The Paris classification of colonic lesions

Training to improve the interobserver agreement among international experts

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Introduction

- Japanese classification morphology of superficial lesions of the gastrointestinal tract
- 2002 international Endoscopic Classification Review Group: the Paris Classification of Neoplastic Lesions in the digestive tract
- Adequate description of polyp morphology and size of importance
  - Helps to determine appropriate method of treatment
  - Has a predictive value for submucosal invasion
  - Facilitates comparative research in colonoscopy practice

- However, thus far the validity and reproducibility of the classification has not been assessed

….until now!

Aim & Methods

- To evaluate the interobserver agreement of the Paris classification and size of colorectal neoplasms among 7 western expert endoscopists
- 7 expert endoscopists assessed the Paris classification of 85 colonic polyps in short video clips (10-25 seconds)
- A Fleiss kappa using an absolute agreement definition was used to measure interobserver agreement with an interpretation of kappa values according to Landis and Koch[1]

1. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics 1977;33:159-74.

Results

- The interobserver agreement of the Paris classification of 85 polyps among 7 experts was ‘moderate’ with a **kappa of 0.42** (95% CI 0.39-0.45)

- When analysing the data on polyp morphology assessments into just two categories, polypoid (Paris Ip, Isp, Is) vs. non-polypoid (Paris IIa, IIb, IIc, III) the Fleiss kappa remained ‘moderate’ with a **kappa of 0.45** (95% CI of 0.40-0.49)

Conclusion

- Interobserver agreement of the Paris classification for polyp morphology was only moderate
- No improvement when polyp classification was dichotomized to polypoid vs. non-polypoid categories
- Before the Paris classification of colonic neoplasms can be adequately used in western endoscopy units, it seems necessary **to train** endoscopists to achieve uniformity in classifying morphology of colonic lesions.

Training

Training schedule

- Step 1: basics
- Step 2: examples
- Step 3: training
- Step 4: ‘feedback’
- Step 5: re-assessment of the same 85 polyps to evaluate agreement again

Step 1: basics

- The Paris classification is based on the Japanese classification of superficial neoplastic lesions in the gastrointestinal tract

Table 2 The macroscopic classification of type 0 digestive-tract lesions, with a superficial appearance at endoscopy

Protruding	
Pedunculated	0–Ip
Sessile	0–Is
Nonprotruding and nonexcavated	
Slightly elevated	0–IIa
Completely flat	0–IIb
Slightly depressed	0–IIc
Elevated and depressed types	0–IIc + IIa
	0–IIa + IIc
Excavated	
Ulcer	0–III
Excavated and depressed types	0–IIc + III
	0–III + IIc

Lambert R et al. Endoscopic Classification Review Group. Update on the Paris Classification of Superficial Neoplastic Lesion in the Digestive Tract. Endoscopy 2005

Step 1: basics

- We will focus only on the main type of morphology (so no combined types)

Table 2 The macroscopic classification of type 0 digestive-tract lesions, with a superficial appearance at endoscopy

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Slightly depressed	0–IIc
Excavated	
Ulcer	0–III

Lambert R et al. Endoscopic Classification Review Group. Update on the Paris Classification of Superficial Neoplastic Lesion in the Digestive Tract. Endoscopy 2005

Step 1: basics

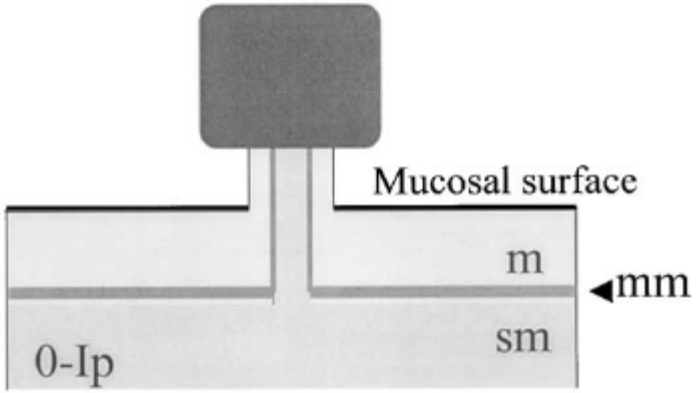
- Protruding types (0-I) protrude above the surrounding surface at endoscopy:
  - 0-Ip pedunculated 
  - 0-Isp subpedunculated 
  - 0-Is sessile 

Lambert R et al. Endoscopic Classification Review Group. Update on the Paris Classification of Superficial Neoplastic Lesion in the Digestive Tract. Endoscopy 2005

Step 1: basics

Pedunculated (0-Ip):

- Base is more narrow than top of lesion



- M= mucosa, mm= muscularis mucosae, sm= submucosa

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

Subpedunculated (0-Isp):

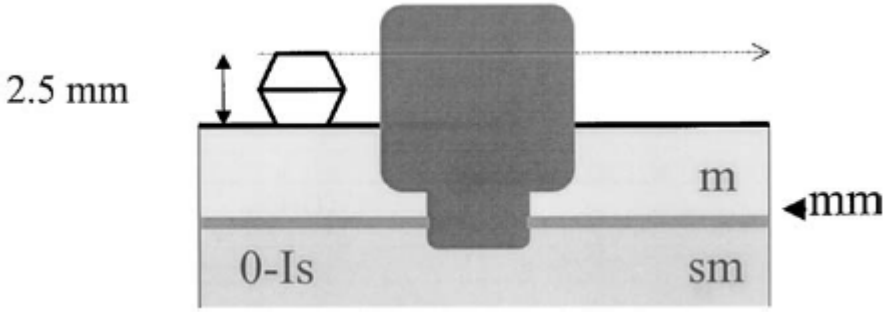
- Intermediate and broad-based
- Same management as (0-Is) sessile polyps

Lambert R et al. Endoscopic Classification Review Group. Update on the Paris Classification of Superficial Neoplastic Lesion in the Digestive Tract. Endoscopy 2005

Step 1: basics

Sessile (0-Is):

- Base and top of lesion have same diameter



- The protrusion of the lesion is compared with the height of the closed cups of a biopsy forceps (2.5mm), dotted arrow passes under top of lesion
- M= mucosa, mm= muscularis mucosae, sm= submucosa

