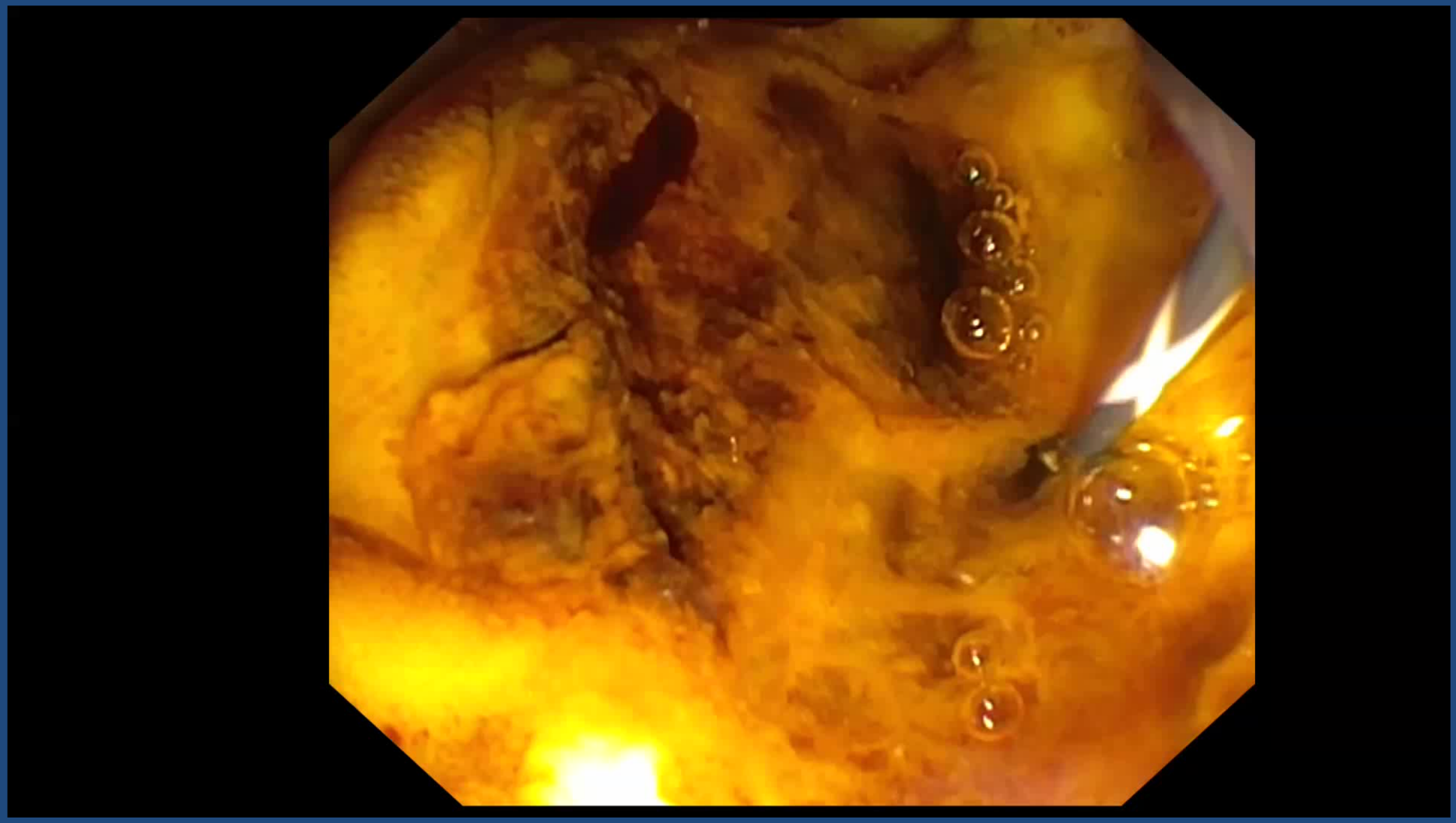
Coagulation current 40-50 Watts

AVOID PANCREATIC ORIFICE!

