"Yikes! The Patient has Recurrent GI Bleeding and I Can't Find the Source. What Now?" Investigating and Treating Resistant Anaemia due to Occult GI Blood Loss

Zoë Raos

Waitemata DHB

New Zealand Society of Gastroenterology | NZgNC NZNO GASTROENTEROLOGY NURSES' COLLEGE

ANNUAL SCIENTIFIC MEETING 2021

TOWN HALL, CHRISTCHURCH
17-19 NOVEMBER 2021

"Yikes! The Patient has Recurrent GI Bleeding and I Can't Find the Source. What Now?"

Zoë Raos, Gastroenterologist
Pres. NZSG

Waitemata District Health Board
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Yikes!

- Focus on the 5% of GIB that are obscure, and often problematic
- Look at the definitions & evidence
- Useful tools & tips for challenging cases
- Add in key aspects from UGI and LGIB literature
- Incorporate case learning

Definitions

- **Obscure GIB** – 'bleeding of unknown origin that persists despite bidirectional endoscopy'
  - **Overt** - visible
  - **Occult** – 'invisible' +/- IDA
- **Suspected small bowel bleeding** is a new term
- **Broad aetiology** with huge range of patients
- **Regional variability** in NZ and internationally with teams & resources available

Aetiology of small bowel bleeding	Clues from the history
20-30%: Angioectasia	Older, valvular heart disease
Small bowel tumours	Neuro-endorine, B-Symptoms
Erosions/ulcers from NSAIDS	Nurofen-Plus
Crohn's	calprotectin, ASCA, ANCA
Meckel's or small bowel diverticular	younger patient
Dieulafoy lesion	Torrential recurrent UGIB
Small bowel varices	portal HT
Aorto-enteric fistulae	Torrential
Radiation enteropathy	RT in Hx
Unknown	

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References for this talk:

- The role of endoscopy in the management of suspected small-bowel bleeding. ASGE. Gastrointestinal Endoscopy. 85(1) 2017
- BMJ: BSG: Diagnosis and management of acute LGIB 2019
- BMJ: State of the art review: Management of acute UGIB 2019
- Frontline Gastroenterology: Siau et al. BSG-led multisociety consensus care bundle for the early clinical management of acute UGIB
- BSG Guidelines on endoscopic therapy for UGIB
- Experience of interventional, VCE & radiology colleagues at WDHB

- Many more practice guidelines
- All depend on the niche!

ASGE:

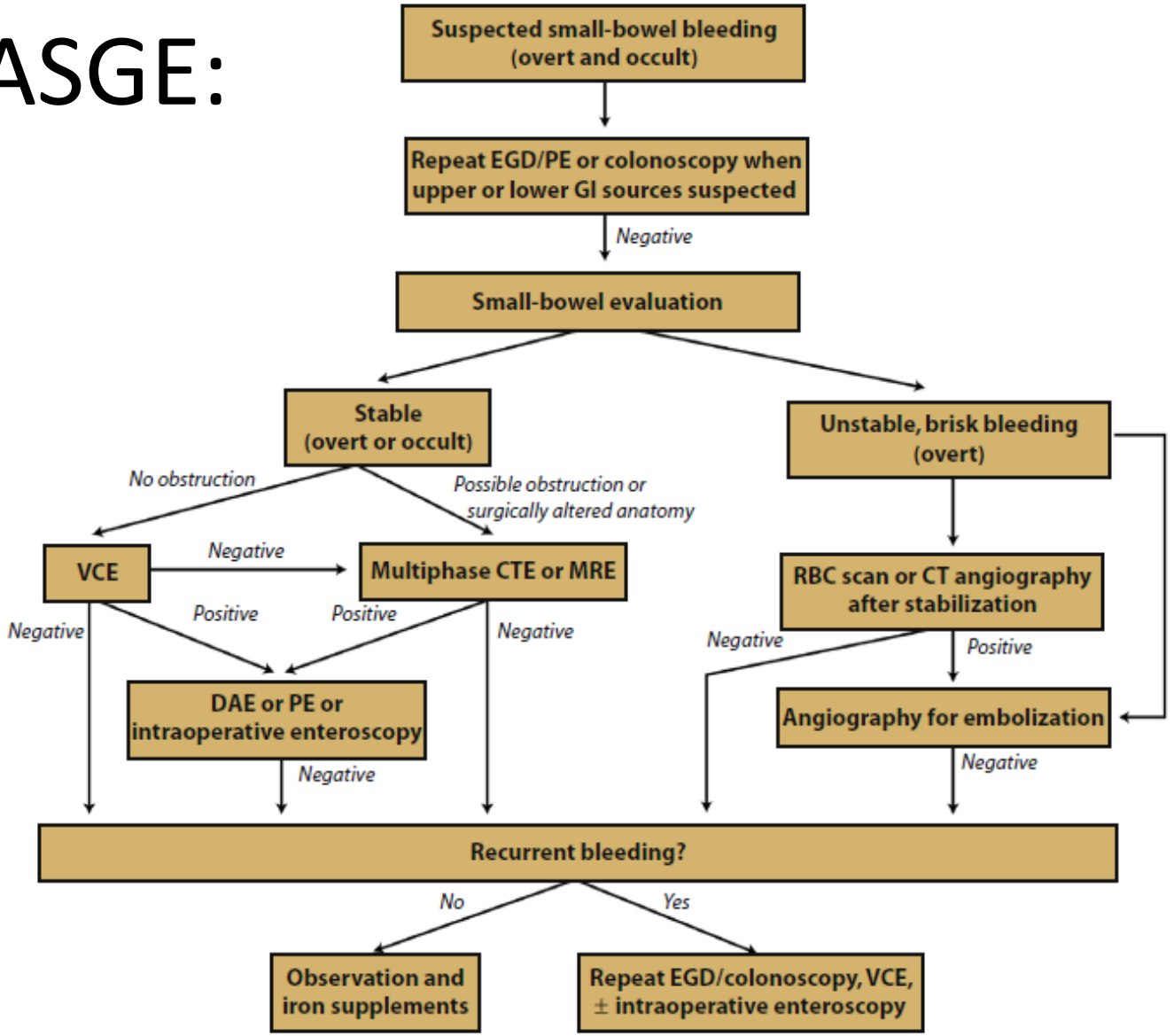
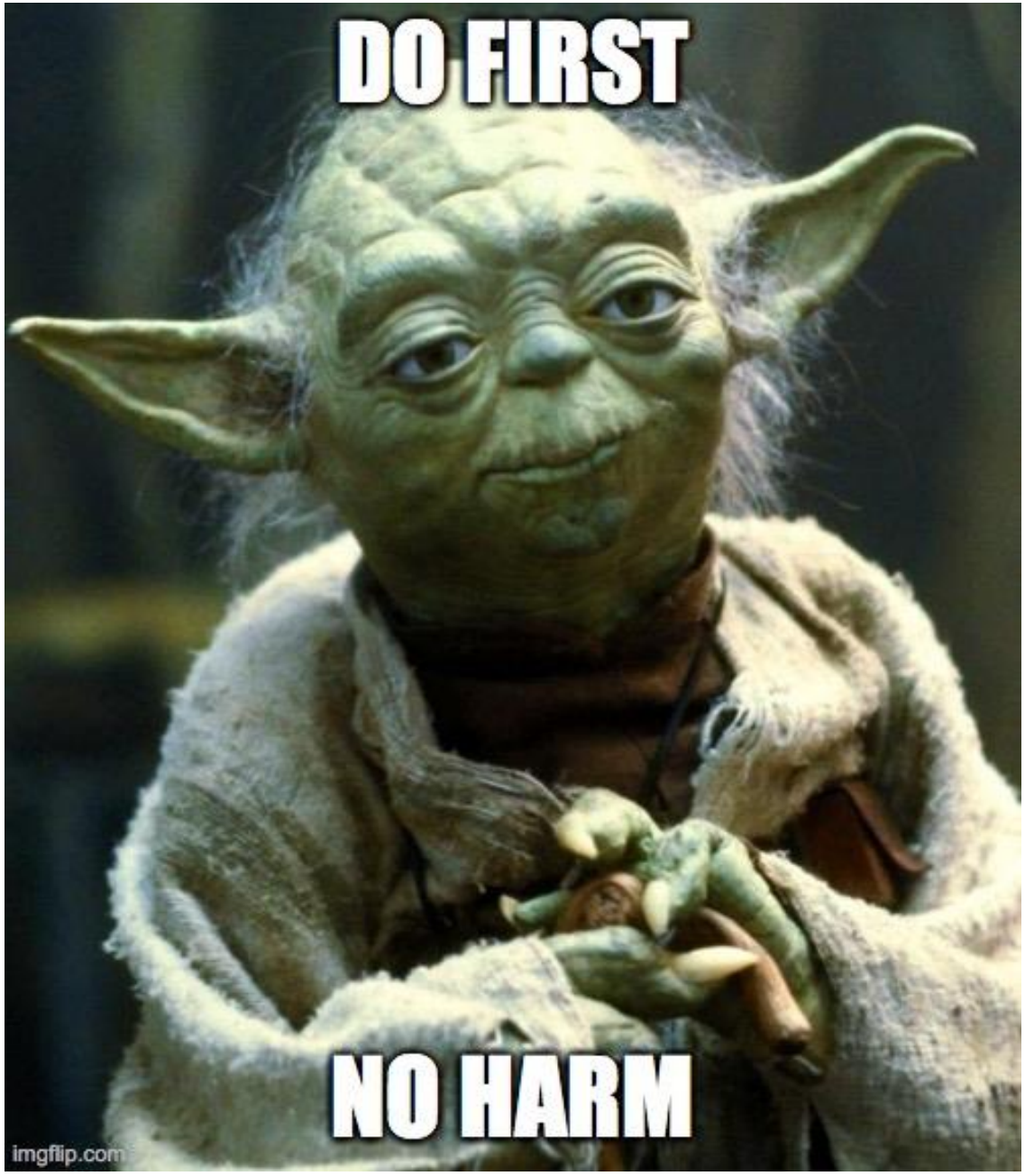


Figure 1. Suggested management approach to overt and occult small-bowel bleeding. Positive test results should direct specific therapy. Because diagnostic tests can be complementary, more than 1 test may be needed, and the first-line test may be based on institutional expertise and availability. *PE,* push enteroscopy; *VCE,* video capsule endoscopy; *DAE,* device-assisted enteroscopy; *CTE,* CT enterography; *MRE,* magnetic resonance enterography; *RBC,* red blood cell.


