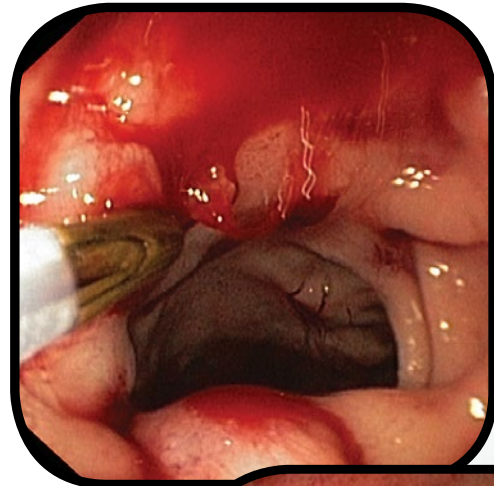


4th Annual Westmead Endoscopy Symposium CONFERENCE PROGRAM AND SYLLABUS


Thursday 3rd & Friday 4th March, 2011
Hilton Sydney Hotel, Australia

Topics include:

- Enhanced endoscopic imaging
- Colonoscopy
 - Core technique
 - Optimising adenoma detection
 - Basic and complex polypectomy
 - Advanced resection techniques
- Barrett's Oesophagus
 - Detection of inconspicuous neoplasia and dysplasia
 - Total mucosectomy
 - Radio-frequency ablation
- Endoscopic palliation of malignancy
- Diagnostic and interventional endoscopic ultrasound
- ERCP: complex and basic therapeutics
- Direct per oral cholangioscopy
- Pseudocyst drainage and endoscopic necrosectomy
- Balloon and capsule enteroscopy

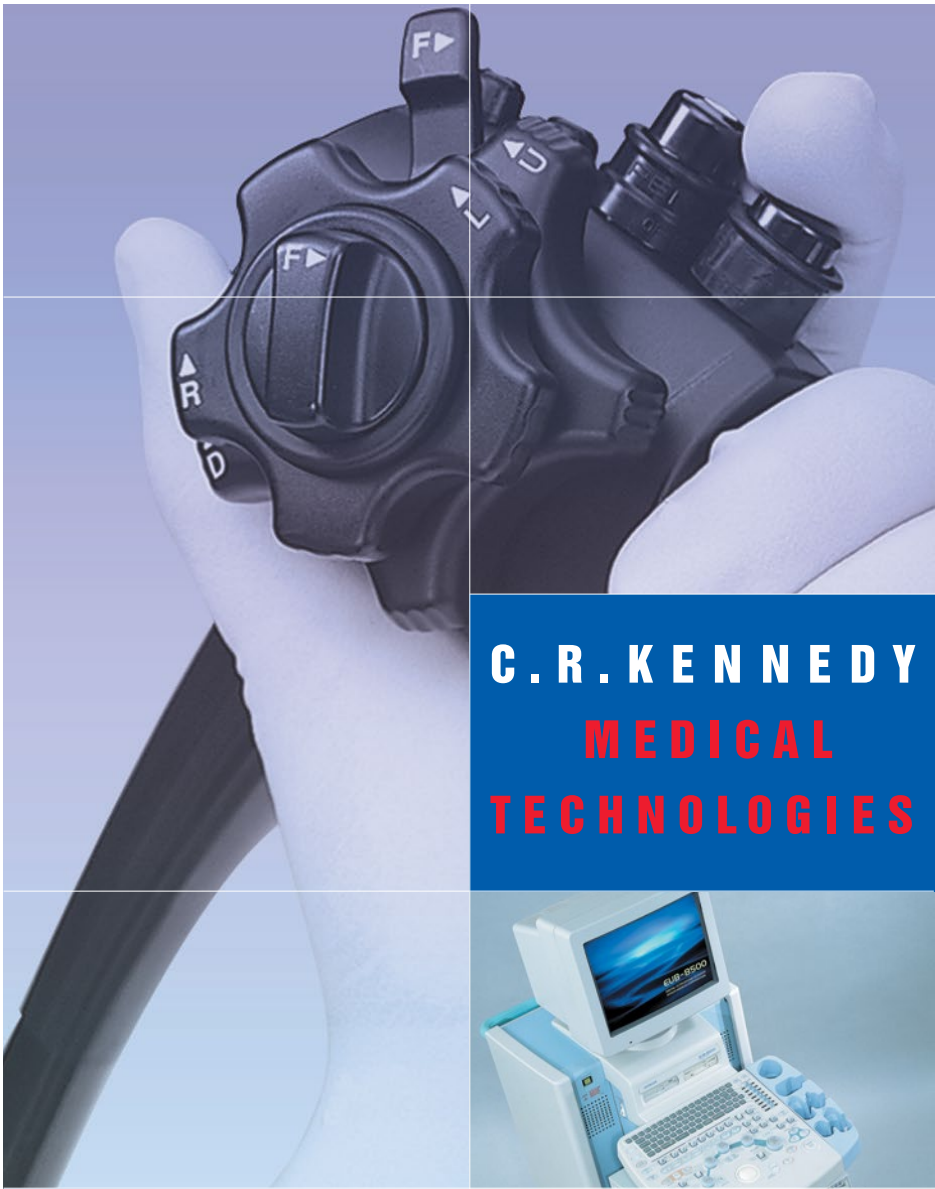


International Faculty

-  Alan Barkun - Canada
-  Jacques Bergman - Netherlands
-  Ralf Kiesslich - Germany
-  Naohisa Yahagi - Japan

Australian Faculty

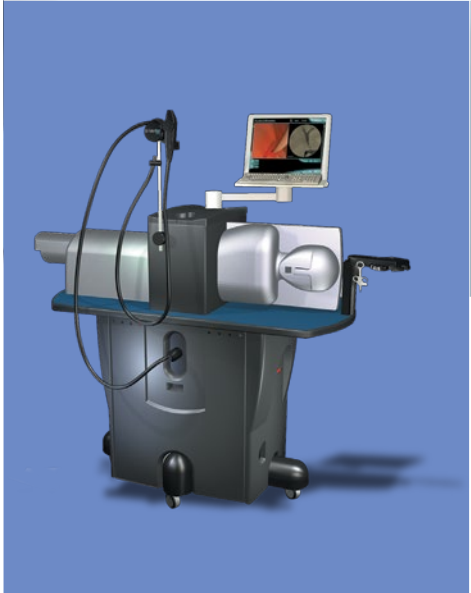
- Luke Hourigan
- Bradley Kendall
- Raj Singh



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Welcome!

Dear Colleagues, Ladies and Gentlemen

It is my great pleasure to welcome you to the 4th Annual Westmead Endoscopy Symposium. This year sees a significant step in the evolution of the meeting with the transfer of the official conference venue to the Hilton Hotel in the City. Once again we have set ourselves the goal of a comprehensive demonstration of diagnostic and therapeutic endoscopy.