Sherman et al GIE(1992): 38:123-6,
Kuran et al GIE (2006) 63: 506-11,







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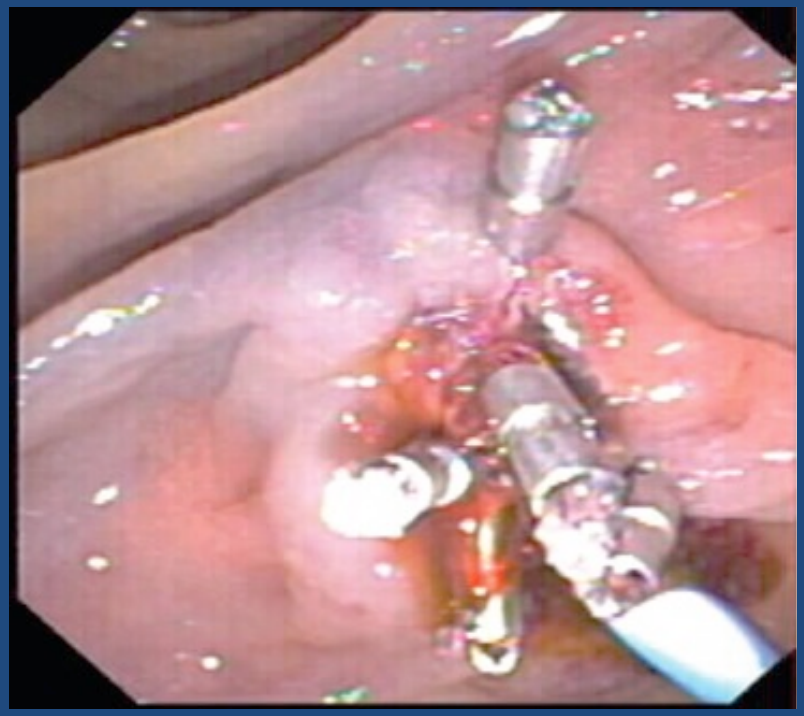
- Endoclips (maneuvrability?)
- APC



Baron et al GIE 2000; Waye et al GIE 2002
Oviedo et al GIE 2003

PEB MANAGEMENT: FOR REFRACTORY CASES
FULLY COVERED SELF EXPANDABLE METAL STENT

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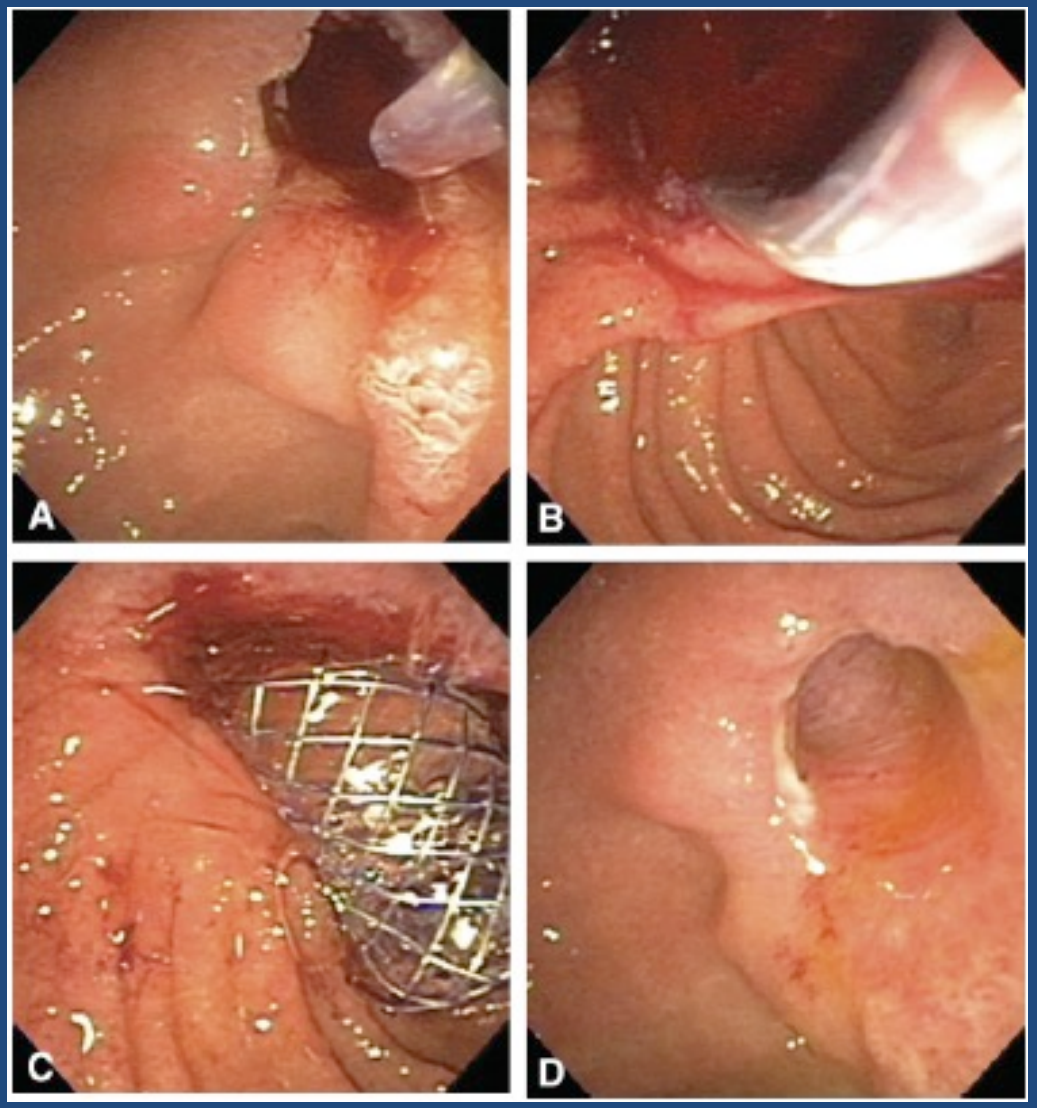