DO FIRST
NO HARM
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Blood thinners and platelet meds

	Drug	When and how to stop	When to re-start post bleed
Warfarin	**low** thrombotic risk	Unstable: stop, give IV Vit K and Prothrombinex	7 days after bleed
	High thrombotic risk (MVR, AF + valve, MS, recent DVT/PE)	Stop if major bleed Reverse: IV Vit K and Prothrombinex continue if bleeding mild	Enoxaparin - 48h after bleed Bridge back to warfarin
DOAC	Rivoroxiban, Epixiban	Stop: short half-life Reverse: idaruzumab / andexanet Don't give Vit K or prothrombinex	Restart after 7 days
Aspirin	**primary** prophylaxis (Cartia at the supermarket	Stop now	Don't restart
	secondary prophylaxis (had angina, stroke)	Don't stop!	If you have to stop, then restart ASAP
Antiplatelets (P2Y12 inhib) Clopidogrel Ticagrelor	Monotherapy – e.g. TIA	Stop: short term	ASAP
	Clopidogrel + Aspirin Recent coronary stent, vascular stent, recent stroke	BSG says 'call the senior cardiologist/vascular surgeon' If very unstable then stop P2Y12 and bridge with aspirin Platelet tranfusion – no!	Start P2Y12-inhib within 5 days

Restrictive Blood Transfusion (BSG) in an acute bleed

	Trigger to transfuse	**Hb target**
Most patients	70	70-90
Cardiovascular disease	80	100
Platelets	<50	50+

Tranexamic acid

- Good for trauma, historic data?
- BSG says … not in GIB. Await HALT-IT trial

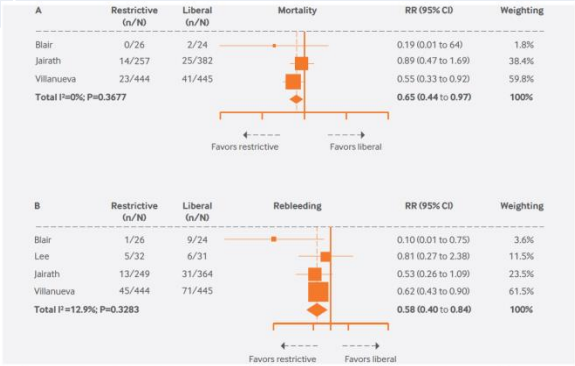
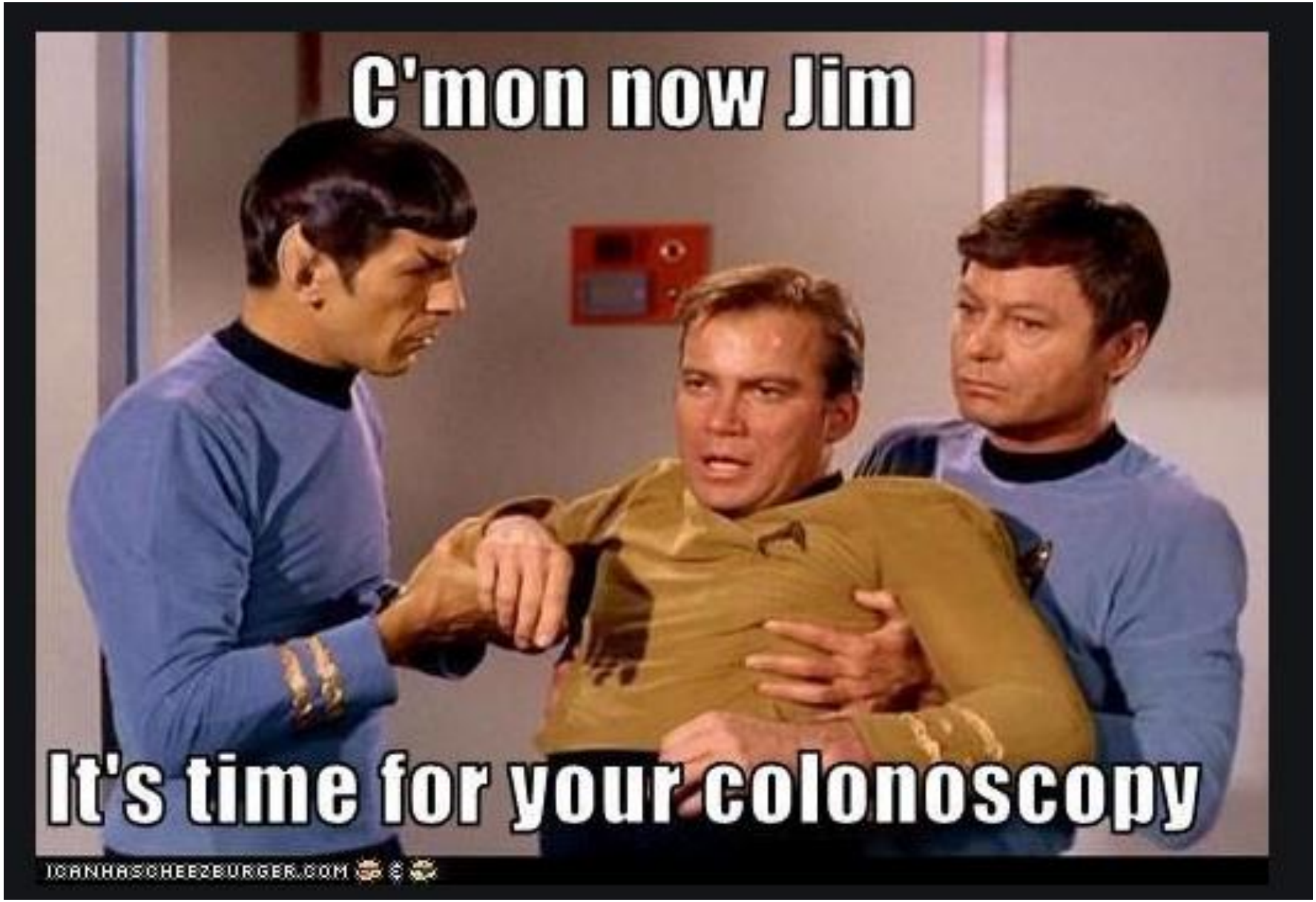


Fig 1 | Blood transfusion meta-analysis: liberal versus restrictive transfusion for (A) mortality and (B) rebleeding.[22] Reproduced with permission from Elsevier. Abbreviations: CI=confidence interval; RR=relative risk.


C'mon now Jim
It's time for your colonoscopy
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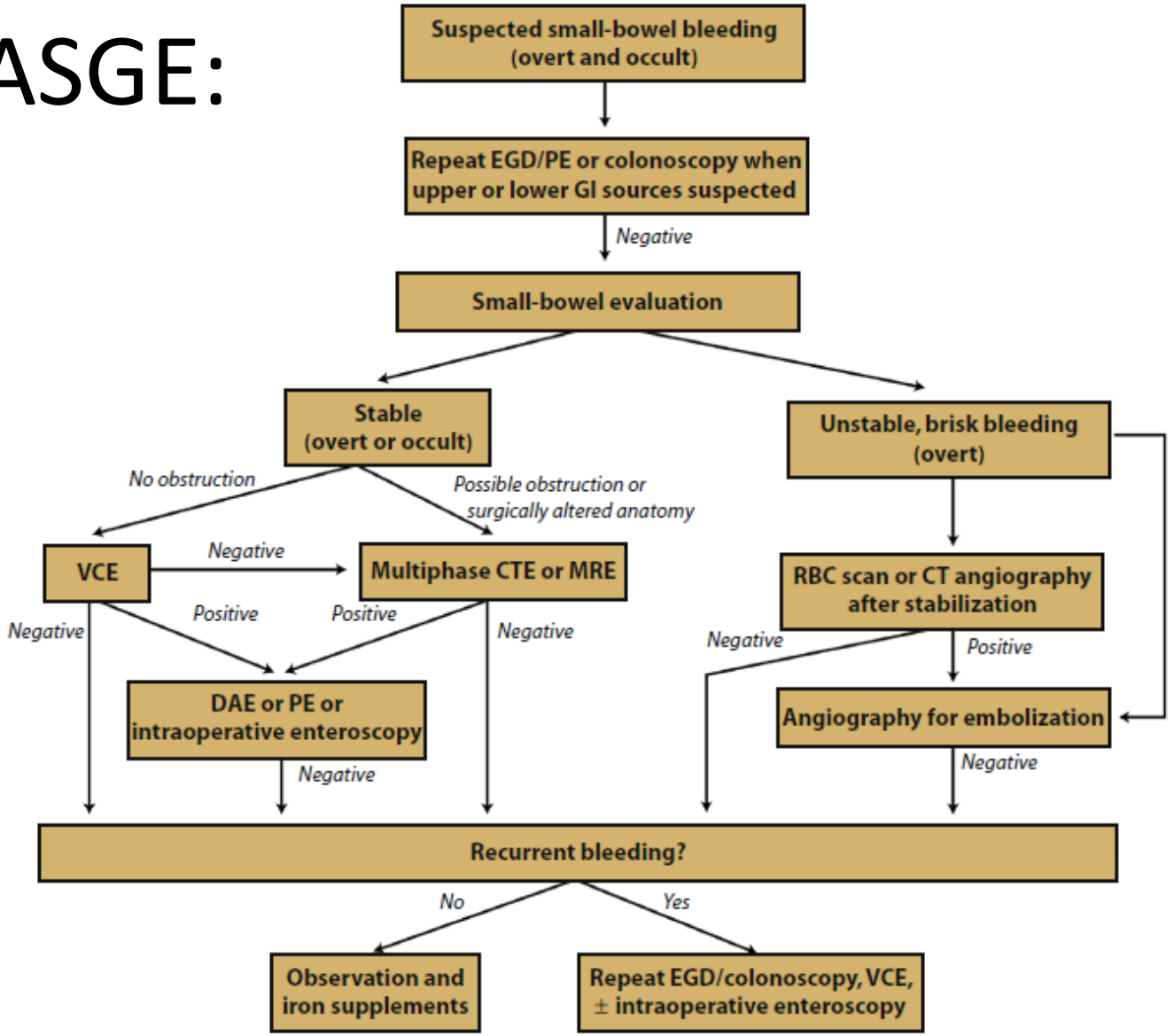
ASGE:



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Case 1: Mrs X

- 78yo Chinese woman, daughter a nurse at NSH. Mechanical MVR 1998, AF, on warfarin. Progressive LVF.
- IDA 2018: Presented with anaemia as inpatient and outpatient
  - 5 x OGD, 3 x colonoscopies
  - MR-E
- Small Caecal AVMs, treated with APC. IDA continues.
- Comes to Waitakere Day Stay for Ferinject + transfusions every 5 weeks to keep Hb above 90

