Serrated polyps

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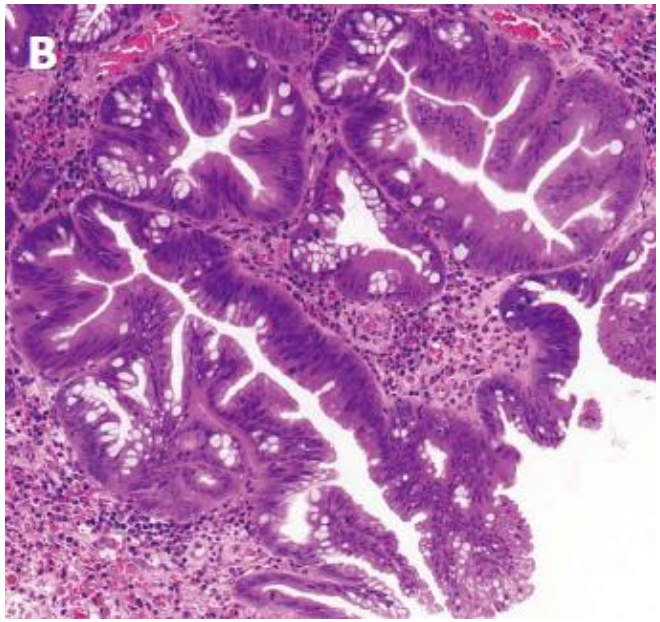
Importance of serrated polyp

Hyperplastic (serrated) polyps

Previously considered benign, lacking premalignant potential

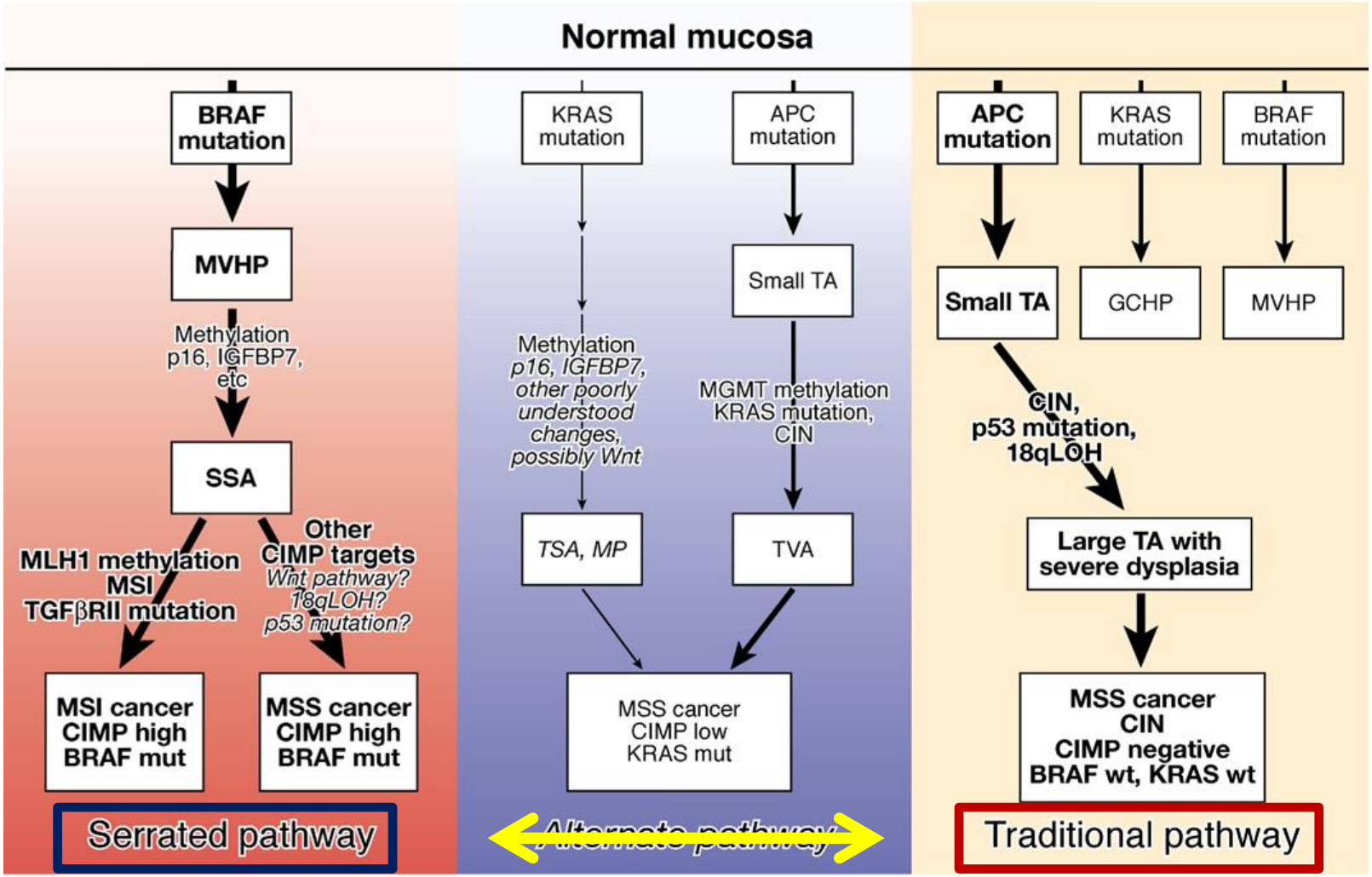
Some subtypes - precursor lesions for cancers