We are delighted to welcome four truly outstanding clinicians from abroad as our expert faculty. Jacques Bergman from Amsterdam is one of the world's most influential authorities in Barrett's oesophagus and oesophageal adenocarcinoma, the most rapidly increasing incident neoplasm in developed countries. From Montreal, Alan Barkun has been a driving force in the understanding and current logic in the stratification of risk and therapy for acute gastrointestinal haemorrhage. His insights are eagerly awaited. Ralf Kiesslich from Germany continues his innovative research in enhanced endoscopic imaging, an ever more important aspect of routine endoscopic practice. How should these tools be incorporated and utilised? Naohisa Yahagi has been a true pioneer in the development of endoscopic resection techniques for the treatment of mucosal neoplasia and early cancer throughout the GI tract. This area has seen some of the most exciting therapeutic advances in gastroenterology in the last decade.

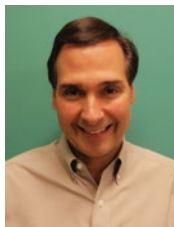
The symposium's content has been carefully designed to facilitate discussion around critical aspects of technique and points of controversy. A strong focus on the cognitive processes behind the delivery of high quality endoscopy will feature.

Finally, on behalf of our Department, Nurses and Doctors alike, I thank you for your support and interest and for taking the time from your busy schedules to join us here for these two special days. I believe the international guests, in combination with our Australian faculty and the team from Westmead, will provide an enlightening and informative educational experience for you, and hopefully a very enjoyable one.

Michael Bourke

Chairman Westmead Endoscopy Symposium 2011
Director Gastrointestinal Endoscopy, Westmead Hospital, Sydney.

The attendance of the international faculty has been graciously supported by our Platinum Sponsors



ALAN BARKUN is Professor and Quality Assurance Officer of the Division of Gastroenterology at McGill University and McGill University Health Centre, Montréal, Canada. He is the recipient of many career awards including an ASGE Research Scholar Award, the Canadian Association of Gastroenterology Visiting Professor Award, and the André Viallet Award of the Association des Gastro-Entérologues du Québec. He has received numerous peer-reviewed grants from the Canadian Institutes of Health Research, the FRSQ, the American College of Gastroenterology, the ASGE and the ADHF. Professor Barkun has published over 400 peer-reviewed articles and abstracts, and has given numerous, national and international presentations for professional societies. He has been a member of numerous editorial boards. His research interests include the assessment of emerging digestive endoscopic technologies, with an emphasis on methodological, clinical and cost-effectiveness trials of treatments for upper gastrointestinal bleeding, bilio-pancreatic diseases and colorectal cancer screening.



JACQUES BERGMAN, MD PhD is an interventional endoscopist and Director of Endoscopy at the Academic Medical Centre in Amsterdam. He is Associate Professor of Gastrointestinal endoscopy and Head of the Esophageal Research Team. His research focuses on the endoscopic detection and treatment of early neoplasia in the upper GI tract and his research group coordinates several international multicenter studies in this field. He is Co-Editor in Chief of *Endoscopy* and is the author of numerous high impact peer reviewed research publications.



RALF KIESSLICH is Head of the Endoscopic Unit at the First Department of Medicine of the Johannes Gutenberg University (JGU) in Mainz, Germany.

He gained the Board Certification of Internal Medicine 2003 and the Board Certification of Gastroenterology in 2004. The thesis of his PhD (2004) at the JGU was about recognition of early cancers with chromo and confocal laser endoscopy.

His main research interests are new imaging modalities (e.g. endomicroscopy) and new treatment options in GI Endoscopy. Ralf Kiesslich was promoted in 2007 receiving his personal chair and full professorship. The professorship for GI Endoscopy at JGU was founded by Pentax Europe in 2006. Ralf Kiesslich leads the Section "Imaging and Advanced Technology" of the high ranking journal *Gastroenterology* since 2009. He is or was also member of the editorial boards of *GUT*, *Endoscopy* and *Digestive Diseases*.

Ralf Kiesslich published extensively in high ranking journals and he received several prizes like the Don Wilson Award (American Society of Gastrointestinal Endoscopy) and the Martin Guelzow Award (German Society of Gastroenterology).



NAOHISA YAHAGI is Professor of Medicine and Director, Division of Research and Development for Minimally Invasive Treatment, Cancer Center, Keio University, Tokyo, Japan. Dr Yahagi is the former Director, Gastroenterology and Endoscopy at Toranomon Hospital. His main interest is therapeutic endoscopy especially for endoscopic resection of GI neoplasia. He developed the basic technique of Endoscopic Submucosal Dissection and invented many accessories including Flex knife, Dual knife, Hybrid knife as well as Endo Lifter. He is also working as the chairman of Research Committee of the World Endoscopy Organization.



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Welcome to Nurses

A very warm welcome to the Westmead Endoscopy Symposium Nurses Workshop at the Hilton Sydney Hotel.

We are offering another fabulous array of talks and video demonstrations that will inform and enhance your understanding in the ever expanding realm of gastrointestinal endoscopy.

Thank you for joining us here today for this fabulous meeting to enjoy the educational experience but also for the interaction with your colleagues in the field.

For those of you who will also be attending the full two day live workshop telecast from Westmead Hospital to the Hilton - this will be an enlightening experience! RCNA points will also be available for nurses attending the Symposium.

Welcome,
Mary Bong
Nurse Unit Manager
Endoscopy Unit, Westmead Hospital
Organising Committee Westmead Endoscopy Symposium 2011