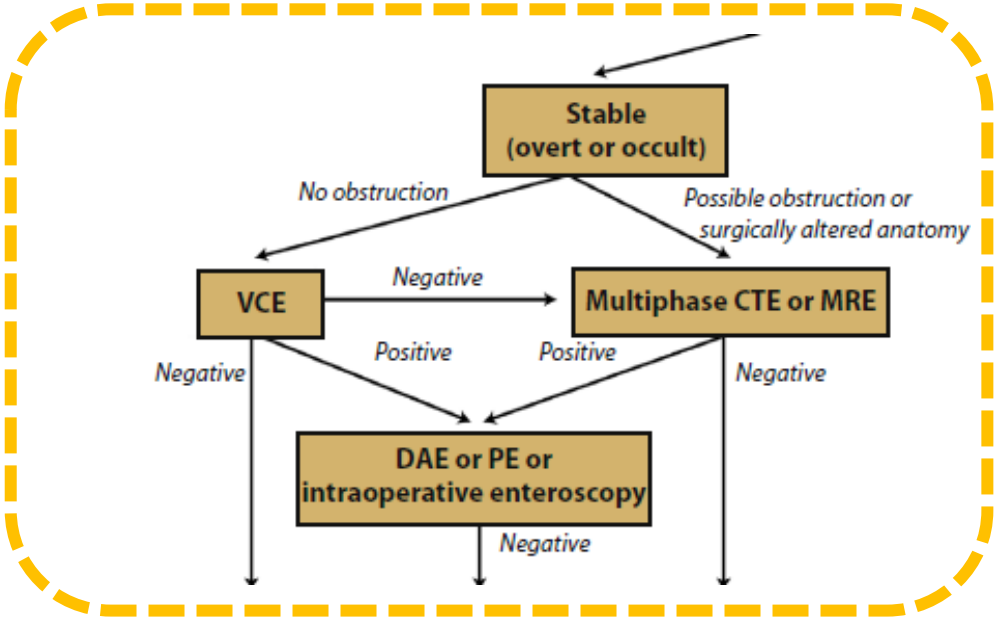
ASGE: Occult / or Stable Overt bleeding:

– **CT or MR-E – imaging first** if concerned about anatomy in younger patient

– **Video Capsule Enteroscopy first** if AVMs more likely

*probably do both!

Next step: Enteroscopy – Push (PE) or Balloon (DAE – especially good for roux-en-Y / bypassed bowel)



What about imaging?

Cross sectional imaging is vital for small bowel bleeding

- **CT-E** Oral and IV contrast (ASGE)
  - Inflam lesions, Tx,
  - vascular: angioectasias, varices, Dieulafoy, Ao-Enteric fistulae, aneurysms
- **CT-A** (no oral contrast) (UK, NZ)
  - 198 patients: sens 89% and spec 85% with all GIB
- **MR-E** – limited data, common in this context in NZ

Cross-sectional imaging + VCE = complimentary:

- Detected lesion in 16/17 patients (Vs VCE alone 6/17).
- Pooled yield of 40% with CTE, and 50% yield if negative VCE

Less common scans:

- Radio-isotope scans (Technetium RCC scan): need to bleed 0.1 – 0.4 mL/min. Limited use.
- Small bowel follow - rare, low yield (3-6%)
- Enteroclysis: MR-E and CT-E largely replaced

Endoscopy - what else?

VCE: PillCam within 48h of large LGIB: yield 87-91%

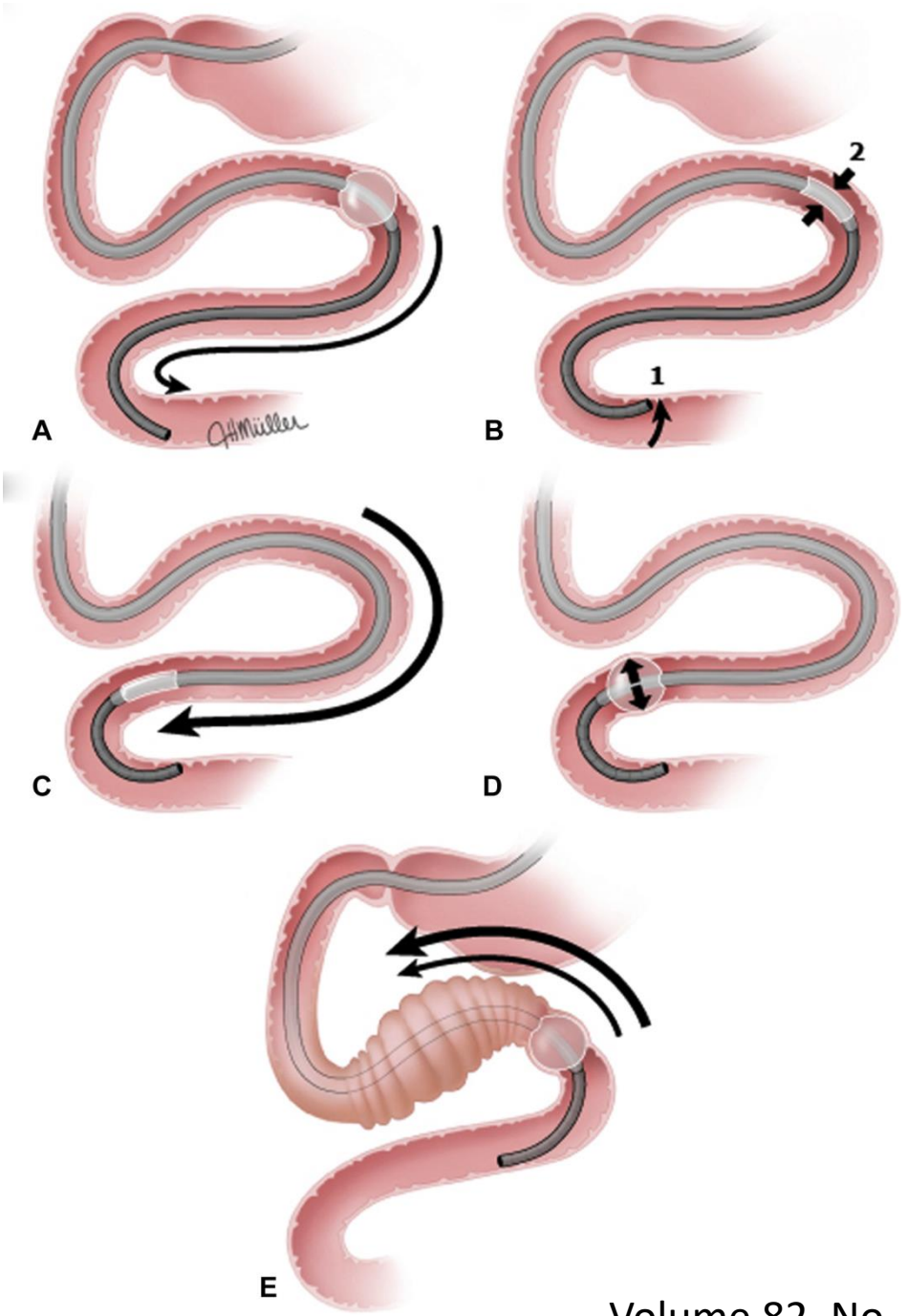
- Beyond 3 days: yield <50%
- Higher yield if done first than SB radiography, cath & push enteroscopy
- **Strategy:** VCE first; if + then DAE = Pooled yield: 53%

C.I: Obstruction from adhesion or tumour

Patency capsule

- **PE** = push enteroscopy
- **DAE** = device assisted enteroscopy (balloon)

DAE: Single Balloon



Volume 82, No. 6 : 2015 GIE

Lower GI Bleeding: endoscopic options

Injection	1mL aliquots of 1:10,000 adrenalin	Good initial choice Do not use alone	(caution in rectum and near GDA)
Mechanical	Through the scope – standard clips.	First line for diverticular bleeding – low risk, easy Great to mark an area for IR, or repeat endoscopy	30% risk of rebleeding in some series Need skill and practice
	Over the scope clips OVESCO	high risk lesions in high risk patients Diverticular bleeds Close defect There is a grasper which helps pull an ulcer into the cap	Take scope out, put it on, re-insert Need teaching and training Difficult (not impossible) to remove, special removal device or APC Hard to manouevre
	Endoscopic band ligation	Great for haemorrhoids and varices Not commonly used or licneced in LGI but can be	Take scope out, put it on, re-insert Need teaching and training Difficult (not impossible) to remove, special removal device Hard to manouevre
Haemostatic powder	TC-325 Hemospray.	handy when tried everything else Limited technical skill required Buys time when NOACs involved Buys time for malignant GIB	not licensed in UK for LGIB Catheter easily blocked Keep the channels dry Obscure views: can make it harder to go back
Thermal	Gold Probe	Visible bleeding vessel	Bipolar, - low power, less pressure, shorter pulses Gold probe + ERBE 10-15W, 2s pulse
	APC		– lower gas volume and power – ERBE 0.8L, 30W

Case 1: What happened?

- Did all the tests: Push & DAE. Multiple AVMs treated, clipped, APC
- Tried TXA. Tried Thalidomide.
- Kept losing iron.