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

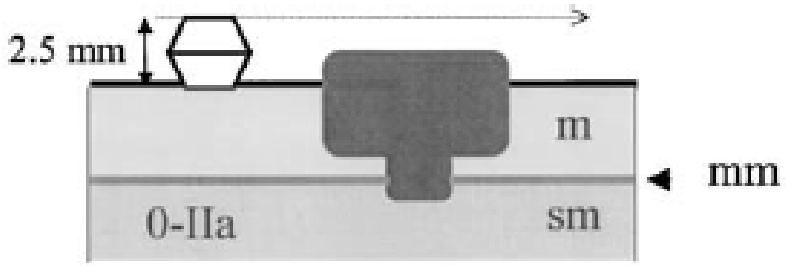
- Non-protruding non-excaved types (0-II):
  - Slightly elevated (0-IIa) 
  - Completely flat (0-IIb) 
  - Slightly depressed (0-IIc) 

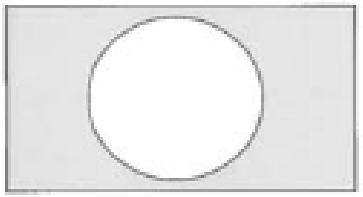
Lambert R et al. Endoscopic Classification Review Group. Update on the Paris Classification of Superficial Neoplastic Lesion in the Digestive Tract. Endoscopy 2005

Step 1: basics

Slightly elevated (0-IIa)

- Slightly higher than adjacent mucosa





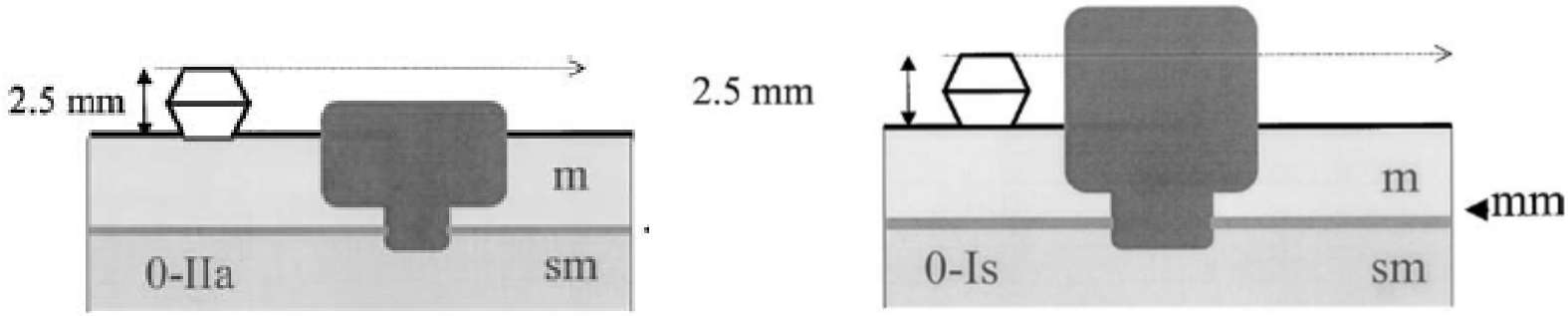
- The protrusion of the lesion is compared with the height of the closed cups of a biopsy forceps (2.5mm), dotted arrow passes under top of lesion
- M= mucosa, mm= muscularis mucosae, sm= submucosa

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

Slightly elevated (0-IIa) vs Sessile (0-Is)

- Easily misclassified



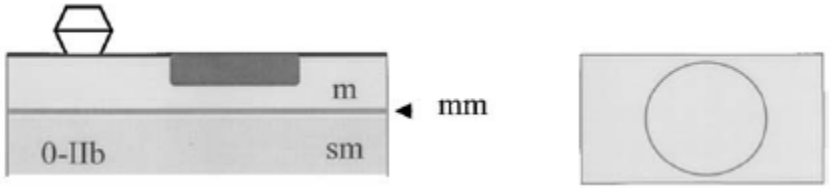
- Classification is made easier by placing a biopsy forceps as a calibrating gauge, for the height of the lesion
- Lesions protruding above the level of the closed jaws of the biopsy forceps (2.5mm), are classified as 0-Is, lesions protruding below this level are classified as 0-IIa

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

Completely flat (0-IIb)

- Lesion does not protrude above mucosal surface

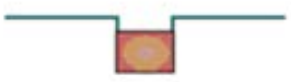


- M= mucosa, mm= muscularis mucosae, sm= submucosa

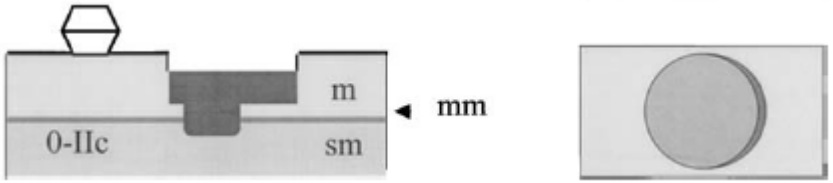
The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

Slightly depressed (0-IIc)



- Superficial erosions in a depressed lesion involve only the most superficial layers
- Absolutely depressed: level of depression is lower then the surface of the adjacent mucosa
- Relatively depressed: level of depression is still higher than the surface of the adjacent mucosa



- M= mucosa, mm= muscularis mucosae, sm= submucosa

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 1: basics

Excavated/Ulcerated (0-III)

- Lesion with deep ulcer below mucosa
- Loss of the mucosa and often of the submucosa

- Distinction between a slightly depressed (0-IIc) and excavated (0-III) lesion: based on the depth of the depression from the adjacent mucosa
- Cut-off limit is 1.2 mm in columnar epithelium
- However: 0-III extremely rare in the colon

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Assessing drawings is easier than assessing movies
- You will now see 8 examples of polyps in video clips with different types of morphology according to the Paris classification, some next to a biopsy forceps