Nurses Workshop - Wednesday 2nd March 2011	
0800	Registration Opens - Level 4 Function Rooms
0830 - 0835	<i>Welcome Note</i> by Mary Bong, Nurse Unit Manager, Endoscopy Unit, Westmead Hospital. Organising Committee Westmead Endoscopy Symposium 2011
	SECTION 1 Moderators: Dr Vu Kwan and Robyn Brown
0835 - 0905	<i>Gastroenterology nursing around the globe.</i> Presenter: Di Jones, Nurse Unit Manager, Logan Hospital
0905 - 0935	<i>EUS from simple to the complex: Imaging and interventional.</i> Presenter: Dr Vu Kwan
0935 - 1005	<i>Endoscopic management of foreign body.</i> Presenter: Sylvia Lahey, Rijnstate Hospital, Endoscopy Unit, Wageningen, The Netherlands (<i>Sponsored by Device Technologies</i>) 
1005 - 1035	<i>Quality in endoscopy: The UK experience.</i> Libby Shepherd (nee Thompson), Clinical Nurse Consultant, Queensland Bowel Screening Program
1035 - 1105	Morning Tea and Trade Display
	SECTION 2 Moderators: Dr Vu Kwan and Judy Tighe-Foster
1105 - 1125	<i>GI bleeding: Be prepared</i> Presenters: Sandra Ko and Mary Bong
1125 - 1145	<i>ERCP: The secrets and tricks</i> Presenters: Helna Lindhout and Judy Tighe Foster
1145 - 1205	<i>Polypectomy: Small to giant</i> Presenters: Rachel Perram and Rebecca Sonson
1205 - 1220	<i>Troubleshooting reprocessing</i> Presenters: Ewa Kasprzak and Robyn Brown
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Westmead Symposium 2011 - Nurses Workshop</p> <p>This workshop is endorsed by APEC number 014011002 as authorised by Royal College of Nursing, Australia (RCNA) according to approved criteria. Attendance attracts 4 RCNA CNE points as part of RCNA's Life Long Learning Program (3LP).</p> <p>"Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favouring by RCNA"</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>The attendance of Di Jones and Libby Shepherd has been graciously supported by CR Kennedy</p> </div> <div style="text-align: center;">  <p>Di Jones</p> </div> <div style="text-align: center;">  <p>Libby Shepherd (nee Thompson)</p> </div> </div> </div> <div style="width: 50%; padding-left: 20px;"> <p>SECTION 3 Demonstrations</p> </div> </div>
1220 - 1315	4 Demonstration tables, 10 minutes at each table
1315 - 1415	Lunch and Trade Display
	SECTION 4 Moderators: Dr Viraj Kariyawasam and Mary Bong
1415 - 1445	Quiz
1445 - 1515	<i>Keeping the patient still and safe: The physiology of endoscopy sedation.</i> Dr Viraj Kariyawasam
1515 - 1530	Quiz prizes presentation
1530 - 1535	Closing remarks and thank you
1535 - 1600	Afternoon Tea and Trade Display

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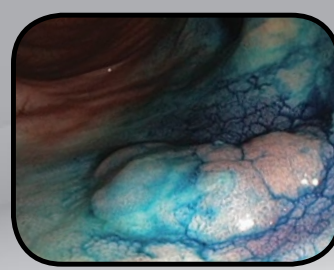
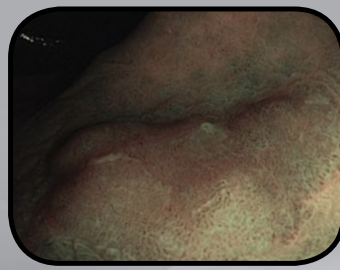
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Symposium Program

Day One - Thursday 3rd March 2011

0730	<i>Registration Opens</i> Venue: Level 3 Function Rooms
0830 - 0835	Official Conference Open and Welcome. Dr Michael Bourke, Director of Gastrointestinal Endoscopy, Chairman Organising Committee, Westmead Endoscopy Symposium 2011
0835 - 0900	Colonoscopy withdrawal: Optimising adenoma detection and characterisation. Prof Ralf Kiesslich
0900 - 1030	<i>Live Endoscopy 1</i> - Chairs: Tony Speer, Gregor Brown, Vu Kwan
1030 - 1100	<i>Morning Tea</i> - Venue: Trade area
1100 - 1115	Pseudocysts: An update for everyone. Dr Vu Kwan
1115 - 1300	<i>Live Endoscopy 2</i> - Chairs: Arthur Kaffes, Ian Norton, David Ruppin
1300 - 1400	<i>Lunch</i> - Venue: Trade area
1400 - 1530	<i>Live Endoscopy 3</i> - Chairs: Brian Jones, Michael Swan, Richard Hope
1530 - 1600	<i>Afternoon Tea</i> - Venue: Trade area
1600 - 1630	Non variceal upper GI bleeding in 2011: Should I be following the Consensus Guidelines? Prof Alan Barkun
1630 - 1700	<i>General Endoscopy Quiz</i> - Dr Roslyn Vongsuvan
1700 - 1800	Experts on the spot. By pre-registration either: (A) Case discussions on upper GI bleeding. Presenter: Brad Kendall, Discussant: Prof Alan Barkun (B) Case discussions on Barrett's dysplasia. Presenter: Luke Hourigan, Discussant: Prof Jacques Bergman
1830	<i>Board coaches to depart for the Malaya Restaurant*</i>
1900	Conference Dinner (by pre-registration only - see below) Tickets may still be available, please see the registration desk

OFFICIAL SYMPOSIUM DINNER



The Malaya Restaurant, 93 Lime Street, King Street Wharf

*Coaches will depart the Hilton Sydney Hotel from 6.30pm onwards (one-way transfer), alternatively, you can make your own way to the restaurant, allow approximately 20 minutes from the Hilton Sydney Hotel.





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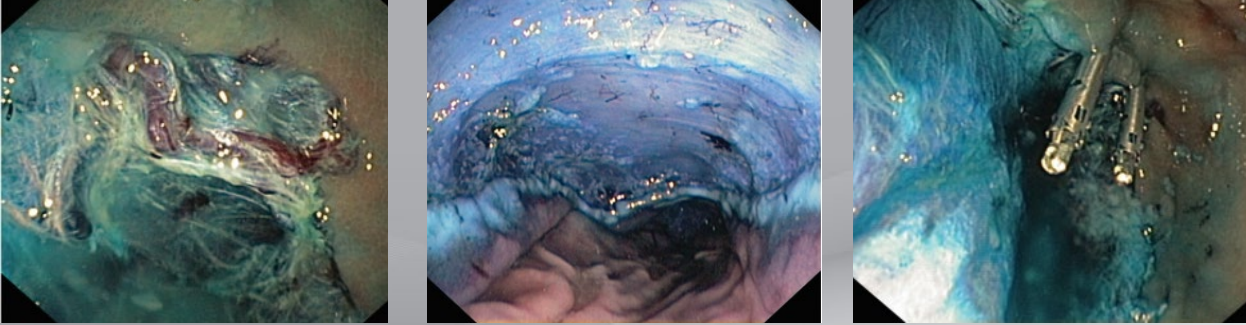
§Heartburn and regurgitation symptoms associated with gastro-oesophageal reflux disease.¹

Please review Product Information before prescribing. Full Product Information is available on request from AstraZeneca.