Shah et al GIE 2010

PEB MANAGEMENT: SALVAGE THERAPY FOR REFRACTORY CASES

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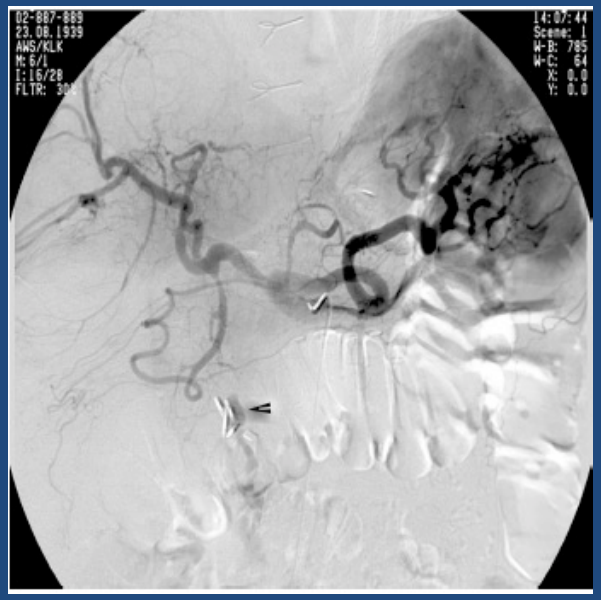
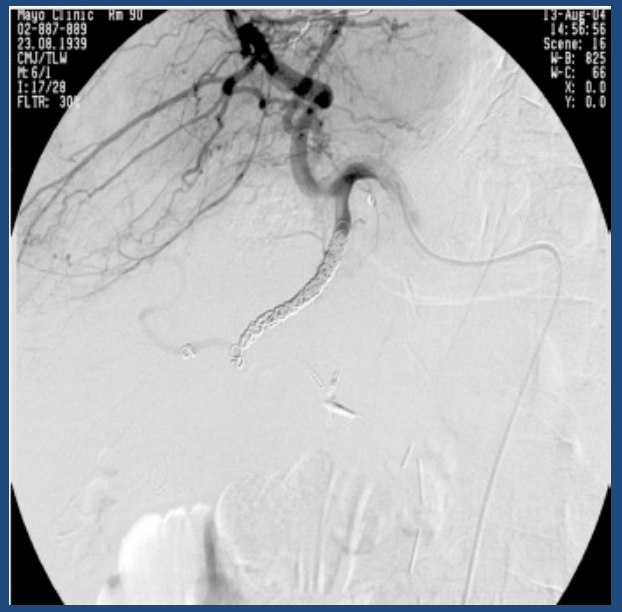
- (Haemospray)
- Angiography (and surgery in < 0,1%)