Plan:

- Ongoing discussion with Cardiology and CT about re-do MVR (driver of the AVMs)
- Kept on warfarin – stroke risk
- Continues on Ferinject.
- Stopped endoscopies as a department (no benefit)

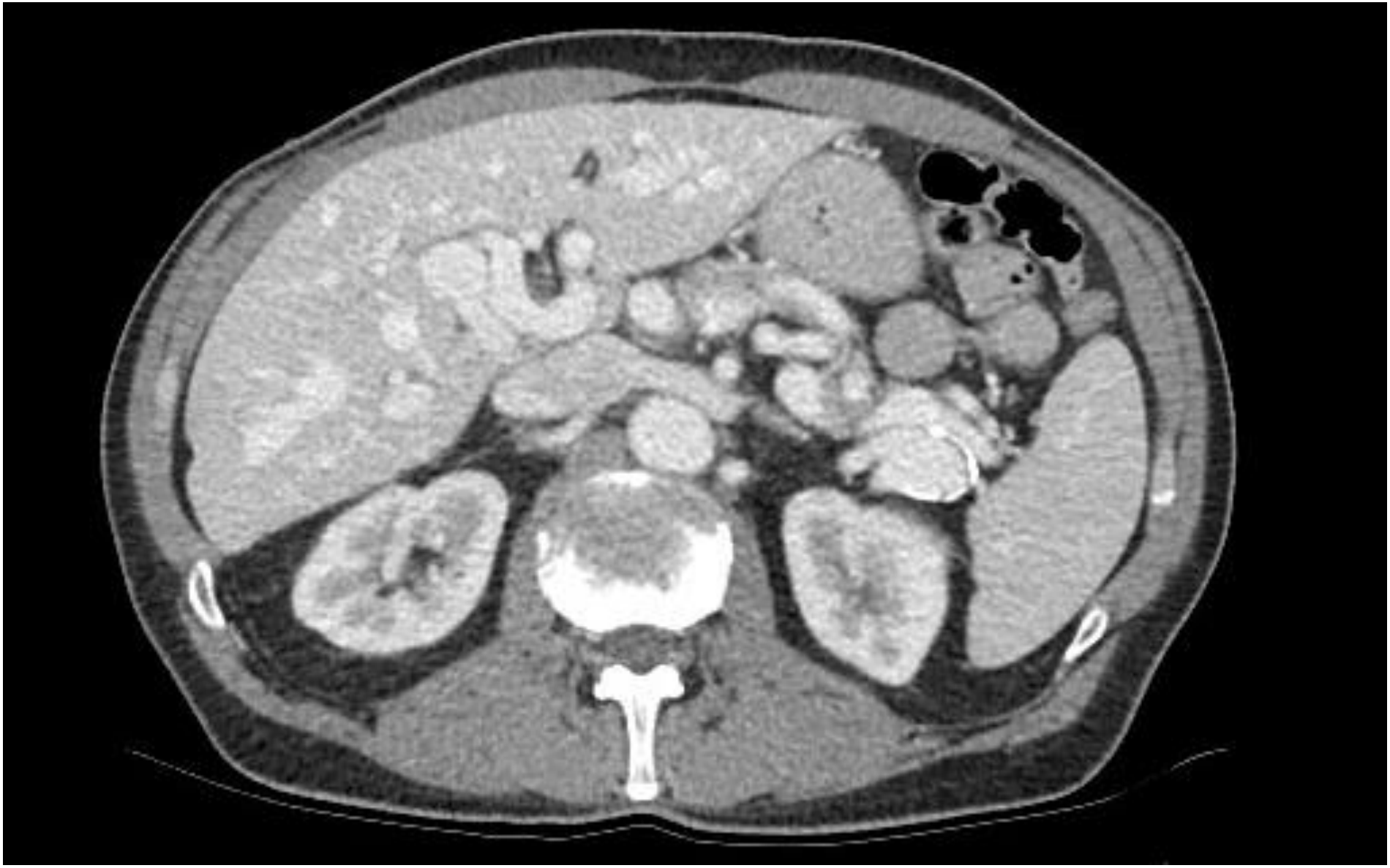
Case 2: Mr B

- **69yo fit and active farmer with known HHT /** Osler-Weber-Rendu. AD, Highly variable penetrance. His daughter died post heart transplant in childhood (HHT)
  - **Telangiectasia** – all through GI tract. Major epistaxis.
  - Pulmonary Arteriovenous Malformations + pulm HT
  - Hepatic AVMs. Portal HT.
    - **Arteriovenous shunts >> increased** cardiac output which *accelerates blood loss* via GI bleeding

Case 2: Mr B – the first 5 years

- **Telangiectasia** – multiple presentations: emergent and elective. OGD, Colon, Push-E. Referred for Double Balloon (inter-DHB)
  - Managed with Ferinject 5 – 6 weekly
  - Hypophosphataemia!
  - Sepsis & infections
- Pulmonary Arteriovenous Malformations - coiled
- Pulm HT /high output cardiomyopathy - watched
- Hepatic AVMs. Portal HT. AVMs wrapping around CBD causing obstructive cholangiopathy with ‘minor’ cholangitis

- Worked on his farm



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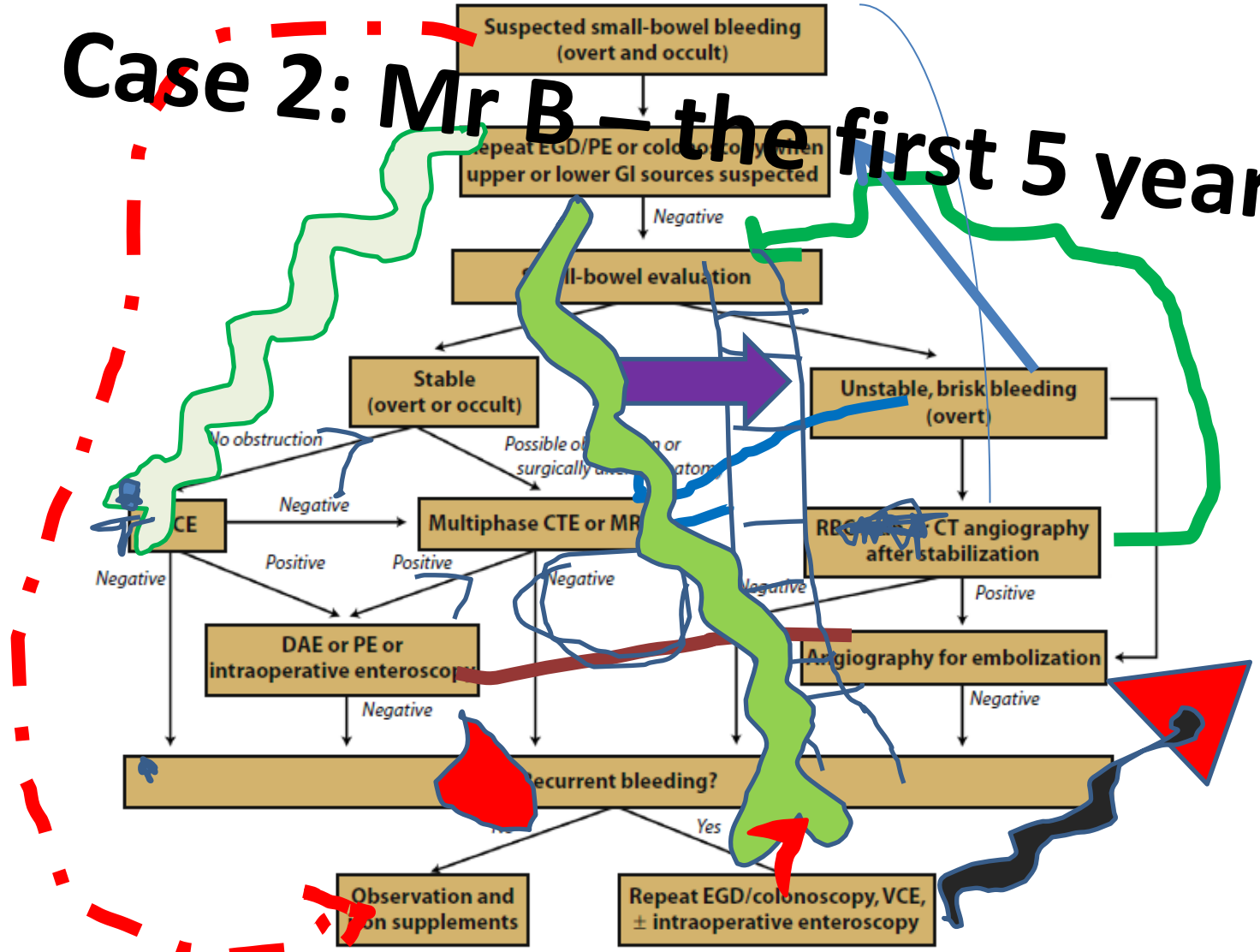

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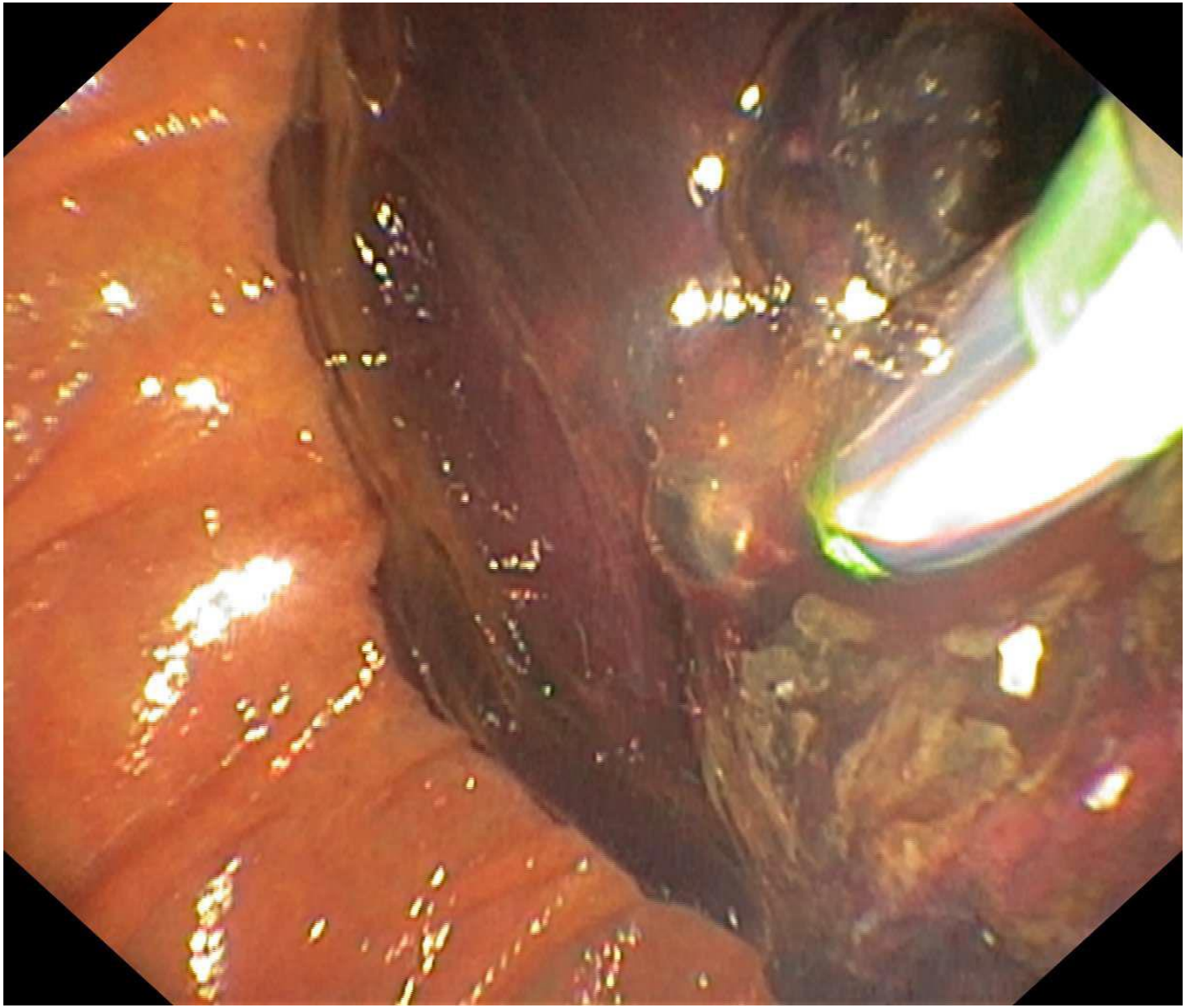
2020 for Mr B

- Presented to NSH in Level 4 lock down with severe cholangitis
- Crashed from sepsis > ICU
- Major inter-disciplinary discussions
- Took to theatre for ERCP



What next for Mr B?