Nexium[®] (esomeprazole magnesium trihydrate). Indications and dosage. Adults and Children ≥ 12 years: Treatment of erosive reflux oesophagitis: 40 mg once daily for 4 or 8 weeks. Long-term management of patients with healed oesophagitis to prevent relapse: 20 mg once daily. Symptomatic treatment of gastro-oesophageal reflux disease (GORD) in patients without oesophagitis: 20 mg once daily for 4 weeks. Other indications/dosage in adults: Patients requiring NSAID therapy: Prevention of gastric and duodenal ulcers associated with NSAID therapy: 20 mg once daily. Short-term treatment of upper GI symptoms associated with NSAID therapy: 20 mg once daily. Healing of gastric ulcers associated with NSAID therapy: 20 mg once daily for 4 to 8 weeks. Prevention of rebleeding of gastric or duodenal ulcers following treatment with Nexium IV solution by intravenous infusion: 40 mg orally once daily, duration determined by physician. Healing of duodenal ulcer associated with *H. pylori* or eradication of *H. pylori* with active or healed peptic ulceration: Nexium 20 mg used in combination with 1000 mg amoxicillin and 500 mg clarithromycin, twice daily for 7 days. Pathological hypersecretory conditions including Zollinger-Ellison syndrome and idiopathic hypersecretion: 40 mg twice daily initially and may be increased. Children 1-11 years: Treatment of erosive reflux oesophagitis: weight < 20 kg: 10 mg once daily for 8 weeks; weight ≥ 20 kg, 10 mg or 20 mg once daily for 8 weeks. Long-term management of patients with healed oesophagitis to prevent relapse: 10 mg once daily. Symptomatic treatment of gastro-oesophageal reflux disease (GORD): 10 mg once daily for up to 8 weeks. Contraindications: Hypersensitivity to esomeprazole, substituted benzimidazoles or other constituents of Nexium; concomitant administration with atazanavir or clobazepam. Precautions: Increased GI infections, hepatic insufficiency; renal impairment; pregnancy; lactation; interactions with other medicines; exclude malignancy. Interactions: Clarithromycin, *rifampicin, *St John's wort, cisapride, cimetidine, citalopram, clomipramine, imipramine, diazepam, phenytoin, warfarin, antiretroviral drugs (contraindicated with atazanavir; not recommended with nelfinavir); *drugs with pH dependent absorption, *digoxin; *laboratory test: CgA increase; others see full PI. Adverse Reactions (common): GI upset, headache. For less common adverse reactions see full PI. Presentations: Tablets: 20 mg and 40 mg; Unit dose sachets containing 10 mg granules for oral suspension. Date of TGA approval: 22 December 2010. PBS dispensed price: 40 mg (30) \$48.95; 20 mg (30) \$32.11. Reference. 1. Nexium Approved Product Information 22 December 2010. AstraZeneca Pty Ltd. ABN 54 009 682 311. Alma Road, North Ryde NSW 2113. Trademarks herein are the property of the AstraZeneca Group. 02/11 AU-NEX000104c AST2547/UC AZAE0312

*Please note changes in Product Information.

PBS Information: Nexium 40 mg. Restricted benefit. Healing of gastro-oesophageal reflux disease. Authority required for pathological hypersecretory conditions including Zollinger-Ellison syndrome and idiopathic hypersecretion. Nexium 20 mg. Restricted benefit. Maintenance of healed gastro-oesophageal reflux disease; initial treatment of gastric ulcer; scleroderma oesophagus; pathological hypersecretory conditions including Zollinger-Ellison syndrome and idiopathic hypersecretion.



Symposium Program

Day Two - Friday 4th March 2011	
0800	<i>Registration Opens</i> Venue: Level 3 Function Rooms
0830 - 0900	<i>Barrett's dysplasia: Finding it, not missing it and how to manage it.</i> Prof Jacques Bergman
0900 - 1030	<i>Live Endoscopy 4</i> - Chairs: William Tam, Nghi Phung, Steve Williams
1030 - 1100	<i>Morning Tea - Venue: Trade area</i>
1100 - 1230	<i>Live Endoscopy 5</i> - Chairs: Tony Speer, Dev Samarasinghe, Rita Lin
1230 - 1300	<i>The principles of endoscopic lesion detection and characterisation: Becoming Japanese.</i> Prof Naohisa Yahagi
1300 - 1400	<i>Lunch - Venue: Trade area</i>
1400 - 1530	<i>Live Endoscopy 6</i> - Chairs: Phil Craig, Gregor Brown, David Van der Poorten
1530 - 1600	<i>Afternoon Tea - Venue: Trade area</i>
1600 - 1630	<i>The Peter Gillespie Lecture - The places we will go: Endoscopy 2020.</i> Prof Alan Barkun
1630 - 1645	<i>Quiz answers and awards for winners</i> - Dr Roslyn Vongsuvan
1645 - 1700	<i>Symposium Close, meeting adjourned</i> Dr Michael Bourke

Mark your diary NOW,
next year's Symposium dates!
Wednesday 7th - Friday 9th March, 2012

S	M	T	W	T	F	S
		29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SELECTED COURSE NOTES

What is New in Managing Patients with Non-Variceal Upper GI Bleeding?

Alan N. Barkun, MD, AGAF, Director, Department of Medicine, Division of Gastroenterology, McGill University Health Centre, Montréal, Québec, Canada

Word count: 565

The management of patients with non-variceal upper gastrointestinal bleeding has evolved significantly since publication of authoritative guidelines in 2003, leading to a 2010 update using state-of-the-art guideline development methodology.¹ The recommendations span five general areas, including resuscitation; risk assessment and pre-endoscopic care; endoscopic management; pharmaco-therapy; non-endoscopic, non-pharmacological in-hospital aspects of therapy; and secondary prophylaxis. I discuss with you briefly some that have impacted my practice the most.

We have again emphasized the importance of using a prognostic scale for early patient stratification, either the Blatchford (pre-endoscopy) or total Rockall scores (after endoscopy), that identify

PPI prophylaxis by far outweighs any cardiovascular risk attributable to a disputable PPI-clopidogrel interaction that is at best weak.

both patients for early discharge² and those at higher risk requiring closer care. It has become my routine practice to administer intravenous erythromycin in patients likely to have fresh blood or clots at the time of endoscopy to empty out the stomach, thus

avoiding repeat endoscopies.¹ Perhaps one of the most contentious issues is the role of pre-endoscopic proton pump inhibition (PPI) — an approach that does not improve outcomes, but downstages high-risk endoscopic lesions and so may be considered in selected patients likely to exhibit such lesions or in whom an endoscopy may be delayed; this therapy should not replace risk assessment and resuscitation.³ In patients on anticoagulants, correction of coagulopathy is recommended, but it should not delay endoscopy, and I now proceed with an international normalized ratio up to 2.5, as a rule.¹ Early endoscopy (within 24 hours of presentation, with little evidence for routine earlier look) remains a critical component of appropriate management, with new data suggesting improvements in outcomes, including rebleeding, surgery, transfusion requirements and perhaps even mortality.⁴ If a high-risk

endoscopic stigma is noted, although better than doing nothing, epinephrine injection alone provides suboptimal efficacy and should be used in combination with another modality such as clips, thermal or sclerosant injection, which are also efficacious alone.⁵ My choice of therapy is dictated by the appearance of the lesion and its accessibility, and you should of course use a technique that you are comfortable with. As for the management of an adherent clot, following an attempt at dislodgment, data support both high-dose intravenous PPI infusion alone (80 mg bolus and 8 mg/hour for three days) or following endoscopic hemostasis.¹ The latter combination remains the approach of choice for all other patients with high-risk stigmata. Unfortunately, I find many such patients are not given the full 72-hour length of infusion despite an increased risk of rebleeding and the lack of high-quality generalizable data supporting other intravenous or oral PPI dosages.¹

A second look is recommended only selectively amongst patients having undergone endoscopic hemostasis,¹ but a negative test of *Helicobacter pylori* requires routine confirmation owing to a high false negative rate in the acute setting.¹ New data have allowed us to better weigh risks and benefits in patients on antithrombotics,⁶ and following consultation with treating physicians, I now restart acetylsalicylic acid (ASA) acutely, as early as within five days of an acute bleed in most patients requiring it as secondary prophylaxis.