“Serrated pathway”



Saw-toothed appearance (=serrated)

Serrated pathway of CRC carcinogenesis



Legget et al. Gastroenterology 2010

Serrated polyps – Features of major categories

WHO (2010)

Hyperplastic polyp (HP)

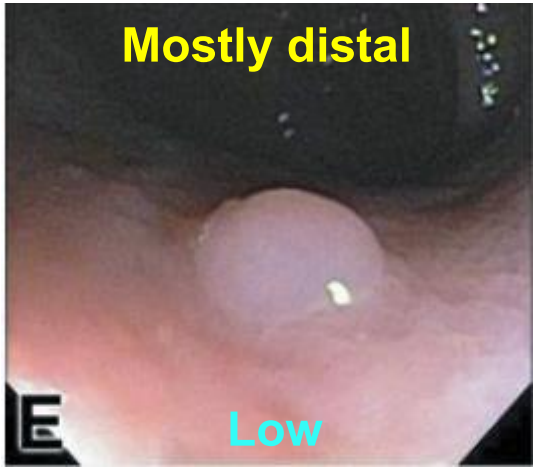
Sessile serrated adenoma/polyp (SSA/P)*
With or without cytological dysplasia

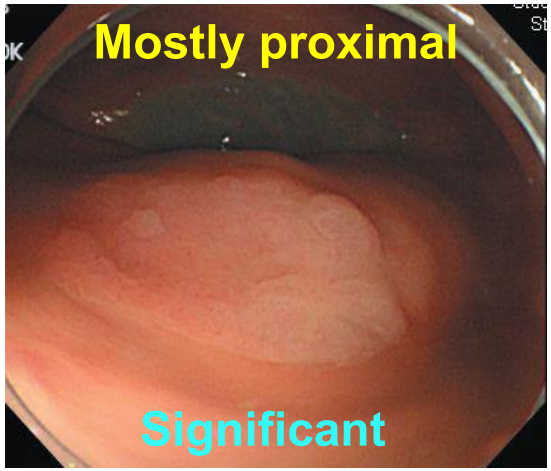
Traditional serrated adenoma (TSA)

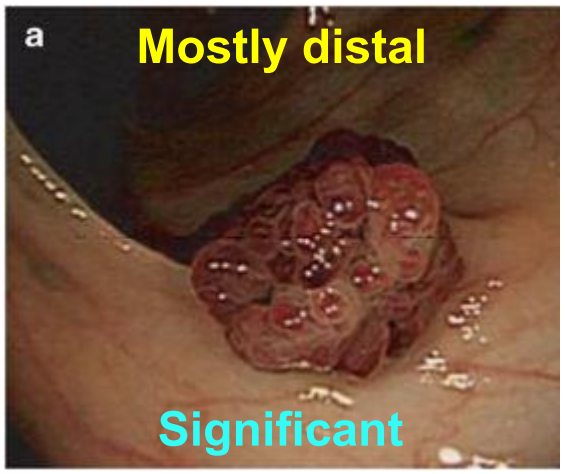
BSG statement (2017)

- Hyperplastic polyp
- Sessile serrated lesion (SSL)
- SSL with dysplasia
- Traditional serrated adenoma
- Mixed polyp