- **? Liver transplant** - 10y survival rate is 82.5%. MELD-exception for transplant – portopulmonary HT = transplant priority
- **Bevacizumab** – Severe liver HHT, management fails, transplant not possible, especially for >65s or as a 'bridge to transplant'
  - Case reports of dramatic reduction in disease manifestations in hepatic and pancreatic AVMs
  - Concerns: clots, PE reported
- **Embolisation, ligation, banding** – no longer advised as risk of hepatic necrosis and 20% mortality rate

Emergency NPPA for Bevacizumab approved from PHARMAC

Pros

- ✓ **Standard of HHT care** in big centres
- ✓ **Decent body of evidence** now
- ✓ The **subset with severe grade 4 liver VMs** at high risk of poor outcome, - consider prophylactic Bevacizumab
- ✓ **Reduced cardiac index** in 24 patients with severe liver VMs and high cardiac output
- ✓ **Dramatic reduction in tranfusions and bleeding** (eg from 80% to 9% transfusion requirements)
- ✓ Has **prevented patients from requiring OLT** in case reports
- ✓ **Far fewer AEs** in HHT compared with cancer

Cons

- ➢ unpredictable efficacy + non-negligible toxicity (HT, headache)
- ➢ **Big RCTs lacking**
- ➢ **revascularization following drug withdrawal**
- ➢ Concerns of angiogenesis-dependent phenomena such as wound + anastomoses healing

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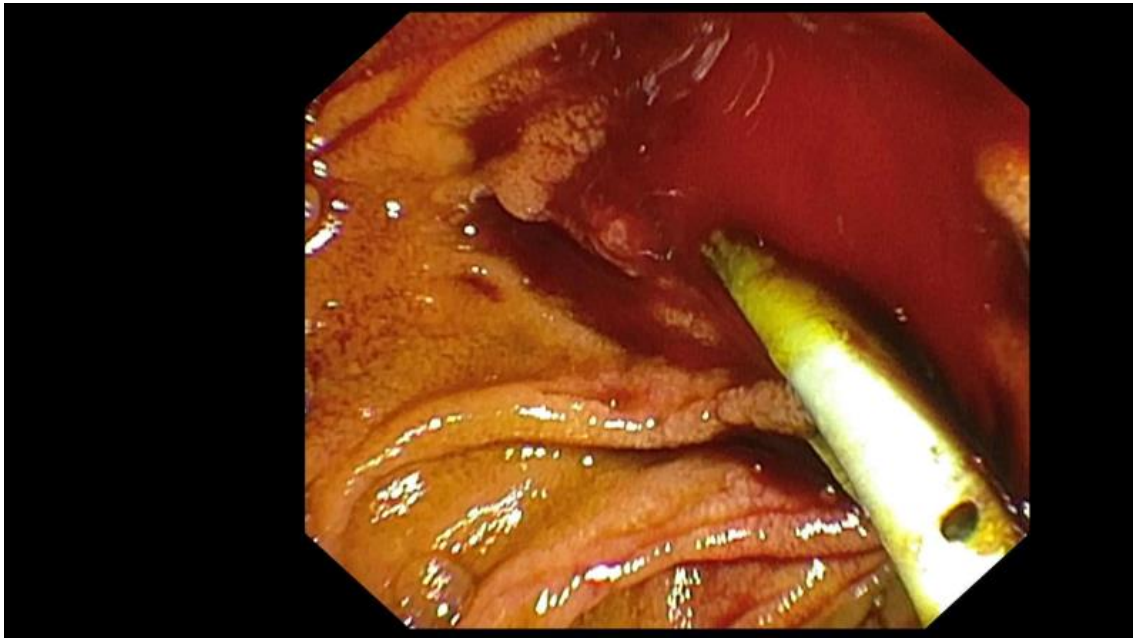

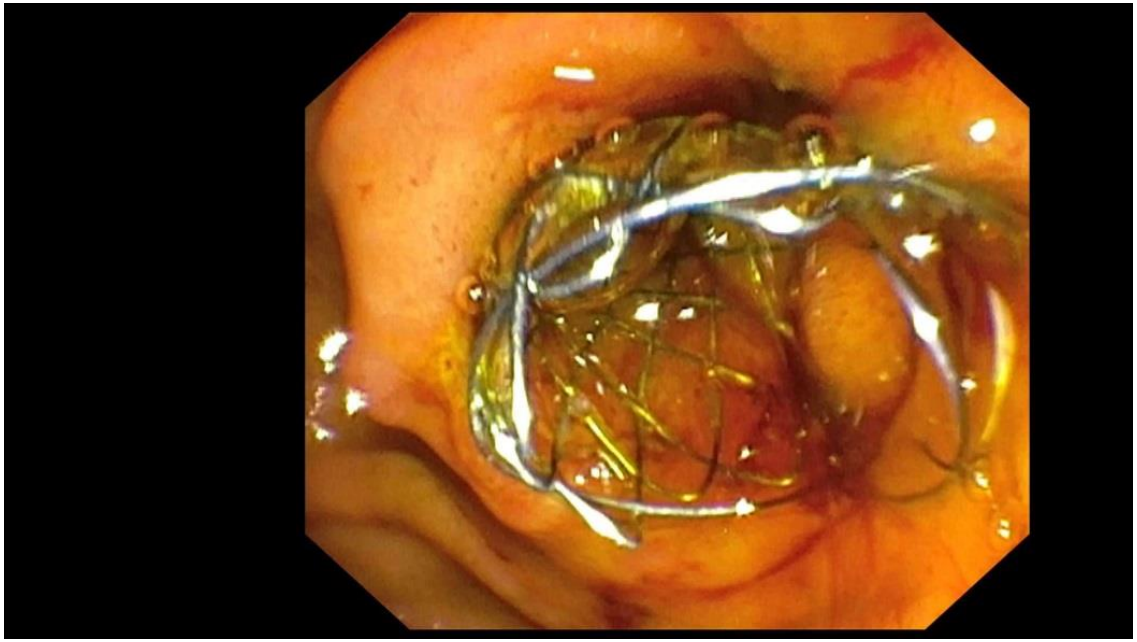

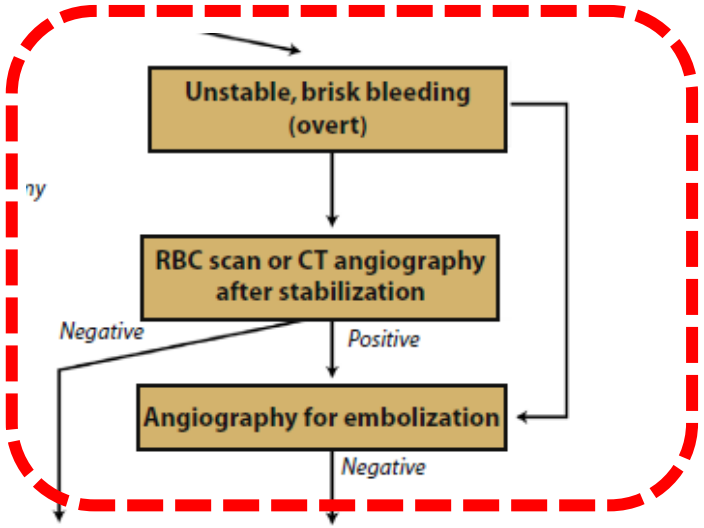

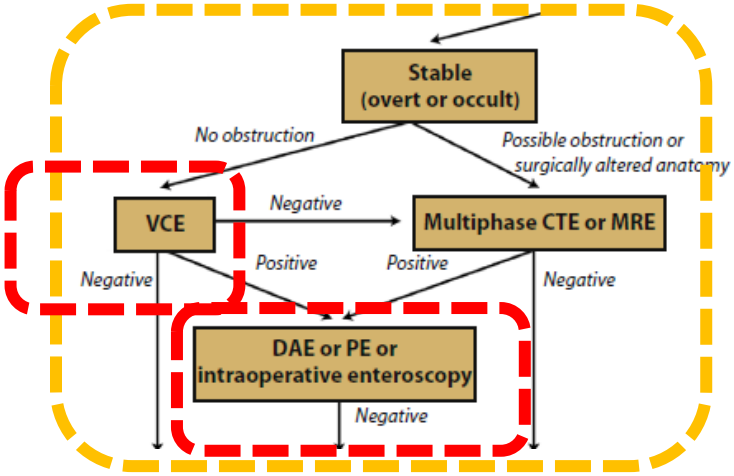

ASGE: Overt / unstable patient:

- **CTA** –first test in unstable **SBB**
- Sensitivity 79-95%, Specificity of 95-100%
  - Higher yield in unstable patients
- **Therapeutic angiograms** within 90min of CTA - 8x more likely to find & treat the bleeding point,
  - 93-100% published success
  - Complications: 7-24%
- **NSH Practice:** Consider emergency **push enteroscopy** or **VCE**
- **Intraoperative Enteroscopy** – team approach

Conclusion: Less yikes?

- 5% of GIB are obscure, and often problematic
- Demonstrated evidence, including tips & tricks from UGI and LGIB literature
- Challenging cases

Future Direction:

- GI Bleeding cases benefit from teamwork: surgery & gastroenterology need to share the yikes!