Long-term PPI co-therapy is imperative in patients having bled on NSAIDs (preferably with a COX-2, if appropriate for the patient) or ASA.⁷ As for those having bled on clopidogrel, my interpretation of the literature is that PPI prophylaxis by far outweighs any cardiovascular risk attributable to a disputable PPI-clopidogrel interaction that is at best weak.⁸ Further work is now needed to better implement and disseminate these new international recommendations.

References:

1. Barkun AN, Bardou M, Kuipers EJ, et al. International consensus recommendations on the management of patients with nonvariceal upper gastrointestinal bleeding. *Ann Intern Med* Jan 19 2010;152(2):101-113.
2. Stanley AJ, Ashley D, Dalton HR, et al. Outpatient management of patients with low-risk upper-gastrointestinal haemorrhage: multicentre validation and prospective evaluation. *Lancet* Jan 3 2009;373(9657):42-47.
3. Barkun AN. Should every patient with suspected upper GI bleeding receive a proton pump inhibitor while awaiting endoscopy? *Gastrointest Endosc* Jun 2008;67(7):1064-1066.

4. Hearnshaw SA, Logan RF, Lowe D, Travis SP, Murphy MF, Palmer KR. Use of endoscopy for management of acute upper gastrointestinal bleeding in the UK: results of a nationwide audit. *Gut* Mar 31 2010.
5. Laine L, McQuaid KR. Endoscopic therapy for bleeding ulcers: an evidence-based approach based on meta-analyses of randomized controlled trials. *Clin Gastroenterol Hepatol* Jan 2009;7(1):33-47; quiz 31-32.
6. Sung JJ, Lau JY, Ching JY, et al. Continuation of low-dose aspirin therapy in peptic ulcer bleeding: a randomized trial. *Ann Intern Med* Jan 5 2010;152(1):1-9.
7. Rostom A, Moayyedi P, Hunt R. Canadian consensus guidelines on long-term nonsteroidal anti-inflammatory drug therapy and the need for gastroprotection: benefits versus risks. *Aliment Pharmacol Ther* Mar 1 2009;29(5):481-496.
8. Kwok CS, Loke YK. Meta-analysis: the effects of proton pump inhibitors on cardiovascular events and mortality in patients receiving clopidogrel. *Aliment Pharmacol Ther* Apr 2010;31(8):810-823.

NVUGIB CCC Summary

A: Resuscitation, risk assessment & pre-endoscopy management

- A1: Immediately evaluate and initiate appropriate resuscitation*
- A2: Prognostic scales are recommended for early stratification of patients into low-and high-risk categories for rebleeding and mortality†
- A3: Consider placement of a naso-gastric tube in selected patients because the findings may have prognostic value*
- A4: Blood transfusions should be administered to a patient with a hemoglobin level ≤ 70 g/L
- A5: In patients on anticoagulants, correction of coagulopathy is recommended but should not delay endoscopy
- A6: Proton pump inhibitors should not be used routinely before endoscopy to increase the diagnostic yield
- A7: Selected patients with acute ulcer bleeding at low risk for rebleeding based on clinical and endoscopic criteria may be discharged promptly after endoscopy†
- A8: Pre-endoscopic, PPI therapy may be considered to downstage the endoscopic lesion and decrease the need for endoscopic intervention, but should not delay endoscopy†

B: Endoscopic Management

- B1: Develop institution-specific protocols for multidisciplinary management*
 - Include access to an endoscopist trained in endoscopic hemostasis*
- B2: Have available on an urgent basis, support staff trained to assist in endoscopy*
- B3: Early endoscopy (within 24 hours of presentation) is recommended in most patients with acute upper gastrointestinal bleeding†
- B4: Endoscopic hemostatic therapy is not indicated for patients with low-risk stigmata (a clean based ulcer, or a non-protuberant pigmented dot in an ulcer bed)*
- B5: A finding of a clot in an ulcer bed warrants targeted irrigation in an attempt at dislodgement, with an appropriate treatment of the underlying lesion†
- B6: The role of endoscopic therapy for ulcers with adherent clots is controversial. Endoscopic therapy may be considered, although intensive PPI therapy alone may be sufficient†
- B7: Endoscopic hemostatic therapy is indicated for patients with high-risk stigmata (active bleeding or a visible vessel in an ulcer bed)*
- B8: Epinephrine alone provides suboptimal efficacy and should be used in combination with another modality†
- B9: No single method of endoscopic thermal coaptive therapy is superior to another*
- B10: Clips, thermal or sclerosant injection should be used in patients with high risk lesions, alone or in combination with epinephrine injection†
- B11: Routine second-look endoscopy is not recommended†
- B12: A second attempt at endoscopic Rx is generally recommended in cases of re-bleeding*

C: Pharmacological Management

- C1: Histamine₂-receptor antagonists are not recommended for patients with acute ulcer bleeding*
- C2: Somatostatin and octreotide are not routinely recommended for patients with acute ulcer bleeding*

SELECTED COURSE NOTES

- C3: An intravenous bolus followed by continuous-infusion proton-pump inhibitor should be used to decrease rebleeding and mortality in patients with high risk stigmata having undergone successful endoscopic therapy†
- C4: Patients should be discharged on a single daily dose oral PPI for a duration as dictated by the underlying etiology