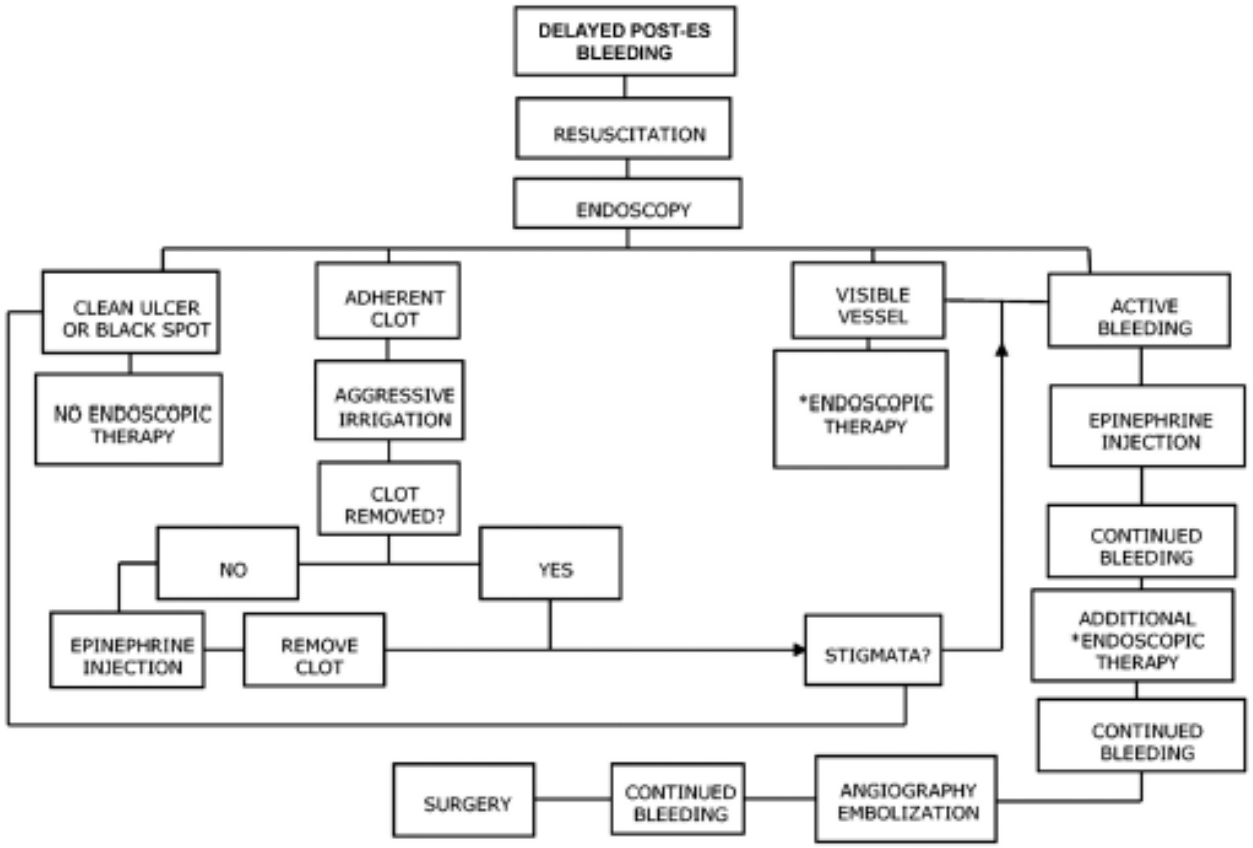




- Mortality of PEB was 1% is currently decreased to below 0,1%

Saeed et al GIE 1989;
Oviedo et al GIE 2003

ENDOSCOPIC MANAGEMENT OF PEB



* = Thermal therapy, Clips or temporary FC SEMS, Haemospray

Figure 7. Proposed algorithm for treatment of delayed post-ES bleeding.