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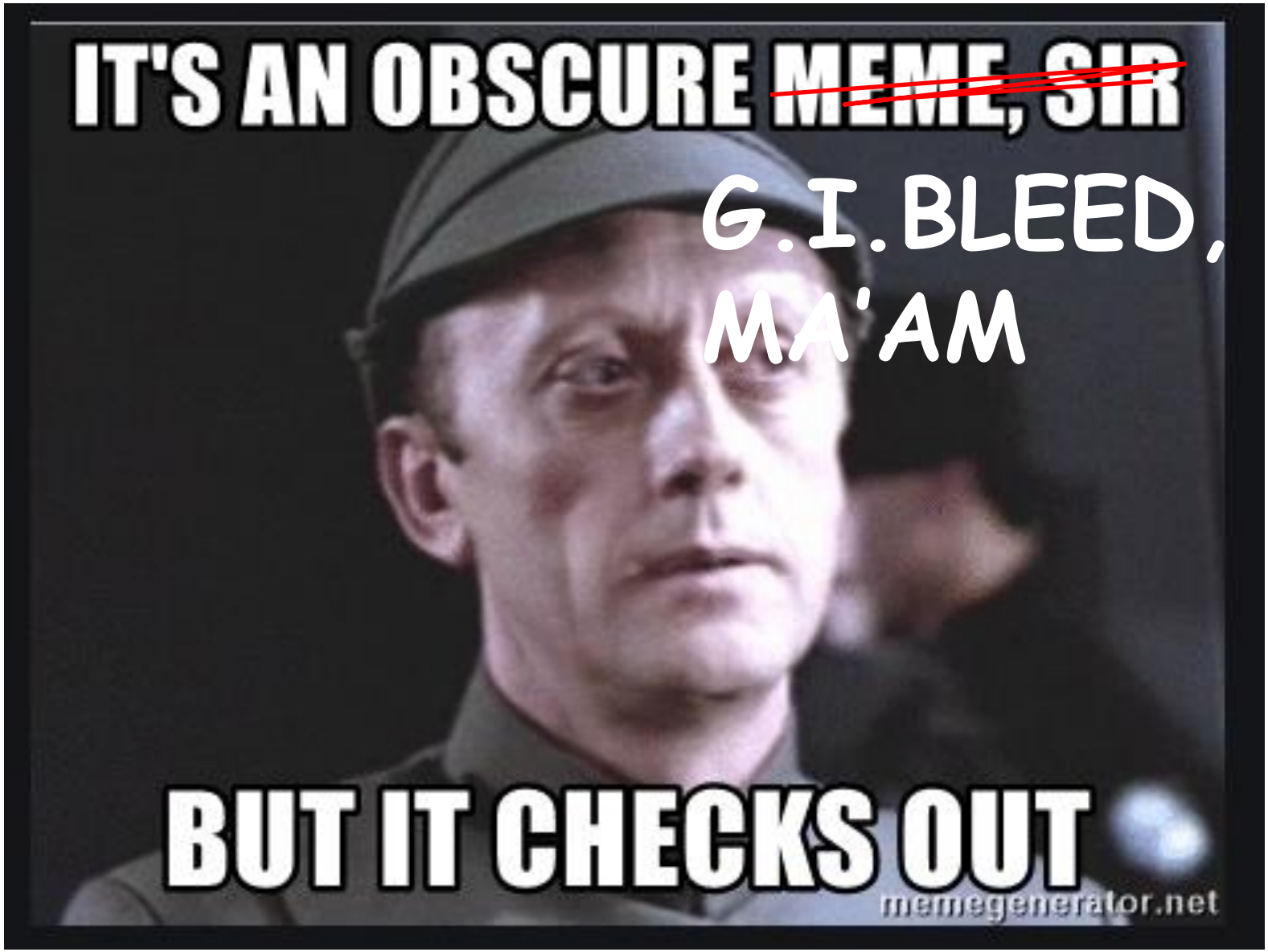
IT'S AN OBSCURE MEME, SIR
G.I. BLEED, MA'AM
BUT IT CHECKS OUT
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Figure 1 Components of over-the-scope clip (OTSC) system. The OTSC system is primarily composed of an OTSC mounted onto an application cap, a hand wheel, and a thread retriever.

Figure 3 Two types of accessory devices. Twin Grasper: the grasping forceps is applied to easily approximate both edges of a large lesion. Anchor forceps: the tissue-anchoring device can better approximate indurated tissue.

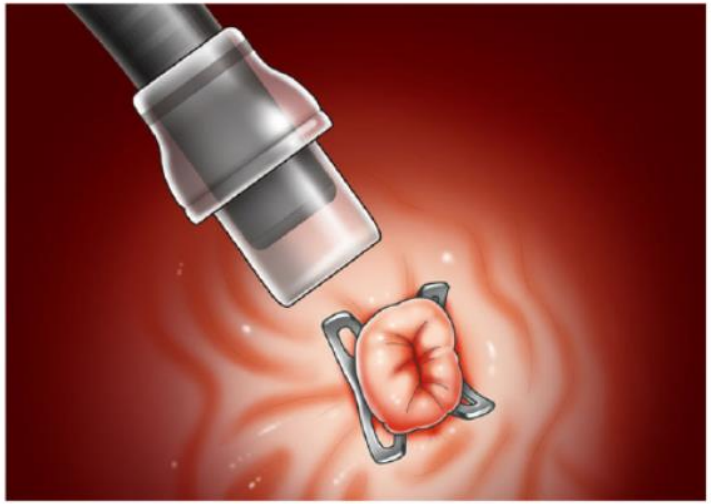


Figure 2 Simple mechanism of over-the-scope clip (OTSC) system. An OTSC mounted on the endoscope is fired by stretching the wire with the hand wheel, and the entire defect of the lesion is completely closed.

TC-325 hemostatic powder versus current standard of care in managing malignant GI bleeding: a pilot randomized clinical trial

Yen-I Chen, MD • Jonathan Wyse, MD • Yidan Lu, MD • Myriam Martel, MSc • Alan N. Barkun, MD, MSc

Published: August 19, 2019 • DOI: https://doi.org/10.1016/j.gie.2019.08.005 •

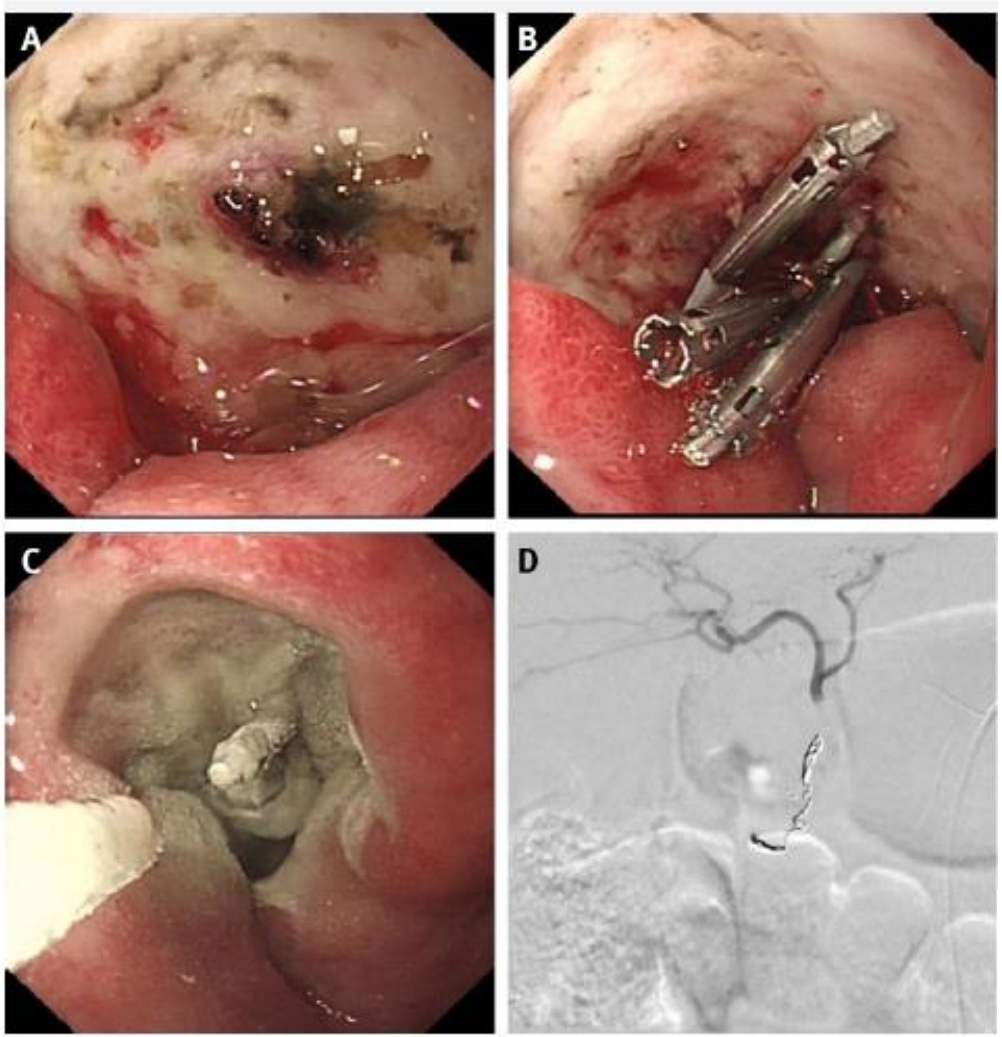


Fig 4| (A) Endoscopic view of a large posterior duodenal ulcer with intermittent bleeding from a visible vessel. The patient, a middle aged man taking anticoagulant drugs, was admitted with hematemesis, hemodynamic instability, and a hemoglobin concentration of 55 g/L. After resuscitation, transfusion to hemoglobin 70-80 g/L, and correction of coagulopathy, endoscopy was undertaken. (B) Through-the-scope clips were applied after dilute epinephrine was injected into the four quadrants of the ulcer base. The fibrotic base made application of the clips problematic. (C) There was ongoing intermittent oozing of blood. Given the high risk ulcer, hemostatic powder spray was then applied to good effect. High dose intravenous proton pump inhibitors (PPIs) were given and the patient was managed in the hospital high dependency unit. Because of the clinical situation and the difficulty in providing endoscopic therapy to this large fibrotic ulcer, the plan for urgent referral for radiological embolization—should early rebleeding occur—was clearly documented by the endoscopist as a "rebleeding plan." (D) Fifteen hours later the patient rebled and became hemodynamically unstable. He was again resuscitated appropriately, after which an interventional radiologist performed coil embolization of the gastroduodenal artery. The patient had no further bleeding and was restarted on anticoagulants on day 3. When he was discharged from hospital a week later he was still taking oral PPIs twice daily, but when the 14 day course was finished, the dose was reduced to once daily.