	HP	SSA/P	TSA
Location	Mostly distal	Mostly proximal	Mostly distal
Malignant potential	Low	Significant	Significant

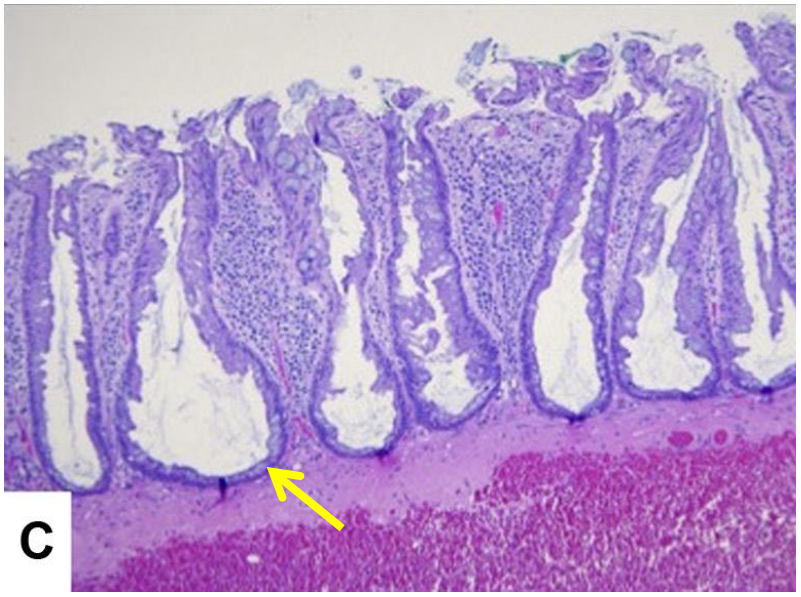


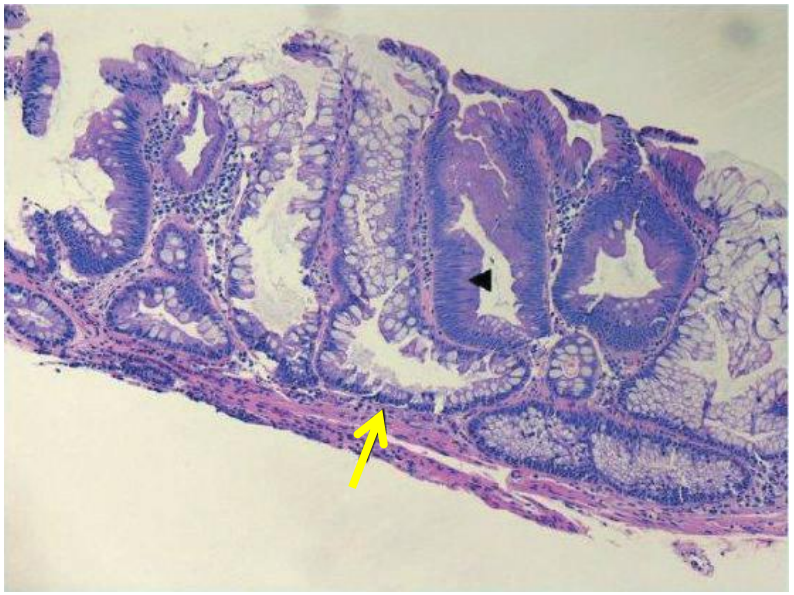




Pathologic features of SSA/P

- Irregular distribution of crypts
- **Dilatation of crypt bases**
- Serration present at crypt bases
- Branched crypts
- **Horizontal extension of crypt bases (Boot- or inverted ‘T’ shaped)**
- Dysmaturation of crypts
- Herniation of crypts through muscularis mucosa