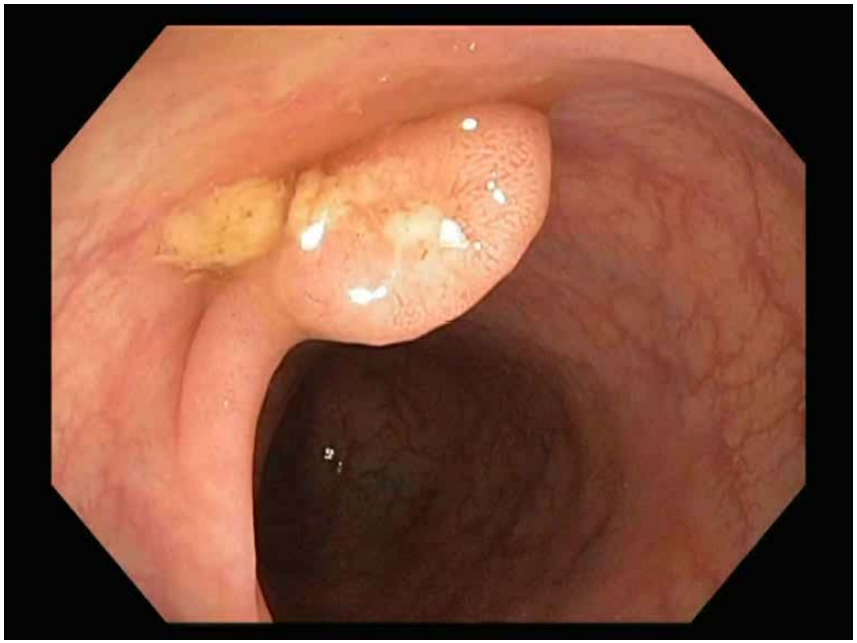
Step 2: examples

- Difference between sessile (0-Is) and slightly elevated (0-IIa) is difficult
- Forceps cups next to lesion make differentiation easier
- Most of the examples will show sessile or slightly elevated lesions, as we think this causes the most interobserver variability

- If you click on the picture, the movie will start (duration varies from 10-25 seconds)

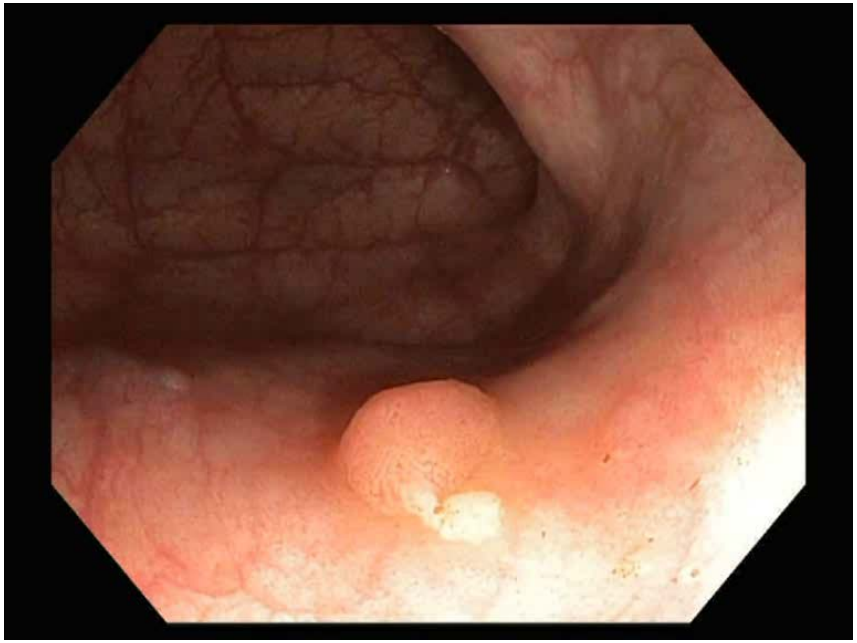
Step 2: examples

- Example 1: pedunculated polyp (0-Ip)



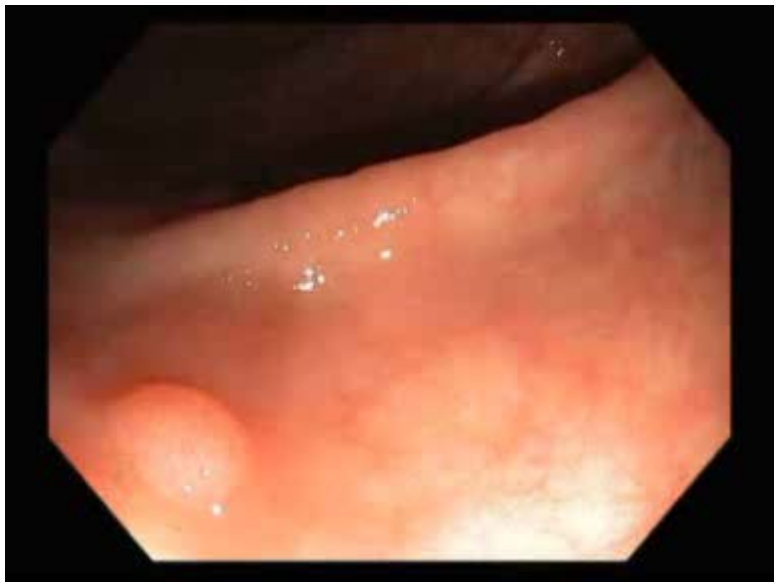
Step 2: examples

- Example 2: sessile polyp (0-Is)