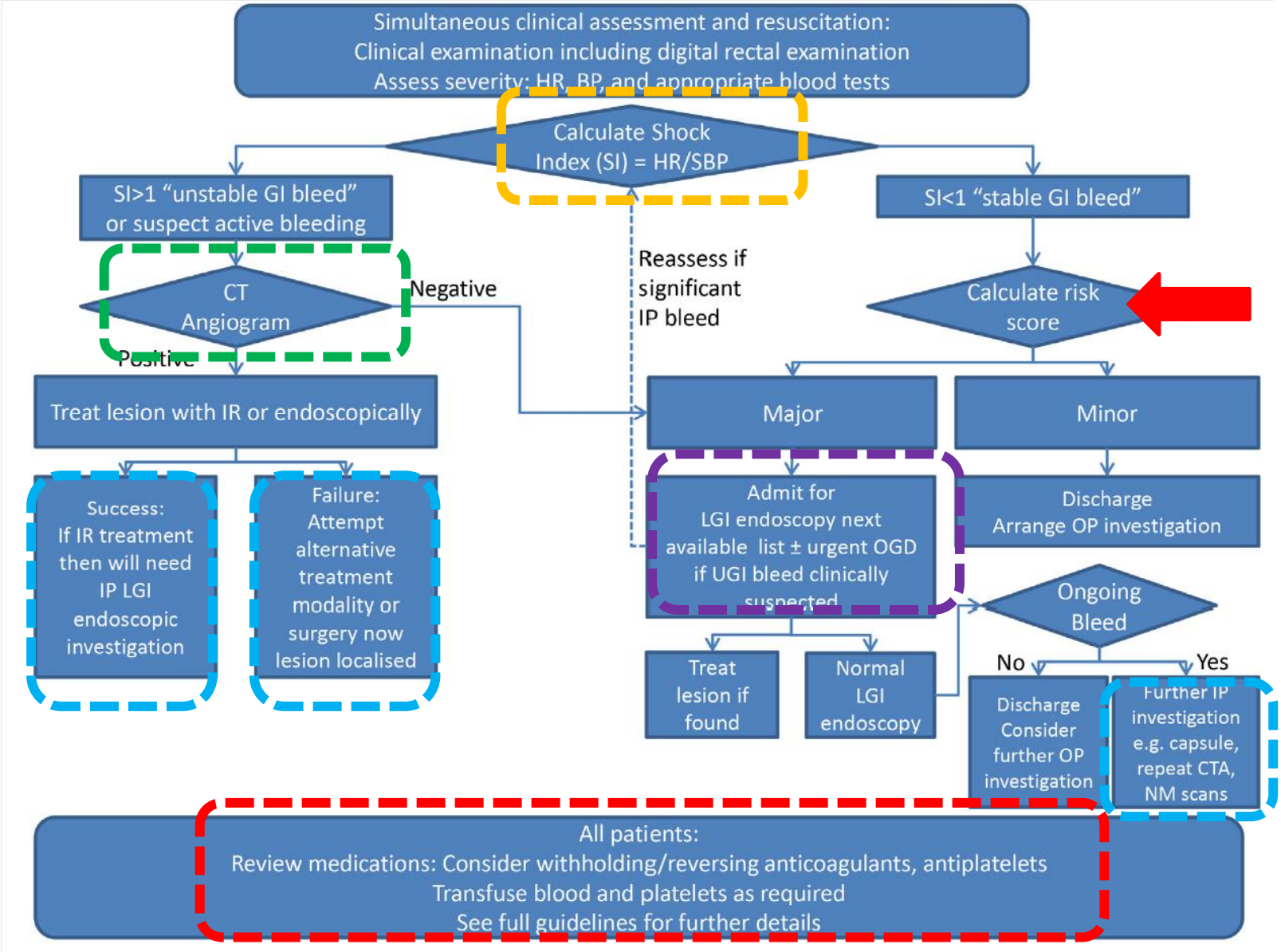
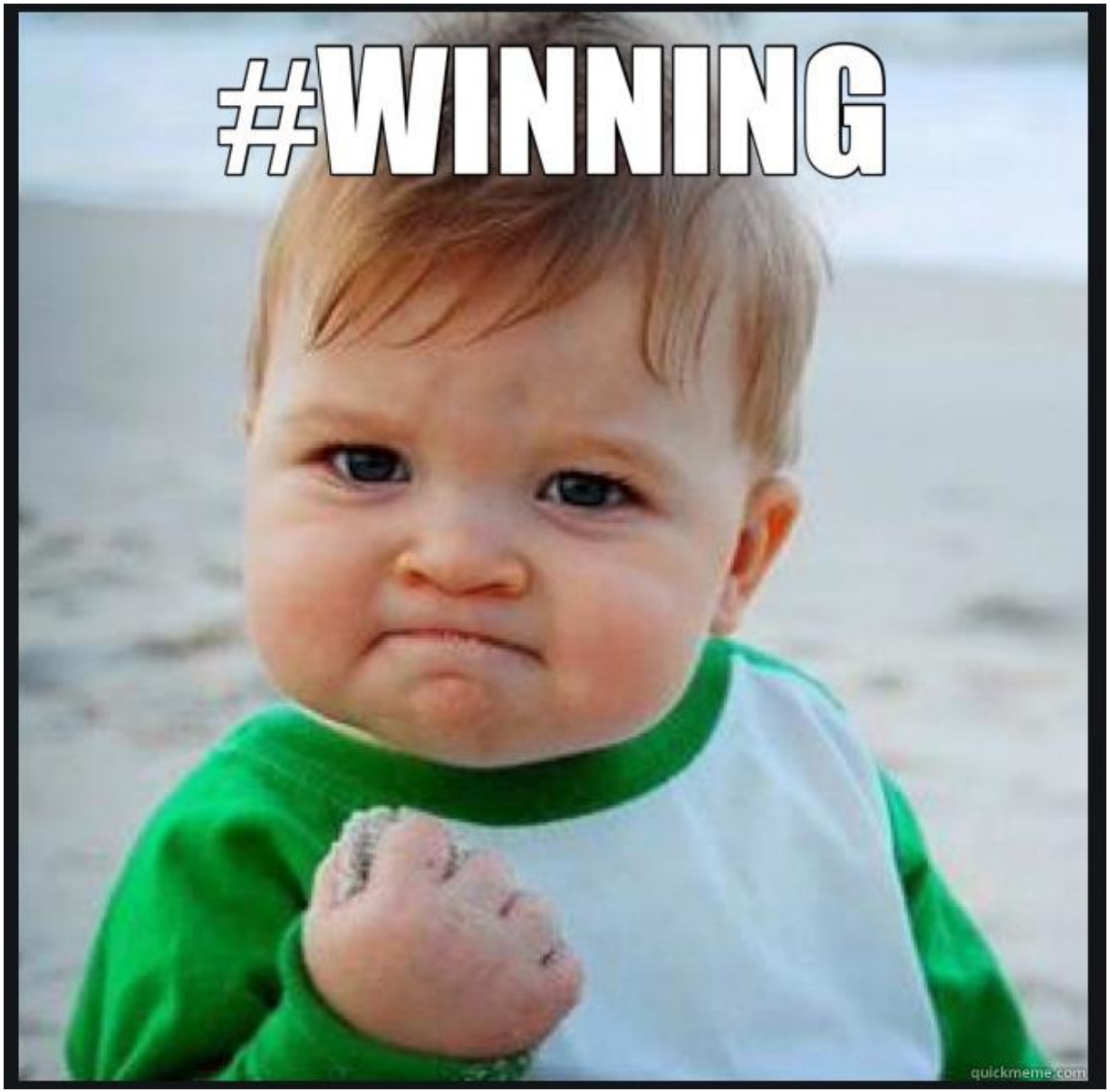


Figure 1 Management algorithm for patients presenting with acute lower gastrointestinal bleeding. Shock index (SI) is calculated by dividing the heart rate (HR) by the systolic blood pressure (SBP). IP, inpatient; IR, interventional radiology; OGD, oesophagogastroduodenoscopy; OP, outpatient; UGI, upper gastrointestinal.


#WINNING
quickmeme.com

New Zealand Society of Gastroenterology

First Name:	Gender:
Surname:	
Address:	[AFFIX PATIENT LABEL HERE]
Date of Birth:	NHI#:
Ward/Clinic:	Consultant:

☑ = yes ☒ = no

UPPER GASTROINTESTINAL BLEEDING (NON-VARICEAL) PATHWAY

TOP TIPS

- ⚠ **Resuscitation** is fundamental to patient outcomes before and after endoscopy
- ⚠ Base decisions on **blood transfusion** on the full clinical picture. Over-transfusion can be as harmful as under-transfusion
- ⚠ **Endoscopy** is the primary investigation. **Timing** (*urgent* – within 48h Vs *emergent* – ASAP) and **location** (Endoscopy Suite Vs Theatres) is worked out case by case.
- ⚠ Elderly and/or comorbid patients tend to poorly tolerate acute upper gastrointestinal bleeding, with a higher risk of death, compared to younger or fitter patients.
- ⚠ **Anti-coagulants and anti-platelets** are widely prescribed. Weigh up the risk to the patient of clotting (e.g. stroke/MI or DVT/PE) versus the risk of bleeding. In most acute UGI bleeds, reverse anticoagulation.

For the purposes of this pathway gastroenterologists are referred to as the primary physicians – in some centres general surgery or general medicine manage these patients.

Has the patient had an upper GI bleed? i.e. Haematemesis and/or malaena

*If suspected oesophageal varices (chronic liver disease AND haematemesis) use the **variceal bleed pathway***

☐ Yes → Continue ☐ No → Stop pathway

ALTERNATIVE DIAGNOSIS RISK – does the patient have a history of:

☐ Recent surgery *may be post-operative complications*
☐ Fresh PR bleeding *could be lower GI bleeding or massive upper GI bleed*
☐ Known AAA *may represent aortic oesophageal fistula and require urgent CT*

☐ No → Continue ☐ Yes → Stop pathway - Manage appropriately

Take history including:

☐ History of previous bleeds
☐ Potential causes of chronic liver disease inc. alcohol, Hep B+C, HCC, NAFLD *none may be identified*
☐ Past medical history, social history and functional status
☐ Medications inc. NSAIDS, steroids, antiplatelets, anticoagulants:

Document indication for and doses of anti-coagulants and anti-platelets *here + in notes*

INDICATION:

ANTI-COAGULANT: **ANTI-PLATELET:**

Examination including:

☐ Baseline observations *and minimum hourly thereafter*
☐ PR examination
☐ Stigmata of chronic liver disease (including decompensation ; asdtes/encephalopathy)

Investigations:

☐ FBC, urea, creatinine, electrolytes, LFTS, coagulation screen, cross match
☐ VBG + lactate
☐ ECG ☐ CXR if clinically indicated

Management:

☐ IV Access	**2x large bore IV access**
☐ Resuscitate	Give **0.9% saline OR Plasma-Lyte** *aim for SBP > 80-90mmHg* **RBC transfusion** *aim for Hb 90 if actively bleeding* **Massive blood loss** (shock +/- coagulopathy) use your local massive transfusion protocol
☐ Reverse	Consider reversing anti-coagulation *use local guidelines and document below + in notes* **PLAN:**
☐ Withhold	Anti-hypertensives | Anti-platelets | Anti-coagulation | NSAID | COX-2
☐ Prescribe	☐ If history of alcohol excess, use alcohol withdrawal pathway ☐ Omeprazole 40mg PO stat *give IV if active vomiting* ☐ If platelets <50 *discuss with on call haematologist*

Classification: ###### (Review: May 2018)

UPPER GASTROINTESTINAL BLEEDING (NON- VARICEAL) PATHWAY

UPPER GASTROINTESTINAL BLEEDING (NON-VARICEAL) PATHWAY

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First Name:	Gender:
Surname:	
Address:	[AFFIX PATIENT LABEL HERE]
Date of Birth:	NHI#:
Ward/Clinic:	Consultant:

☐ Consider iv prokinetic e.g. erythromycin

Calculate the Blatchford score. Is the score 0 and patient stable with no other concerns?