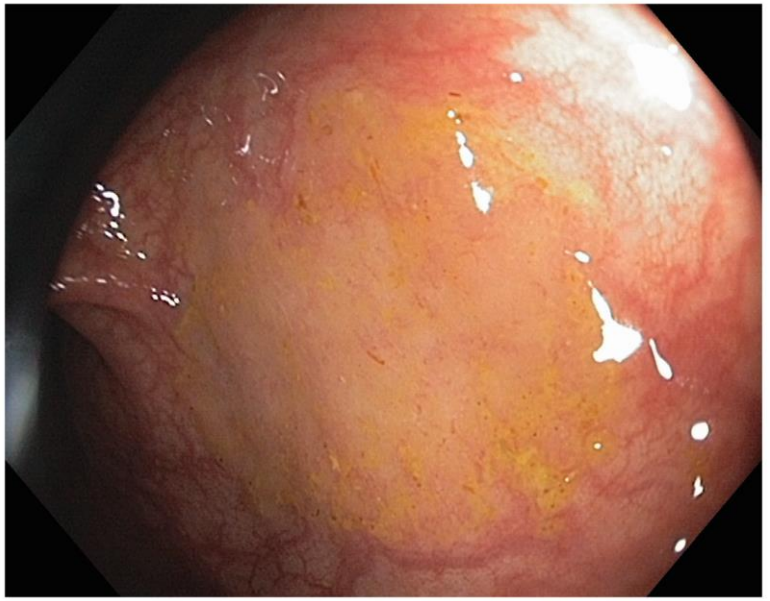


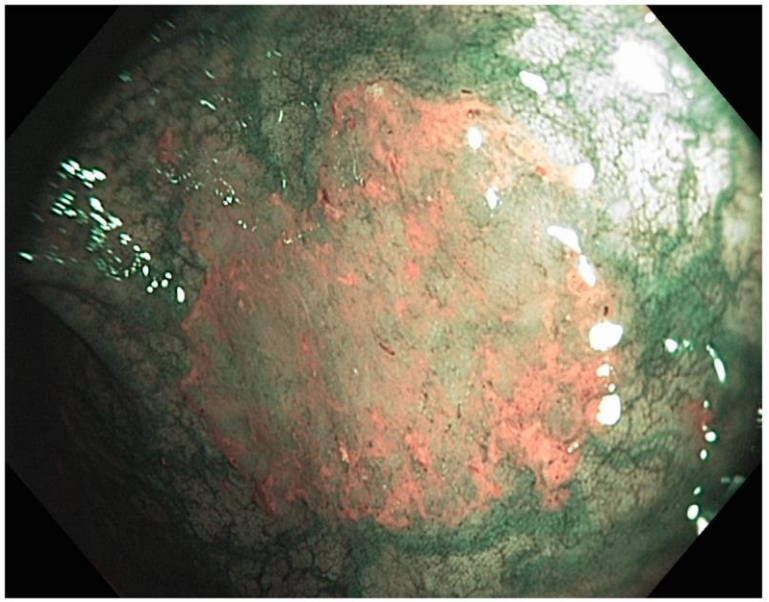
Sessile serrated adenoma/polyp

- 5% (1~9%) of all colonic polyps
- Right colon predominance
- Flat or sessile
- Resemble prominent folds
- Pale color with minimal changes
- Covered with mucus
- Indistinct borders