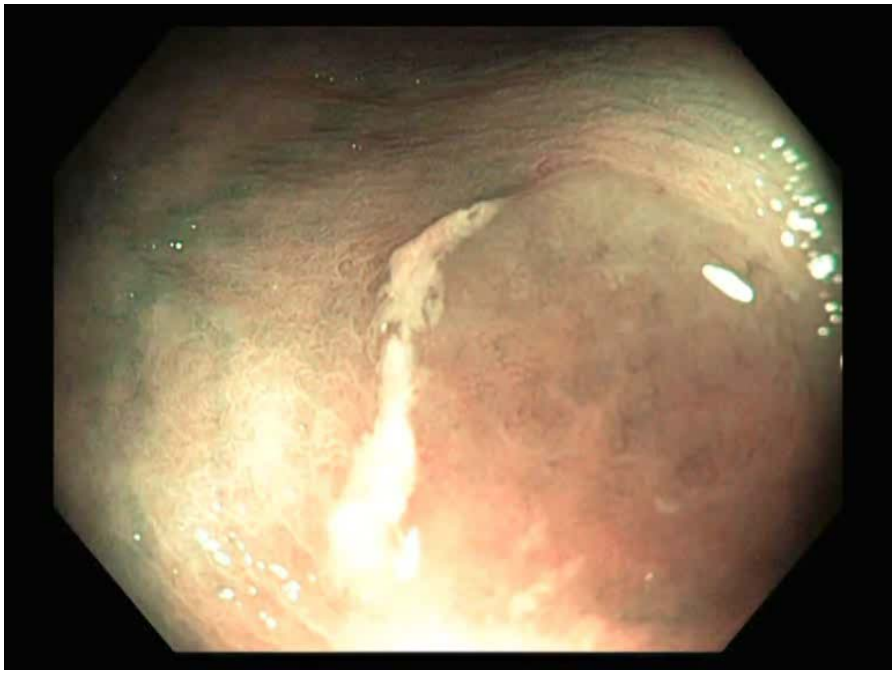
Step 2: examples

- Example 3: slightly elevated lesion (0-IIa)



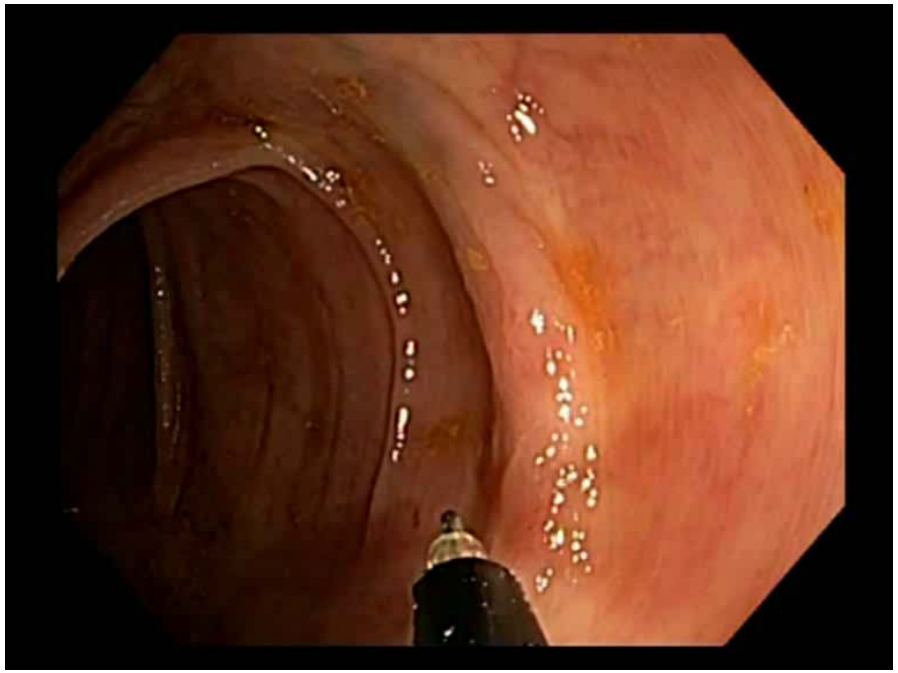
Step 2: examples

- Example 4: slightly elevated lesion (0-IIa)



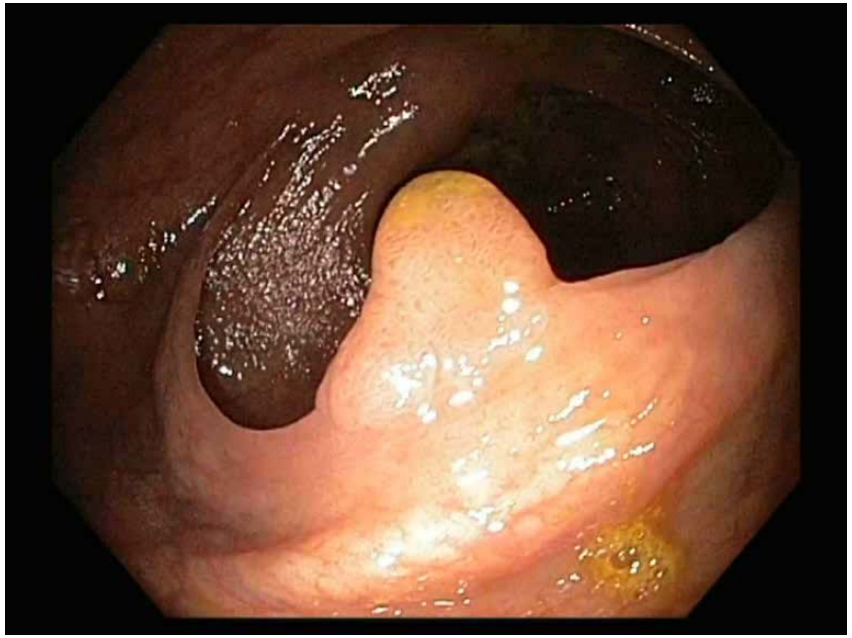
Step 2: examples

- Example 5: completely flat lesion (0-IIb)