Adapted from Ferreira & Baron, Am J Gastroenterol 2007

PEB CONCLUSIONS

- COMMON COMPLICATION OF ERCP
- IMMEDIATE OR DELAYED
- CONTROL RISK FACTORS (INCLUDING TECHNICAL ASPECTS)
- TREATMENT IS SUPPORTIVE AND ENDOSCOPIC

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DESMOPRESSIN

- DDAVP V2 agonist (cAMP increase in plt)
  - 0,3µ/kg in 10-30 minutes
  - Peak between 30-60 min, after infusion
- Estrogen

Veitch et al Gut (2016); 65 : 374-89

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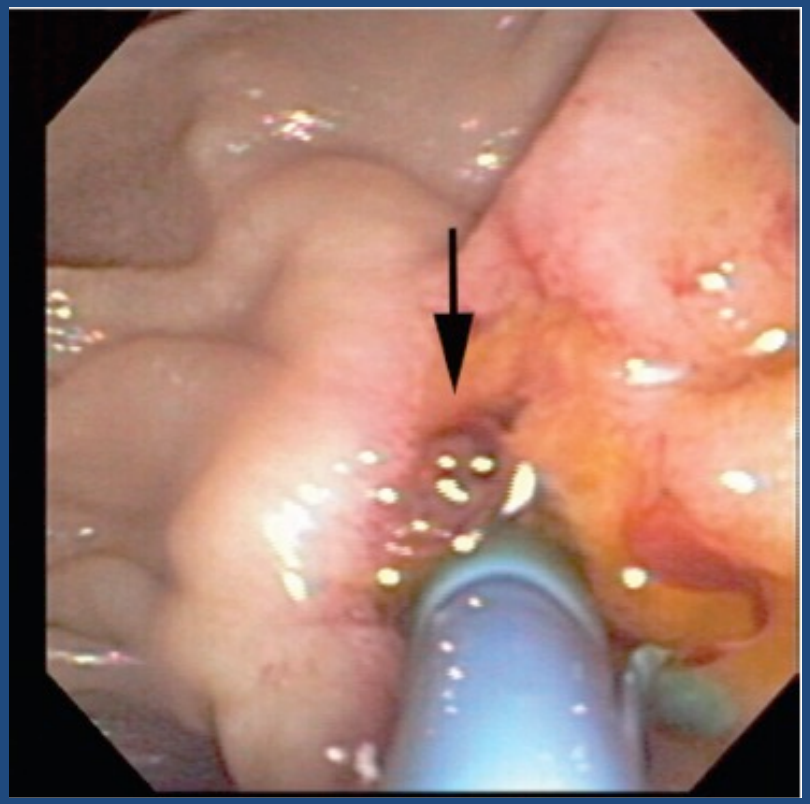
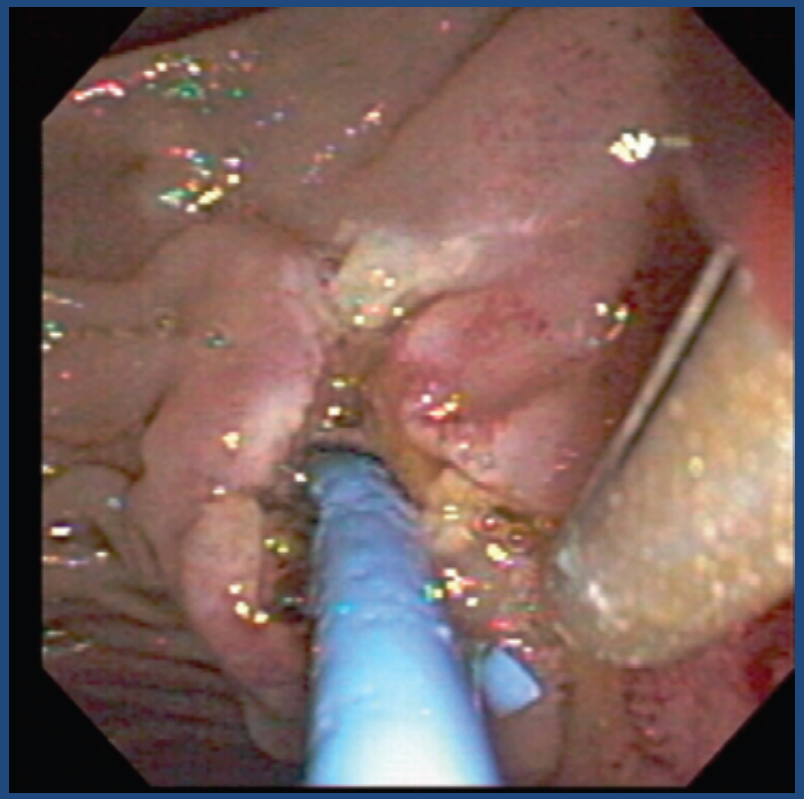
- BEFORE