Difficult to detect

and resect completely

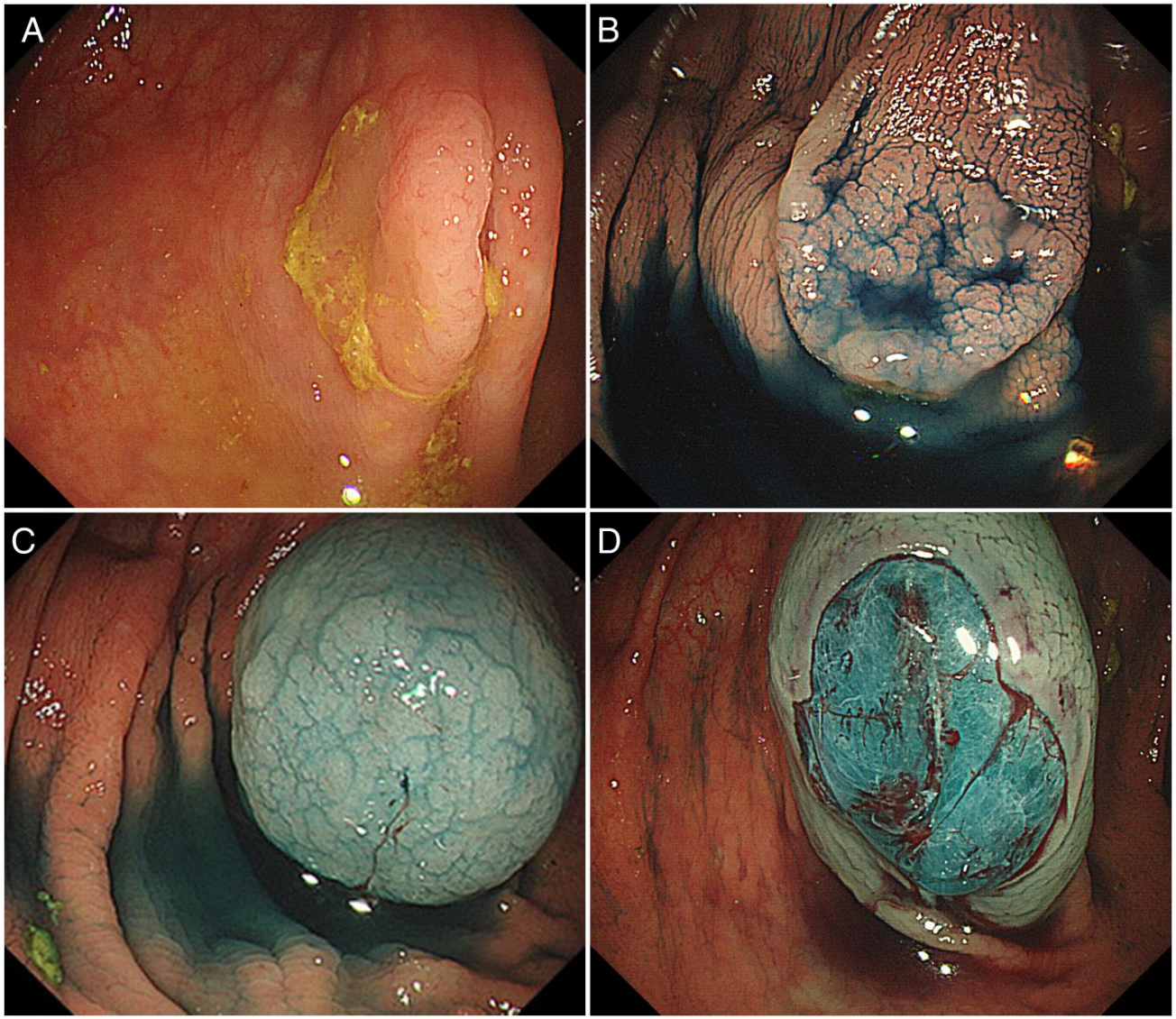




Serrated polyps management

- **All proximal serrated polyps** (proximal to the sigmoid colon) should be **removed**.
- All **proximal serrated polyps > 10 mm** diagnosed as hyperplastic polyps should be clinically **managed as SSA/Ps**.
- When SSA/P margins cannot be fully resected, residual tissue can be removed **by cold forceps or burned by APC**, and **close endoscopic follow-up** is advised.

Detection and removal of SSA/P



East JE, et al. Gut 2017

Surveillance of serrated polyps
- AGA (2012) / BSG (2017)

Baseline polyps	Recommended surveillance interval (y)
Sessile serrated polyp ≥ 10 mm	**3**
Sessile serrated polyp with dysplasia	**3**
Traditional serrated adenoma	**3**