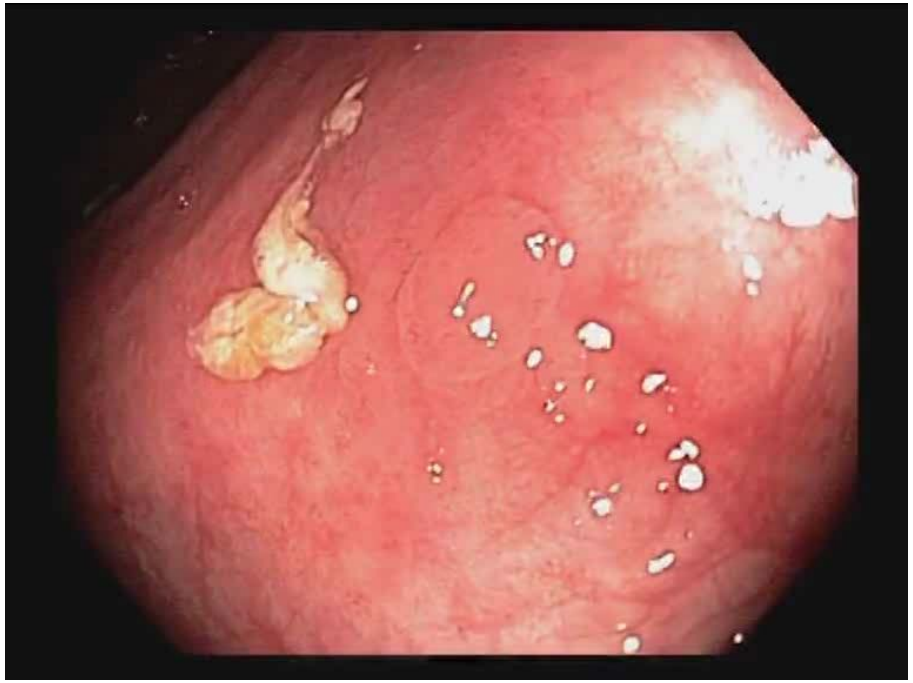
Step 2: examples

- Example 6: sessile polyp (0-Is)



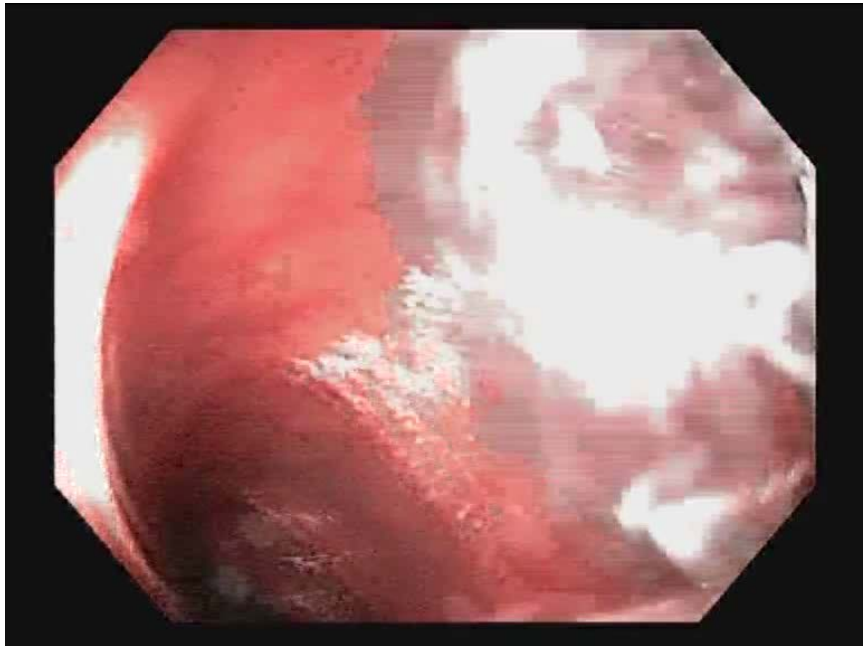
Step 2: examples

- Example 7: slightly elevated lesion (0-IIa)



Step 2: examples

- Example 8: slightly elevated lesion (0-IIa)



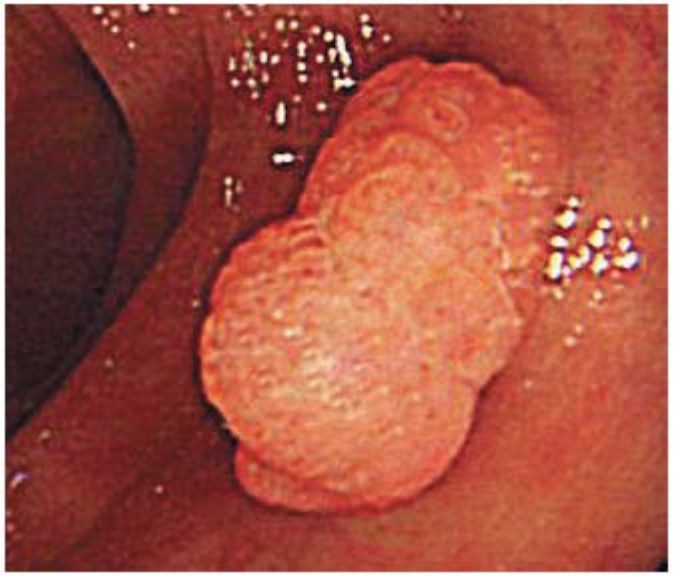
Step 2: examples

- In preparation of the photo training, 6 photo examples are shown from the original article of the Paris workshop 2002