☐ No → Send referral to gastro for in-patient OGD

☐ Yes → Same day discharge
OP OGD referral if necessary

Is the Blatchford 1 or greater, patient is unstable and may need immediate, emergent OGD?

☐ No → Urgent inpatient OGD within 48h
☐ Send in-patient referral for OGD
Gastro registrar/SMO will arrange endoscopy
Continue individual care as needed

☐ Yes → Discuss with Gastroenterology reg OR SMO on call* regarding timing + location of OGD
☐ Send in-patient referral for OGD

Is OGD in theatre or endoscopy suite?

OGD in theatre:

☐ Call theatre co-ordinator*
☐ Call anaesthetic co-ordinator*
☐ book Acute Theatre
☐ Send IP referral form for OGD

OGD in endoscopy suite:

☐ Send in-patient referral for OGD
Gastro registrar/SMO will arrange endoscopy

☐ If ongoing bleeding, shock/coagulopathy, inform gastroenterology + ICU, consider the *massive transfusion protocol*

Post endoscopy care:

☐ Follow the OGD report *for guidance on repeat OGD and further management.*
– Low risk patients can be discharged the same day
– Higher risk patients generally need to stay in hospital for 72h
☐ Offer proton pump inhibitors to patients with stigmata of recent haemorrhage shown at endoscopy
☐ Continue aspirin for secondary prevention of vascular events when haemostasis has been achieved
☐ Stop NSAIDs including COX-2 inhibitors during the acute phase
☐ Terlipressin and ceftriaxone if variceal bleed *see variceal bleed pathway*
☐ Make a plan (weighing up risks + benefits) *if and when* to re-start anticoagulants or antiplatelents with specialist + patient
☐ If the patient re-bleeds, call gastro. Another inpatient OGD may be required.

Where to look after patients:

- **High risk** pre-endoscopy OR post-endoscopy - ICU, HDU, acute monitored care area (eg. admitting unit, medical decision unit)
- **Low risk** – Any medical/surgical ward
- **Admitted patients** *i.e. already on the ward and have a bleed* consider transfer to more appropriate monitored clinical area ICU, HDU or gastroenterology ward

***Contacts:**

- Gastroenterology registrar .....
- Gastroenterologist.....
- Anaesthetic co-ordinator.....
- Theatre co-ordinator.....
- Gastroenterology nurse co-ordinator.....

New Zealand Society of Gastroenterology

First Name:	Gender:
Surname:	
Address:	[AFFIX PATIENT LABEL HERE]
Date of Birth:	NHI#:
Ward/Clinic:	Consultant:

☑ = yes ☒ = no

UPPER GASTROINTESTINAL BLEEDING (VARICEAL) PATHWAY

TOP TIPS

⚠ **Careful resuscitation** is fundamental to patient outcomes before and after endoscopy

- Carefully transfuse with the full clinical picture. Over-transfusion can be as harmful as under-transfusion
- If variceal bleed suspected discuss **early with gastroenterology**
- **Antibiotics, terlipressin and emergent endoscopy** are key differences to non-variceal UGI bleeds
- **Endoscopy** is the primary investigation in patients with acute upper GI bleeding. **Timing** for variceal bleeds is often *emergent* and often done in theatre.
- Consider **ceiling of care and resuscitation status**. Is the patient a transplant candidate? Discuss and document
- Patients with cirrhosis and portal hypertension poorly tolerate acute upper gastrointestinal bleeding, with a **high risk of death**.
- **Anti-coagulants and anti-platelets** are widely prescribed. Whether to reverse, and how to reverse, depends on the risk to the patient of clotting (eg stroke/MI or DVT/PE) versus the risk of bleeding from the event. In most variceal UGI bleeds, anticoagulants require reversal

**Know your local guidelines for acute endoscopy services and arrange early transfer if necessary.*

Do you suspect a variceal bleed? *i.e. Known or suspected oesophageal varices or chronic liver disease AND GI bleed?*

☐ Yes → Continue

☐ No → Stop pathway
Use non-variceal UGIB pathway if needed

ALTERNATIVE DIAGNOSIS RISK – does the patient have a history of:

☐ Recent surgery *may be post-operative complications*
☐ Fresh PR bleeding *may represent lower GI bleeding or massive upper GI bleed*
☐ Known AAA *may represent aortic oesophageal fistula and require urgent CT*

☐ No → Continue

☐ Yes → Stop pathway manage appropriately

History including:

☐ Chronic liver disease inc. previous bleeds
☐ Causes of chronic liver disease inc. alcohol, Hep B *or* C, HCC, NAFLD *none may be identified*
☐ Medications inc. NSAIDS, steroids, antiplatelets, anticoagulation

Document indication for and doses of anti-coagulants and anti-platelets *here + in notes*

INDICATION:

ANTI-COAGULANT: **ANTI-PLATELET:**

Examination including:

☐ Baseline observations NZEWS *and minimum hourly thereafter*
☐ PR examination
☐ Stigmata of chronic liver disease
☐ Decompensation: *Ascites, encephalopathy (sleep/wake reversal → confusion → asterixis → coma)*

Investigations:

☐ FBC, Urea, Cr, Electrolytes, LFTS, Coag screen, Cross Match ☐ Lactate ☐ CXR and ECG

Management:

☐ IV Access	2x large bore IV access
☐ Resuscitate	☐ Give **0.9% saline OR Plasma-Lyte** *aim for SBP > 70-90mmHg.* ☐ **RBC transfusion** if Hb <70. *Aim for Hb 70-90 if actively bleeding* If severe shock/coagulopathy, inform ICU & consider ***massive transfusion protocol***
☐ Reverse	Consider reversing anti-coagulation **PLAN:**
☐ Withhold	Antihypertensives | Antiplatelets | Anticoagulation | NSAID | COX-2
☐ Prescribe	☐ Omeprazole 40mg PO stat *give IV if active vomiting* ☐ Cefuroxime 1.5g IV stat or ceftriaxone 1g IV stat ☐ Terlipressin 2mg IV stat - *relative contraindication in IHD. Use Octreotide instead.* ☐ Vitamin K 10mg IV stat ☐ If history of alcohol excess, use alcohol withdrawal pathway as per local policy ☐ **Platelets:** If < 50 discuss with on call haematologist

June 2019, Review June 2021. Adapted from BSG Guideline. Please email zoe.raos@waitematadhb.govt.nz with any feedback, or for a formattable version. This is a guideline and does not replace careful clinical decision making.

UPPER GASTROINTESTINAL BLEEDING (VARICEAL) PATHWAY

Waitemata District Health Board
Best Care for Everyone

First Name:	Gender:
Surname:	
Address:	[AFFIX PATIENT LABEL HERE]
Date of Birth:	NHI#:
Ward/Clinic:	Consultant:

☐ **Discuss with Gastroenterology registrar* or SMO* regarding time + location of OGD**

Is the patient for OGD during admission?

☐ Yes → Continue

☐ No → Stop pathway manage appropriately

Is the decision for immediate OGD to treat possible varices?

☐ Yes → Continue

☐ No →

Is OGD in theatre or endoscopy suite?

☐ Send referral for OGD
Gastro registrar/SMO will arrange endoscopy
Continue individual care as needed

OGD in theatre:

☐ Call theatre co-ordinator*
☐ Call anaesthetic co-ordinator*
☐ Acute Theatre booking form via Concerto>'temple'>theatres>acute booking
☐ Send e-referral for OGD

OGD in endoscopy suite:

☐ Send referral for OGD
Gastro registrar/SMO will arrange endoscopy

If ongoing bleeding, shock/coagulopathy, inform gastroenterology + ICU, consider the *massive transfusion protocol as per local policy*

Post endoscopy care:

☐ Read the OGD report. It is the responsibility of the ward team to arrange **inpatient treatment and outpatient follow up** for inpatient endoscopy. For example, patient may require 2- weekly banding
☐ Continue aspirin for secondary vascular prevention when haemostasis has been achieved
☐ Make a plan (weighing up risks + benefits) *if and when* to **re-start anticoagulants or antiplatelets** with specialist + patient
☐ 48-72 hours of **Terlipressin** 1-2mg 6hourly *if varices confirmed*
☐ **Ceftriaxone** 1g daily *if varices treated*
☐ **4% Albumin** *for maintenance fluid in known/suspected cirrhosis*
☐ Investigate/ treat **contributing factors** - sepsis, SBP, encephalopathy, alcohol withdrawal, nutrition
☐ **If the patient re-bleeds, call gastro**. Patient will need carefully planned care which might include:
  - **Endoscopy** – e.g. OGD for repeat banding, sclerotherapy, stent or coiling
  - **Interventional radiology** – e.g. TIPSS arranged through Gastroenterology/ NZLTU at ADHB

Where to look after patient post endoscopy:

- **Acute patients** to ICU, HDU, acute medical ward-monitored or gastroenterology ward + arrange **daily gastroenterology input**
- **Admitted patients** *i.e. already on the ward* transfer to ICU, HDU or gastroenterology ward

***Contacts:**

Gastroenterology registrar .....
Gastroenterology SMO .....
Anaesthetic co-ordinator .....
Theatre co-ordinator .....
Gastroenterology nurse co-ordinator .....

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DAMN, I'M GONE TWO WEEKS,
AND EVERYTHING GOES PEAR-SHAPED, HUH?
memegenerator.net

Intraoperative Enteroscopy:

- last resort, consider if adhesions prevent DAE.
- VCE important directive role: 18 patients with small bowel bleeding 15/18 + VCE – 13 patients succesfully treated with intraoperative enteroscopy
- 3 patients with negative VCE: normal intraoperative IE
- AE: serosal tear, avulsion of mesenteric vessels, prolonged ileus

Douard et al AmjSurg 2009 (cited)