Lieberman DA, et al. Gastroenterology 2012

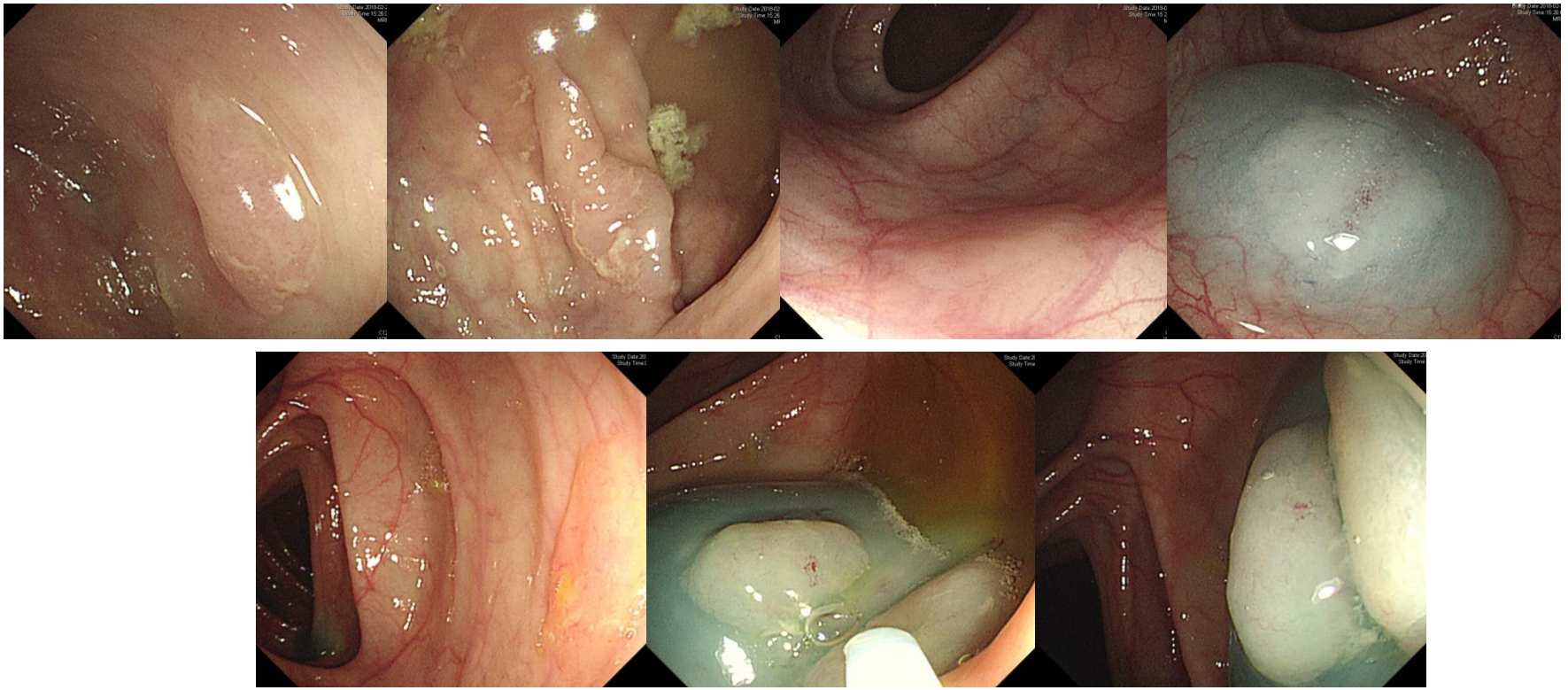
East JE, et al. Gut 2017

Consensus opinion surveillance intervals after endoscopic resection of serrated lesions

Histology	Size	Number	Location	Interval in years
HP	<10 mm	Any number[b]	Rectosigmoid	10[c]
HP	≤5 mm	≤3	Proximal to sigmoid	10
HP	Any	≥4	Proximal to sigmoid	5
HP	>5 mm	≥1	Proximal to sigmoid	5
SSA/P or TSA	<10 mm	<3	Any	5
SSA/P or TSA	≥10 mm	1	Any	3
SSA/P or TSA	<10 mm	≥3	Any	3
SSA/P	≥10 mm	≥2	Any	1–3[d]
SSA/P w/dysplasia	Any	Any		1–3[e]

Rex DK, et al. Am J Gastroenterol 2012

Multiple serrated adenomas during screening colonoscopy



Serrated polyposis syndrome (SPS)

WHO definition of SPS 2010*
(1) At least five serrated polyps proximal to the sigmoid colon, two of which are >10 mm in diameter
(2) Any number of serrated polyps occurring proximal to the sigmoid colon in an individual who has a first-degree relative with serrated polyposis
(3) More than 20 serrated polyps of any size distributed throughout the colon
*Serrated lesion refers to any combination of hyperplastic polyps and sessile serrated polyps.

Serrated polyposis syndrome (SPS)

Table 3 Serrated polyposis syndrome prevalence in population-based screening by modality (adapted from East *et al*[68])