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 1: 0-Is

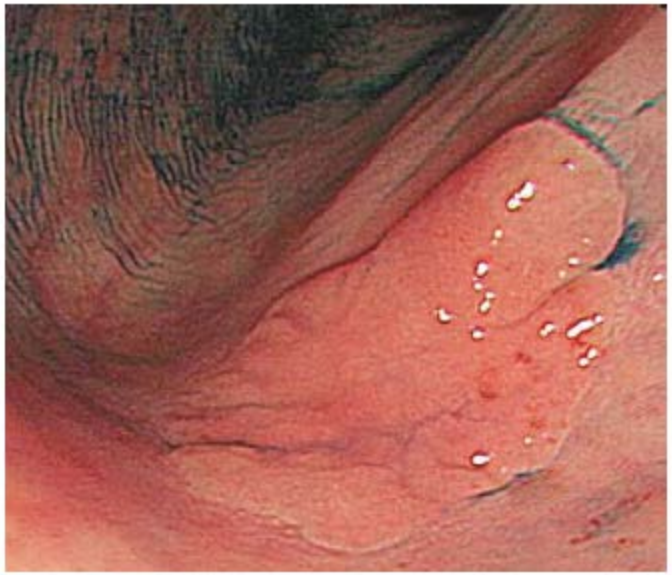


Large bowel type 0-I

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 2: 0-IIa

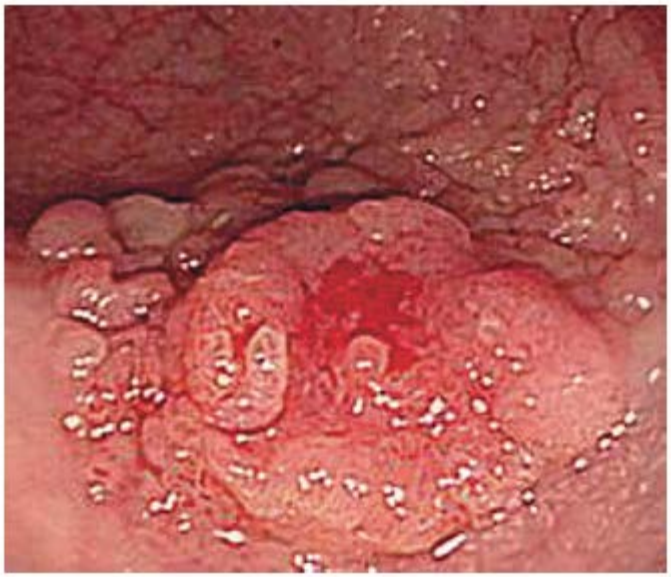


Large bowel: *type 0-IIa*, laterally spreading type

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 3: 0-IIa

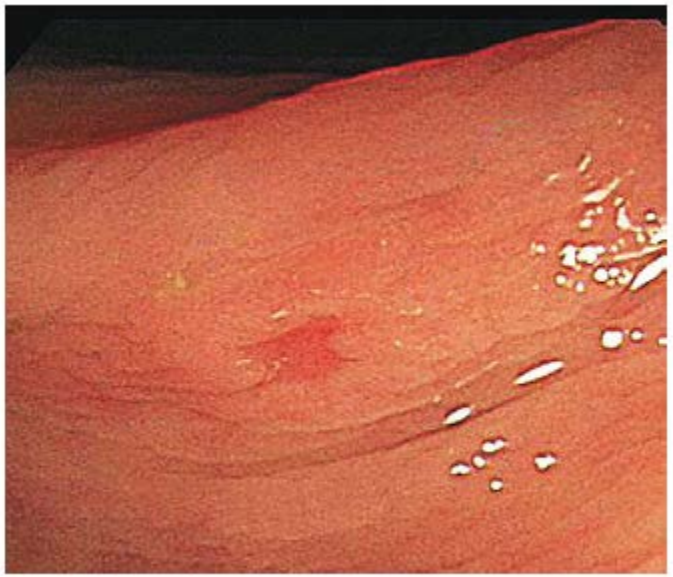


Large bowel: type 0-IIa: unstained, laterally spreading type, intraepithelial neoplasia.

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 4: 0-IIc

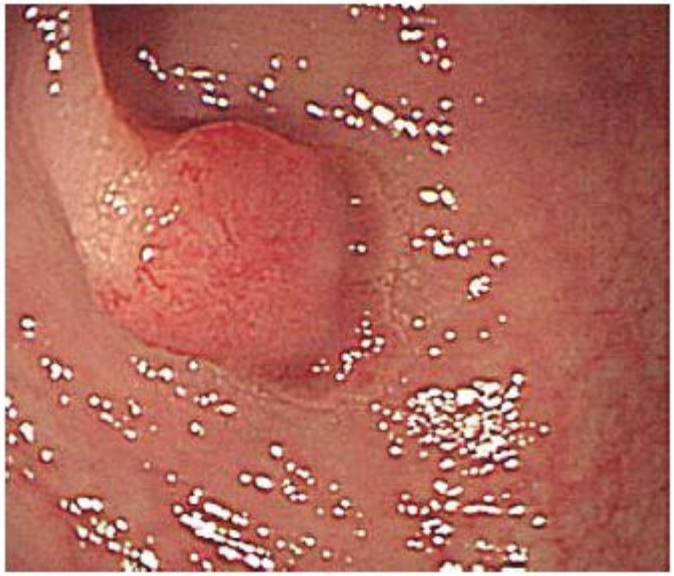


Large bowel: *type 0-IIc*

The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 5: 0-IIc + IIa

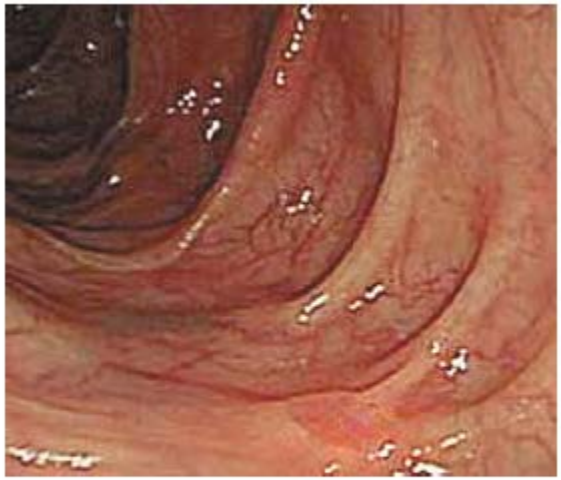


Large bowel: *type 0-IIc + IIa*, unstained, submucosal adenocarcinoma (sm2).

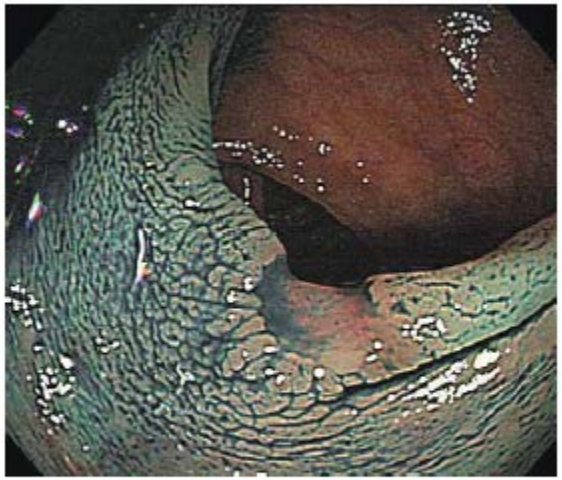
The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 2: examples

- Photo example 6: 0-IIc



Large bowel: *type 0-IIc*, unstained, submucosal adenocarcinoma (sm1a).



Same case chromoendoscopy with indigo carmine.