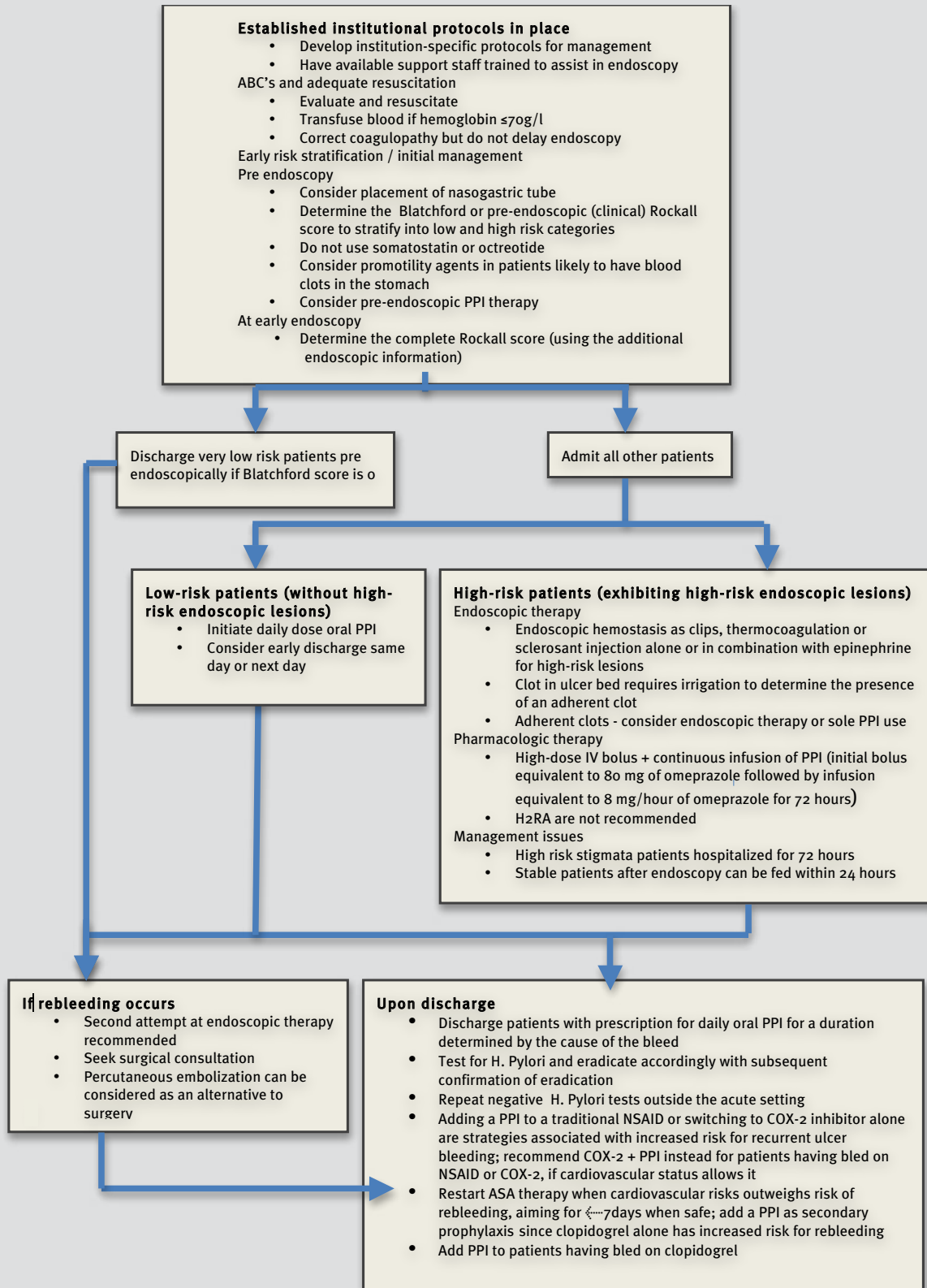
D: Non-endoscopic, non-meds in-hospital Rx

- D1: Patients at low-risk after endoscopy can be fed within 24 hours*
- D2: Most patients having undergone endoscopic hemostasis for high-risk stigmata should be hospitalized for at least 72 hours thereafter
- D3: Seek surgical consultation for patients who have failed endoscopic therapy*
- D4: Where available percutaneous embolization can be considered as an alternative to surgery in patients having failed endoscopic therapy
- D5: Patients with bleeding peptic ulcer should be tested for H. p and receive eradication if present, with confirmation of eradication†
- D6: Negative H. p test results obtained in the acute setting should be repeated require an NSAID the combination of a proton pump inhibitor and a COX-2 (-) is recommended to reduce the risk of recurrent bleeding from that of COX-2 (-) alone

E: Post discharge, ASA, NSAIDs

- E1: In patients with a prior ulcer bleed who require an NSAID, it should be recognized that treatment with a traditional NSAID plus PPI or a COX-2 (-) alone is still associated with a clinically important risk of recurrent ulcer bleeding
- E2: In patients with prior ulcer bleeding who require an NSAID the combination of a proton pump inhibitor and a COX-2 (-) is recommended to reduce the risk of recurrent bleeding from that of COX-2 (-) alone
- E3: In patients receiving low-dose ASA who develop an acute ulcer bleed, ASA should be restarted as soon as the risk of cardiovascular complication is thought to outweigh the risk of bleeding
- E4: In patients with a prior ulcer bleed who require CV prophylaxis, it should be recognized that clopidogrel alone has a higher risk of rebleeding vs ASA and a PPI

Algorithm



SELECTED COURSE NOTES

A simple and practical guide to assess and characterise colorectal polyps

R Singh, M Bourke

This review will focus on some of the salient features of colorectal polyps and how to approach and decide if endoscopic resection (ER) can be performed safely and effectively. Most of the novel electronic image enhancing modalities performs no better than white light endoscopy in the detection of colorectal neoplasia (table 1). There is simply no substitute for good bowel preparation, meticulous withdrawal technique ensuring good views are maintained and careful interrogation of the mucosal folds.

Table 1: Image enhanced endoscopy in detecting colorectal polyps

Author	Year	Technology	# of pts	Design	Result
Rex ¹	2007	NBI	434	RCT	-
Inoue ²	2008	NBI	243	RCT	-
Adler ³	2008	NBI	401	RCT	-
Matsuda ⁴	2008	AFI	167	Random, tandem	+
Pohl ⁵	2008	FICE	764	RCT	-
Kaltenbach ⁶	2008	NBI	276	Random, tandem	-
Van Den Broek ⁷	2009	AFI	100	Random, tandem	-
Adler ⁸	2009	NBI	1256	RCT	-

CHARACTERISATION

Lesions which are detected should be subjected to further characterisation. This is ideally performed in a systematic manner, initially with an 'overview' mode where the Paris classification and Granularity are assessed followed by a closer or 'micro/magnified' view where the Kudo's pit pattern can be assessed and if necessary and where possible, the vascular patterns, with some of the electronic chromoendoscopy techniques described above.

1. Lesion assessment on 'overview'

A. Paris- Japanese Classification

The Paris Japanese classification is especially important not only for standardisation but also allows the endoscopist to predict the risk of submucosal invasion (9).

