Chromoendoscopy in IBD: Should we Incorporate the SCENIC Guidelines?

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Objectives

1. How random biopsy and DALM started
2. The SCENIC International Consensus Statement on surveillance and management of dysplasia in IBD
3. What to do in real life?
Dysplasia in the Fiber Optic Era (1980s) was Invisible

- Blackstone. Raven Press 1984
No System to Name Them — DALM

- Blackstone. Raven Press 1984: DALM
1990s: Improved Scopes

Fiber Optic (36,000 fibers)  Standard Definition
imagine ...

Screening Colonoscopy with random biopsy
(we sample <0.1% of surface area)
If you do a random biopsies in a high risk patients

What is the number of dysplasia identified in 48,522 biopsies?

39 (0.08%)
Interval CRC is Highest in Colonic IBD

The chart shows the rate of missed colorectal cancer (CRC) in different categories of IBD:

- **Non-IBD**
  - Rate of missed CRC (%): 2.7
  - Stage 0 to II: 3.1

- **Crohn's**
  - Rate of missed CRC (%): 9
  - Stage 0 to II: 6.1

- **UC**
  - Rate of missed CRC (%): 6.4
  - Stage 0 to II: 9.4

The chart indicates that the rate of missed CRC is highest in colonic IBD compared to non-IBD and Crohn's disease.
Can we do better than random biopsy?
High Definition

1,000,000 pixels
Chromoendoscopy

Before Indigo Carmine

After Indigo Carmine

Courtesy of Silvia Sanduleanu, Maastricht.
CONSENSUS STATEMENT

SCENIC International Consensus Statement on Surveillance and Management of Dysplasia in Inflammatory Bowel Disease

Loren Laine,¹,² Tonya Kaltenbach,³ Alan Barkun,⁴ Kenneth R. McQuaid,⁵ Venkataraman Subramanian,⁶ and Roy Soetikno,³ for the SCENIC Guideline Development Panel
Problem Statement

1. How should we classify the appearance of dysplasia?

2. How should surveillance colonoscopy to detect dysplasia in patients with IBD be performed?

3. How should dysplasia identified at colonoscopy in patients with IBD be managed?
DALM — CONFUSING

SCENIC Macroscopic Classification of Superficial Colorectal Neoplasms (Type 0)

Type 0-I (Polypoid or P-CRN)
- Pedunculated (Ip)
- Sessile (Is)

Type 0-II (Nonpolypoid or NP-CRN)
- Superficial Elevated (IIa)
- Flat (IIb)
- Depressed (IIc)

Ulcer

Description of border
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When performing surveillance with white light colonoscopy, high definition is recommended rather than standard definition. (80% agreement, strong recommendation; low-quality evidence)
When performing surveillance with standard-definition colonoscopy, chromo-endoscopy is recommended rather than white-light colonoscopy. (85% agreement; strong recommendation: moderate-quality evidence)
When performing surveillance with high-definition colonoscopy, chromo-endoscopy is suggested rather than white-light colonoscopy. (84% agreement; conditional recommendation; low-quality evidence)
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Random vs Targeted Biopsies

RCT

• Patients with UC > 7 years

• RCT of random biopsies vs targeted biopsies

• No pan-chromoendoscopy was done but selective use of chromo was applied if lesion was detected

• Same yield (11% targeted vs 9% random, NS) but!!!
  • Random biopsy colonoscopy took longer (41 min vs 26 min)
  • Random biopsy colonoscopy took more biopsies (35 vs 3 biopsies)
When performing surveillance with image-enhanced high-definition colonoscopy, **narrow-band imaging is not suggested** in place of chromoendoscopy. (90% agreement; conditional recommendation; moderate-quality evidence)
Final Results of a Randomized Study Comparing High Definition Colonoscopy Alone With High Definition Dye Spraying and Electronic Virtual Chromoendoscopy Using iSCAN for Detection of Colonic Neoplastic Lesions During IBD Surveillance Colonoscopy

High Def = Chromo Endoscopy = Virtual Chromo Endoscopy

DDW 2016
Potential Problems and How to Address Them
1. Avoid Active Disease
2. Excellent bowel preparation is a prerequisite
2. Wash residue during insertion
3. Chromoendoscopy begins in the cecum.
4. Examine all lesions closely: is the border well-defined?

Well-defined border: potentially resectable endoscopically
4. Examine all lesions closely: is is the border well-defined?

Ill-defined border: Surgery

Bx at least HGD
5. If lesion resectable, remove en-bloc when possible

Biopsy adjacent mucosa
5. If lesion unresectable, biopsy and tattoo
Extensive Pseudopolyps - Random biopsy still required

Biopsy - HGD
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Endoscopic Resection

• OK to Endoscopically Resect
  ✓ Lesions in segments uninvolved with colitis
  ✓ Polypoid lesions
  ✓ Well defined non-polypoid lesions that are relatively small

• Do not edosocopically resect
  ✓ Non-polypoid lesions with poorly defined border
  ✓ Large non-polypoid lesions
Principles of Endoscopic Resection in IBD

- NP-CRN cannot be removed by multiple biopsies
- Endoscopic resection of flat lesions can be very difficult
- EMR is usually required
- ESD may be needed in some cases
EMR can be extremely difficult in IBD
Difficult to capture
Consider referral to center with high level expertise in mucosal resection techniques for all IBD related non-polypoid and polypoid dysplastic lesions.
Conclusions

• Random biopsy to detect dysplasia in inflammatory bowel disease is time consuming and suboptimal

• Dysplasia in IBD is visible

• The use of chromoendoscopy with targeted biopsies of suspected neoplasms increases the efficacy of screening in IBD

But!!!

• Multiple issues remain to be resolved

• Lesion description will be an issue

• The role of high definition with image-enhancement remains to be determined