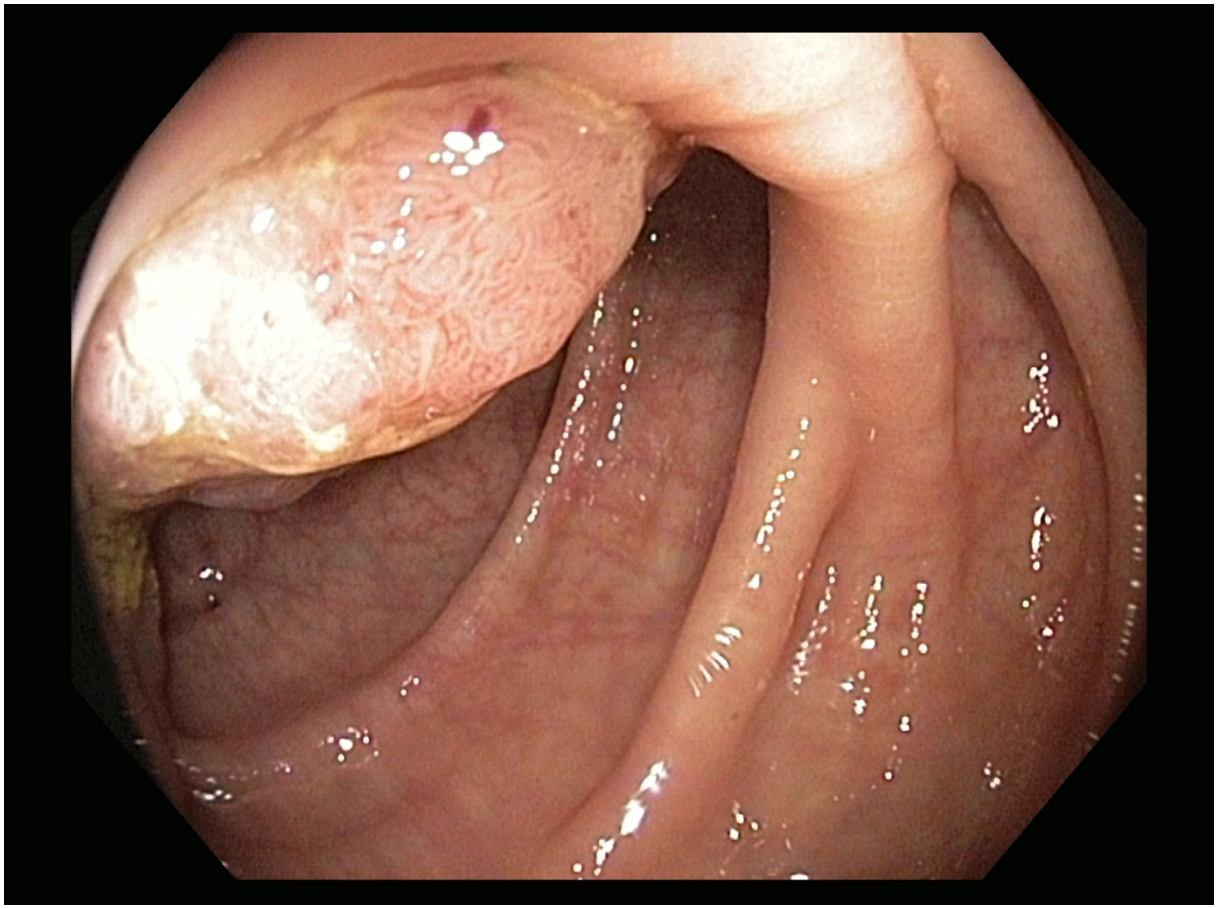
The Paris endoscopic classification of superficial neoplastic lesions: esophagus, stomach, and colon. November 30 to December 1, 2002. Paris Workshop Participants. Volume 58, No. 6 (Suppl), 2003 Gastrointestinal Endoscopy.

Step 3: training

- Next you will see 32 photographs of polyps
- Please classify the morphology of these polyps according to the Paris classification on the Training Assessment Form (word document in the WeTransfer file)
- Please do not look at the Feedback Form before you filled in the Assessment form