Polyps can be divided into

1. Protruding lesions (Image 1)

- a) Ip (pedunculated)
- b) Is (sessile) - \rightarrow \geq 2.5mm from base of polyp (surrounding mucosa)

2. Flat lesions (Image 2)

- a) IIa: Slightly elevated (\leq 2.5mm)
- b) IIb: True flat lesion
- c) IIc: Mildly depressed lesion

The 2.5mm limit is used to differentiate sessile (Is) from flat (o-IIa) lesions and approximates the diameter of a biopsy forceps.

Image 1: Paris Japanese classification for protruding lesions

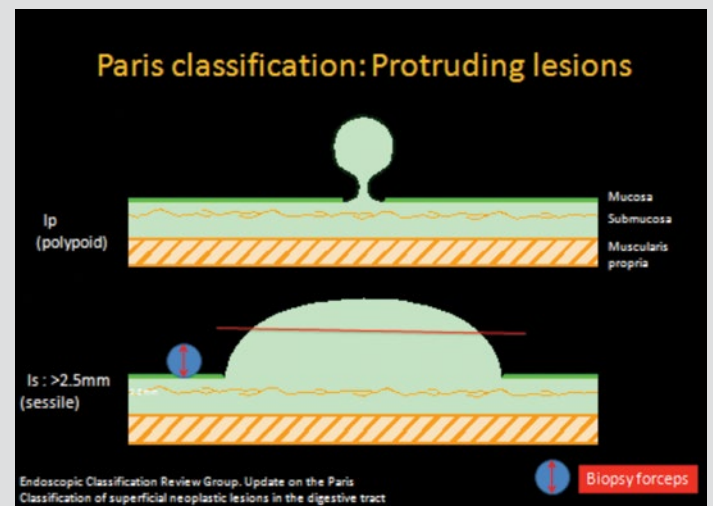
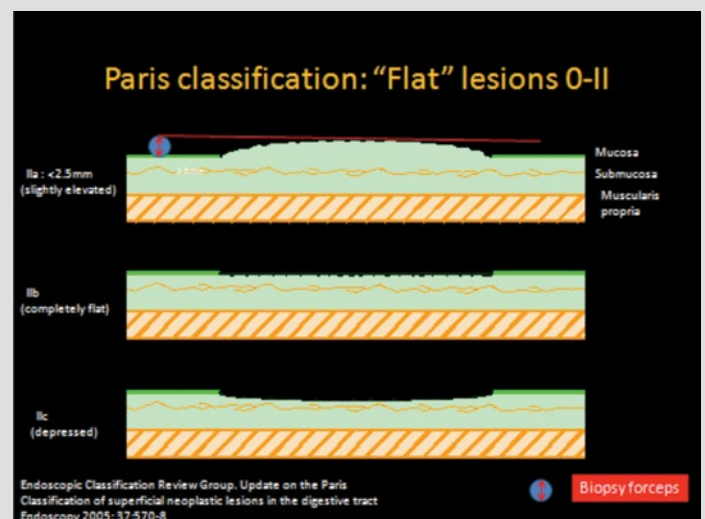


Image 2: Paris Japanese Classification for flat lesions



Flat colorectal lesions account for 36-56% of all colorectal polyps (table 2) while depressed lesions are less frequent occurring up to only 3% of all polyps (table 3). The prevalence of high grade dysplasia (HGD) or invasive cancer however increases as the lesion becomes more flat or depressed. Up to 59% of all Paris type IIc lesions harbour HGD (table 4). In Rembacken's landmark study, half of all flat and depressed lesions (Paris IIc) demonstrated submucosal invasion (SMI) (table 5).

We are faced with relatively large colorectal lesions (measuring ≥ 20 mm in size) in only 4% of all polyps (table 6). However, size of the lesion does not appear to matter when lesions are assessed for SMI. In a recent ongoing multi centre Australian study looking at large sessile lesions measuring ≥ 20 mm, SMI was detected in 33 of 680 polyps. The mean size of these polyps was 37mm in comparison to 35mm when no SMI was detected ($p=0.53$) (18, 19).

Table 2: Percentage of adenomas which are flat

Author	Year	# of adenomas	% flat
Jaramillo ¹⁰	1995	261	42%
Rembacken ¹¹	2000	321	36%
Saitoh ¹²	2001	136	40%
Rex ¹	2007	785	56%

Table 3: Percentage of flat-depressed colorectal lesions

Author	# of lesions	% depressed (IIc or IIa+c)
Okuno ¹³	66,670	1.9 %
Togashi ¹⁴	5408	2.8 %
Soetikno ¹⁵	1535	1.2 %

Table 4: Prevalence of HGD in colorectal polyps according to the Paris Japanese classification

Author	% HGD in polypoid lesions (Ip)	% of HGD in flat lesions (IIa/b)	% of HGD in depressed lesions (IIc)
Rembacken ¹¹	7.4	12.8	25
Soetikno ¹⁵	0.5	3.5	22
Tsuda ¹⁶	7.3	12.8	35.7
Hurlstone ¹⁷	12	15.4	59

Table 5: Prevalence of submucosal invasion (SMI) in colorectal polyps according to the Paris Japanese classification

Author	% polypoid (Ip)	% flat elevated (IIa)	% depressed (IIc)
Rembacken ¹¹	0.9%	1.7%	50%
Soetikno ¹⁵	0.5%	1.0%	11%

Table 6: Comparison of Paris Japanese classification and size

	Total	≤ 5 mm	6-10mm	11-19mm	≥ 20 mm
Polypoid (Is, Ip)	14,814	47.6%	37.7%	12.6%	2.1%
Flat (IIa, IIb)	10,363	73.1%	13.9	9.0%	4.0%
Flat-depressed (IIc)	585	45.0%	29.4%	21.7%	3.9%
Total	25862	14,892	7190	2919	761

(Adapted from Kudo SE, Lambert R, Allen J et al. Nonpolypoid neoplastic lesions of the colorectal mucosa. *Gastrointest Endosc* 2008; 4: Suppl 3)

B. Granularity

Flat lesions ≥ 20 mm should be further evaluated based on the granularity of the surface (Image 3). They can be divided into granular (G), non granular (NG) or a mixed pattern which contains both morphologies. The surface of G lesions appears ragged and almost polypoid (Image 4) whereas NG lesions are smooth (Image 5). We have shown that NG lesions in combination with flat and depressed, Paris type IIc lesions compared to granular, flat non depressed, Paris type IIa lesions tend to have a relative risk of 54.0 for SMI (18, 19).