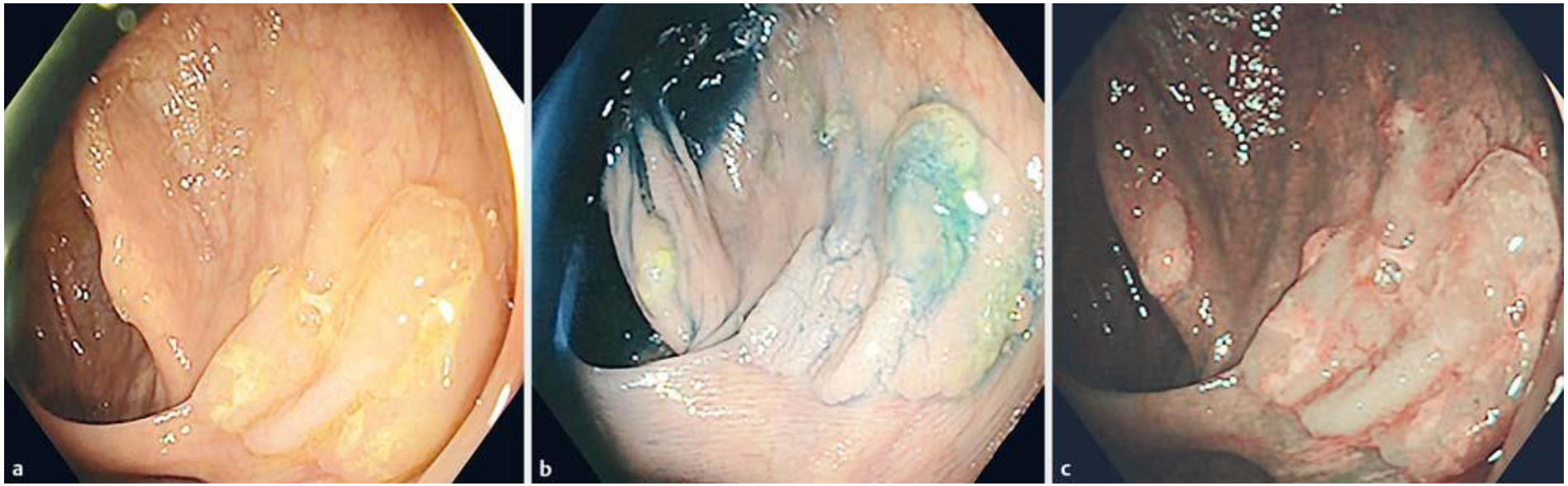
Author	Screening modality	n/pop	% (95% CI)	Ratio
Lockett	Flexible sigmoidoscopy	12/40 674	0.029% (0.02 to 0.05)	1:3000
Orlowska	Colonoscopy	28/50 148	0.056% (0.04 to 0.09)	1:1791
Kahi	Colonoscopy	3/6681	0.04% (0.01 to 0.014)	1:2227
Biswas	FOBT (guaiac)	5/755	0.66% (0.24 to 1.52)	1:151
Moreira	FOBT (FIT)	8/2355	0.34% (0.17 to 0.67)	1:294

FOBT, faecal occult blood test; FIT, faecal immunochemical test.

Prevalence of SPS : 1:2000 (colonoscopy-based screening)
~ 1:300 (FOBT-based screening)

East JE, et al. Gastrointest Endosc 2015

Reassessment of SPS within 1 year



From 3444 screening colonoscopies, the rate of diagnosis of SPS

0.32% (at baseline) to **0.90%** (after reassessment)

Rivero-Sanchez L, et al. Endoscopy 2017

Colorectal cancer risk in SPS

- The risk of CRC in Korea is **lower** than Western population[1]

Korean	Western
9.0-10.0%	**7.1-70.0%**

  - Small retrospective studies with selection bias

- A recent multi-center study in Western reported that the risk of CRC is **lower** than previous studies.[2]
  - Of the 296 patients included study, 47 **(15.8%)** developed CRC
  - During surveillance, 4 **(8.5%)** individuals developed CRC
  - The cumulative CRC risk for patients with SPS - **1.9% in 5 years** (**7% at 5 years** in previous study[3])

[1] Kim ER, et al. Intest Res 2017
[2] Carballal S, et al. Gut 2016
[3] Boparai KS, et al. Gut 2010

Recommended guidelines for SPS

US Mukti-Society Task Force on Colorectal Cancer, AGA

Baseline colonoscopy: most advanced finding(s)	Recommended surveillance interval (*y*)	Quality of evidence supporting the recommendation
Serrated lesions		
Sessile serrated polyp(s) <10 mm with no dysplasia	5	Low
Sessile serrated polyp(s) ≥10 mm	3	Low
OR		
Sessile serrated polyp with dysplasia		
OR		
Traditional serrated adenoma		
Serrated polyposis syndrome[a]	1	Moderate

British society of gastroenterology

We suggest that given the elevated CRC risk in patients who meet the WHO criteria for serrated polyposis syndrome, these patients should be offered **one to two yearly** colonoscopic surveillance

Lieberman DA, et al. Gastroenterology 2012
East JE, et al. Gut 2017