- AFTER GP coagulation



BSG & ESGE GUIDELINES (2016)

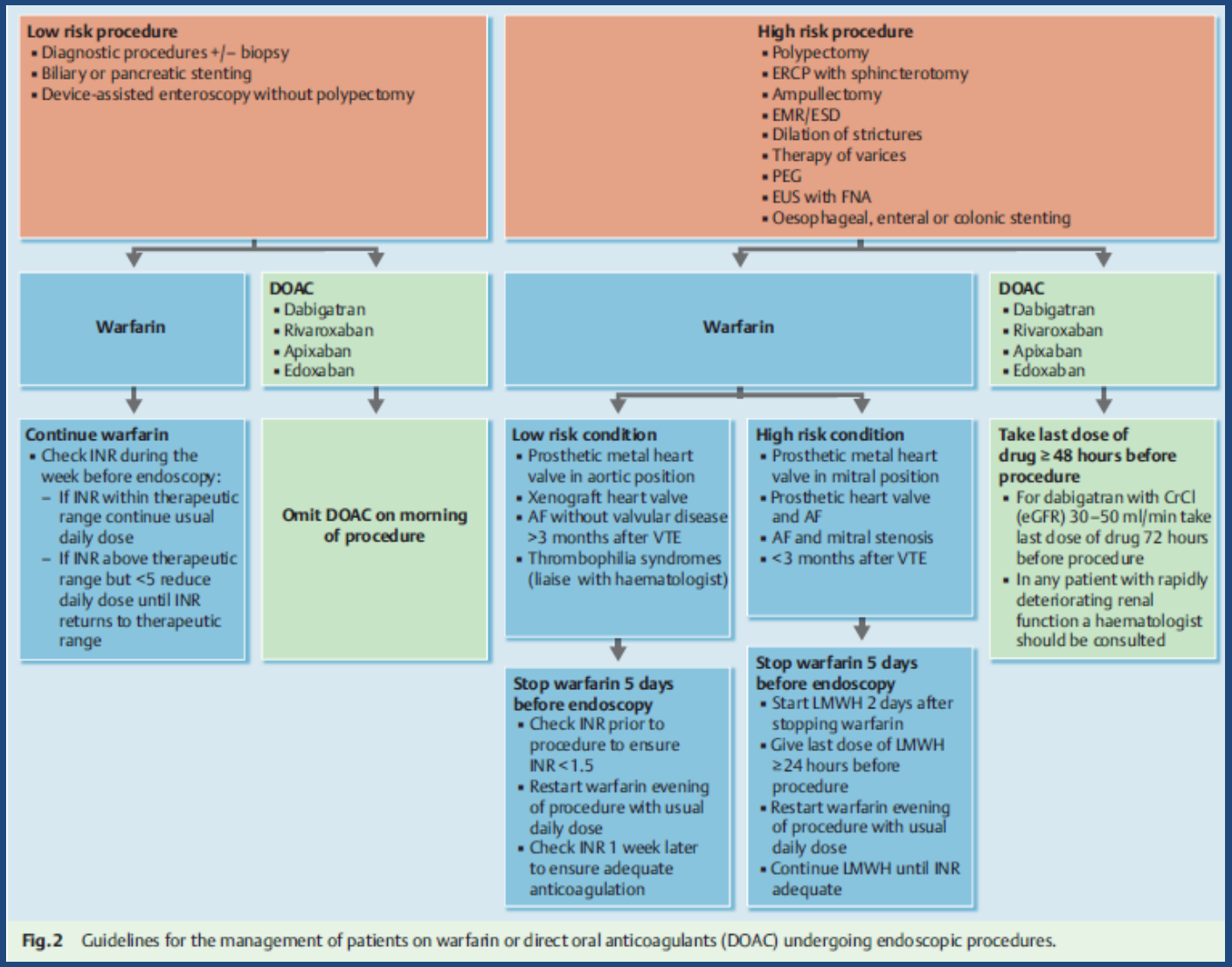


Fig.2 Guidelines for the management of patients on warfarin or direct oral anticoagulants (DOAC) undergoing endoscopic procedures.