SELECTED COURSE NOTES

Image 3: Models of Granular and Non Granular LST's according to the Paris classification

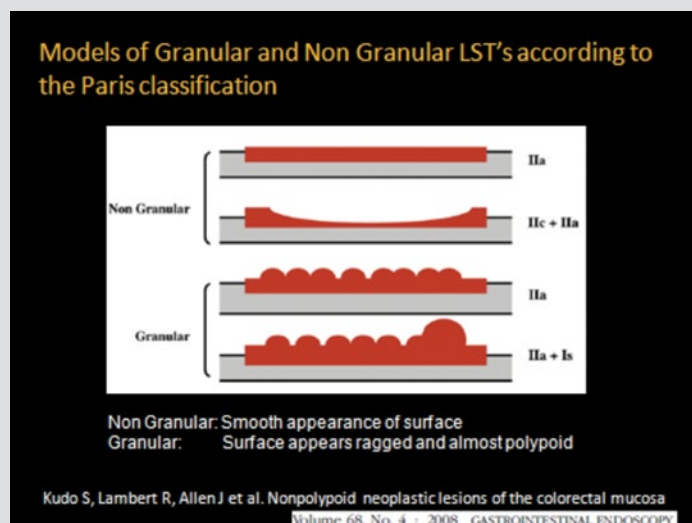


Image 4: Example of a Granular lesion



2. Lesions assessment on closer 'micro' view



Shin ei Kudo introduced the famous Kudo's pit pattern (KPP) classification in his seminal paper in 1994(20). Some of the commonly used dyes include Indigo carmine (0.2%) which is a surface contrast agent, Methylene blue (2mls in 40-50mls of water), a dye which is absorbed actively into the mucosa or crystal violet (0.2%: 10mls in 40 mls of water) which is generally used in exceptional cases where KPP type V needs to be defined further. The KPP is best visualised using high definition scopes with digital magnification or optical magnification (80-115X) (21).

Briefly the KPP can be divided into:

1. Type I: Pits appears round- normal colonic mucosa
2. Type II: Pits appears star like or onion skin like - hyperplastic polyps
3. Type III: Elongated pits - adenomas
4. Type IV: Cerebreform pits- adenomas
5. a) Type VI: Irregular (I) asymmetrical pits indicating malignancy confined to the mucosa (suitable for endoscopic resection)
- b) Type VN: Pit patterns disappears, non structured (N) or 'structure less'- advanced or signifying invasive cancer (surgery)

In an interesting abstract presented at the Digestive Disease Week 2009, Subramaniam et al.(22) looked at 27,000 polyps in 30 studies comparing the accuracy of standard white light endoscopy, chromoendoscopy, white light endoscopy with magnification , chromoendoscopy with magnification and NBI with magnification in the prediction of colorectal polyp histology (table 7). The authors found that using chromoendoscopy and NBI, both with optical magnification was the most effective method in predicting polyp histology resulting in an area under the ROC of more than 0.90.

Table 7: Comparison of various endoscopic techniques in predicting colorectal neoplasia

Technique	# studies	# polyps	Sensitivity	Specificity	Area under ROC
Standard	8	1493	71.3	81.4	0.80
Chromo	11	3097	88.6	85.0	0.87
Mag.	4	1108	81.5	79.7	0.87
Mag. + Chromo	21	21446	97.1	74.3	0.95
Mag + NBI	10	1016	88.5	80.0	0.91

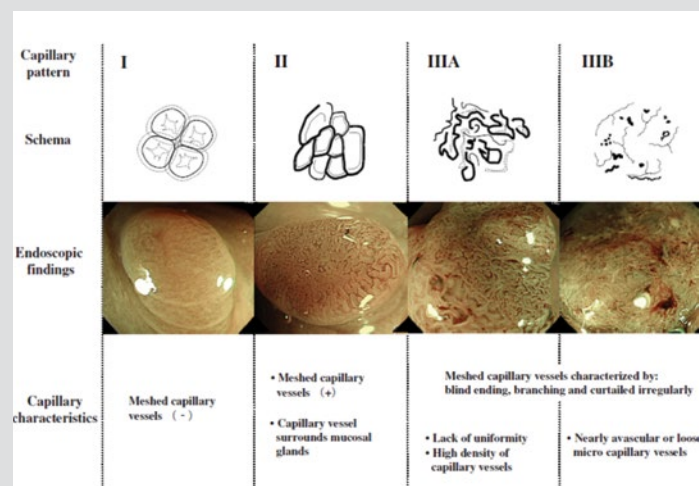
(Adapted from Subramaniam V, Mannath J, Ragnath K et al. *Gastrointest Endosc* Vol. 69, Issue 5, Page AB277)

B. Electronic chromoendoscopy

Some of the electronic chromoendoscopy techniques widely available now include Narrow Band Imaging (NBI, Olympus), I scan (Pentax) or the Flexible spectral Imaging Color enhancement (FICE, Fujinon). All these imaging modalities can assist in defining the micro vascular architecture in colorectal polyps. There have been numerous classifications utilised which at times can be confusing. With NBI, the modified Sano's classification appears to be the most 'user friendly' (23, 24) (Image 6):

- Type I: absent cn (hyperplastic polyp),
- Type II: cn present, surrounding mucosal glands (adenoma)
- Type IIIa: high density cn with turtousity and lack of uniformity (intramucosal cancer)
- Type IIIb: nearly avascular cn (invasive cancer)

Image 6: Lesions characterisation according to the Modified Sano's classification



(Adapted from Ikematsu H, Matsuda T, Emura F et al. *BMC Gastroenterology* 2010 Mar 27; 10:33)

In a preliminary feasibility study, the sensitivity (Sn), specificity (Sp), positive (PPV) and negative predictive values (NPV) in differentiating neoplastic from non-neoplastic lesions with high confidence was 98%, 89%, 93% and 97%, respectively, while the Sn, Sp, PPV and NPV in predicting endoscopic resectability (type II, IIIa vs type I, IIIb) was 100%, 90%, 93% and 100%, respectively (25). The interobserver agreement between assessors (k value) was also substantial at 0.89.

CONCLUSION: a pragmatic approach

In our opinion, a step by step methodological approach as described above can often aid in the characterisation of colorectal polyps before a decision is made to proceed onto endoscopic resection. This includes assessing the lesion in an overview mode where the gross morphology is determined using the Paris Japanese classification and the Granularity followed by assessing the pit pattern and if possible (and available) the vasculature using some of the newer electronic chromoendoscopy techniques. Consideration must also be given to the location of the polyp, the ease of reaching the lesion and the manoeuvrability of the colonoscope and previous attempts at resection before ER can be performed safely and effectively.

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Notes

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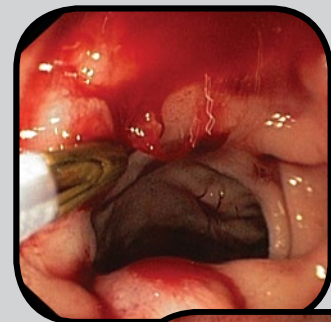
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