Veitch et al Gut (2016); 65 : 374-89

BSG & ESGE GUIDELINES (2016)

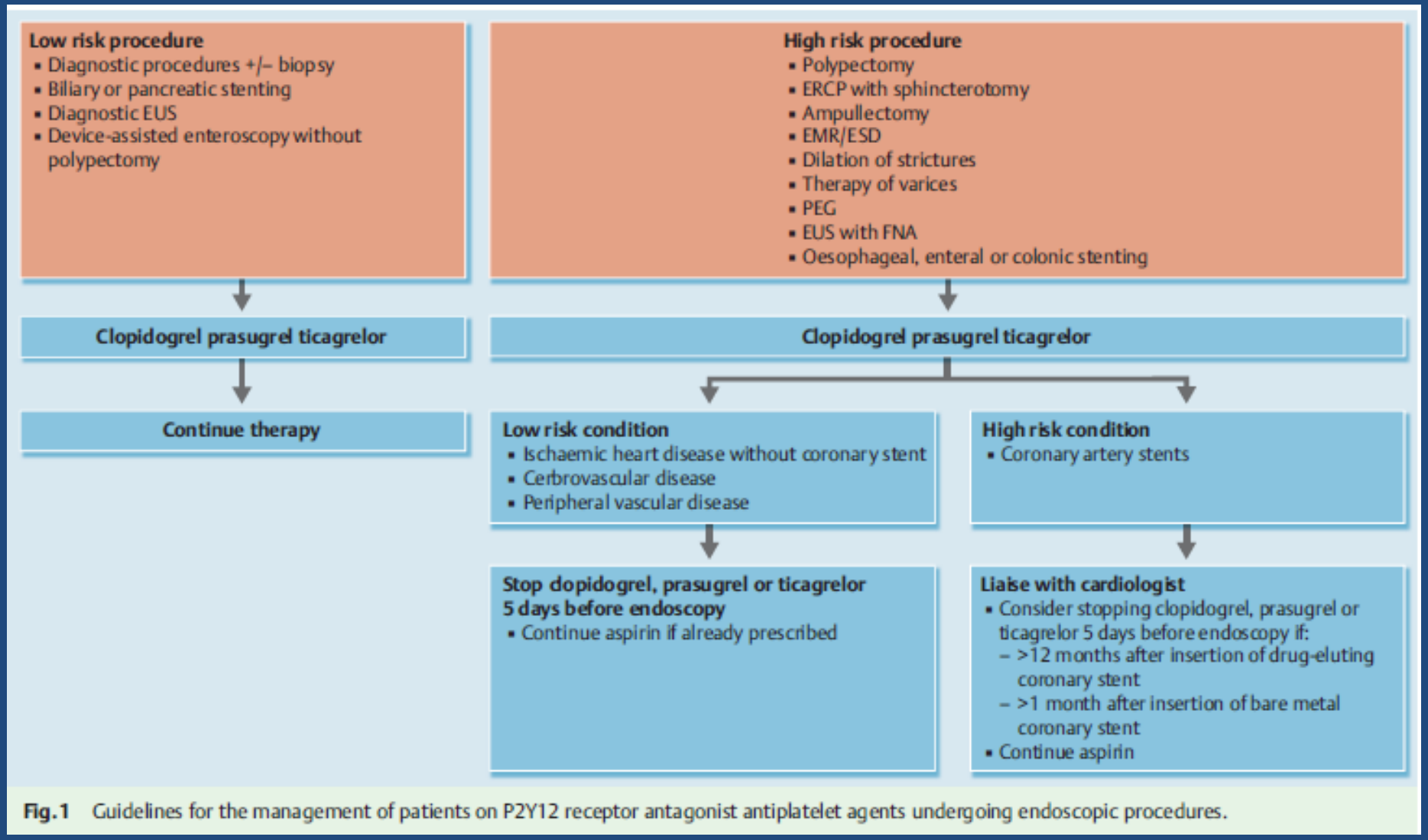


Fig. 1 Guidelines for the management of patients on P2Y12 receptor antagonist antiplatelet agents undergoing endoscopic procedures.

Veitch et al Gut (2016); 65 : 374-89