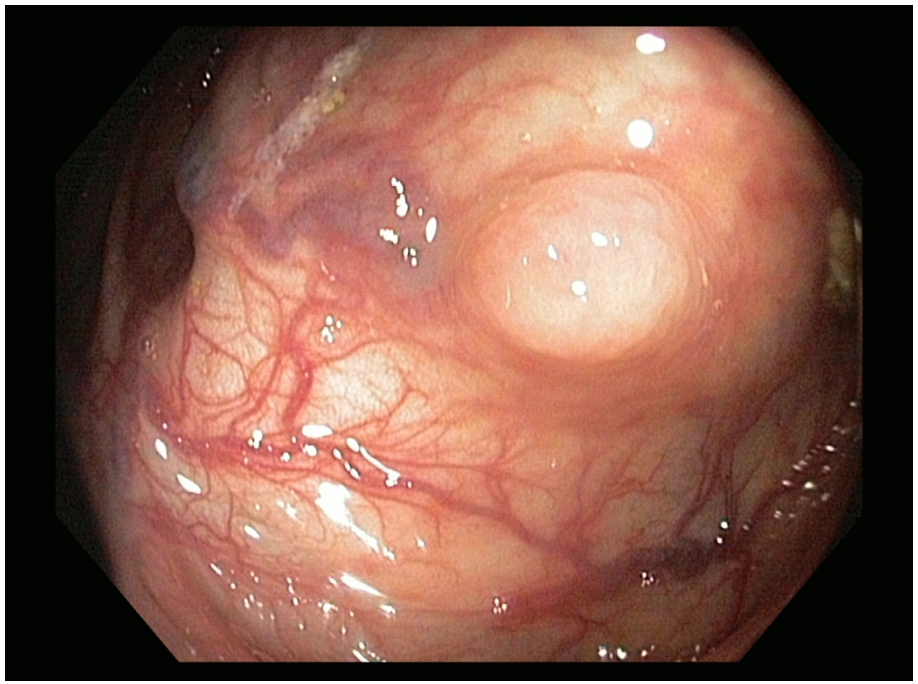
Step 3: training

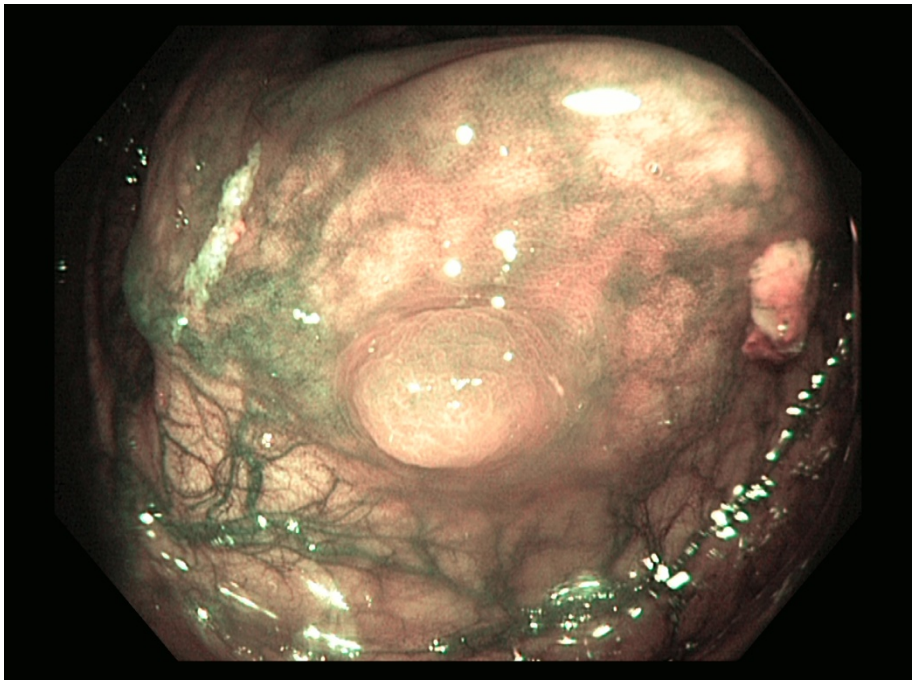
Photo 1



Step 3: training

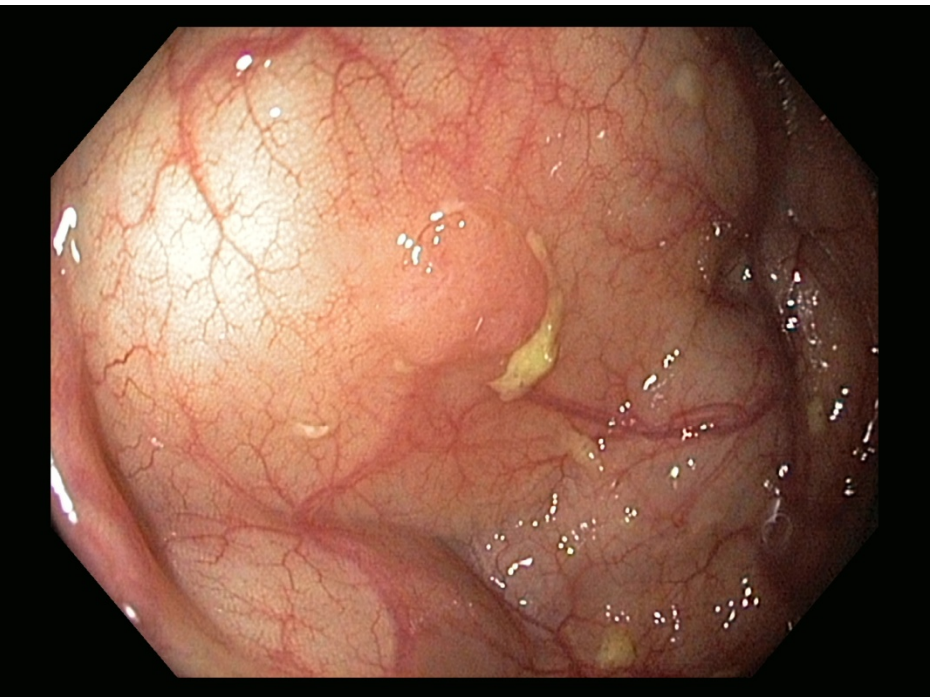
Photo 2

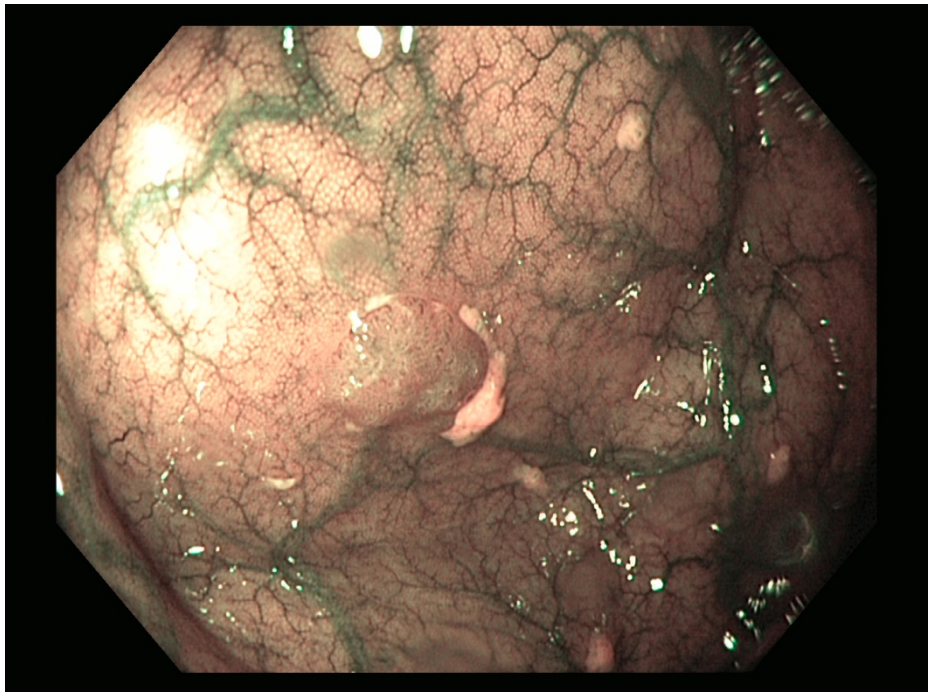




Step 3: training

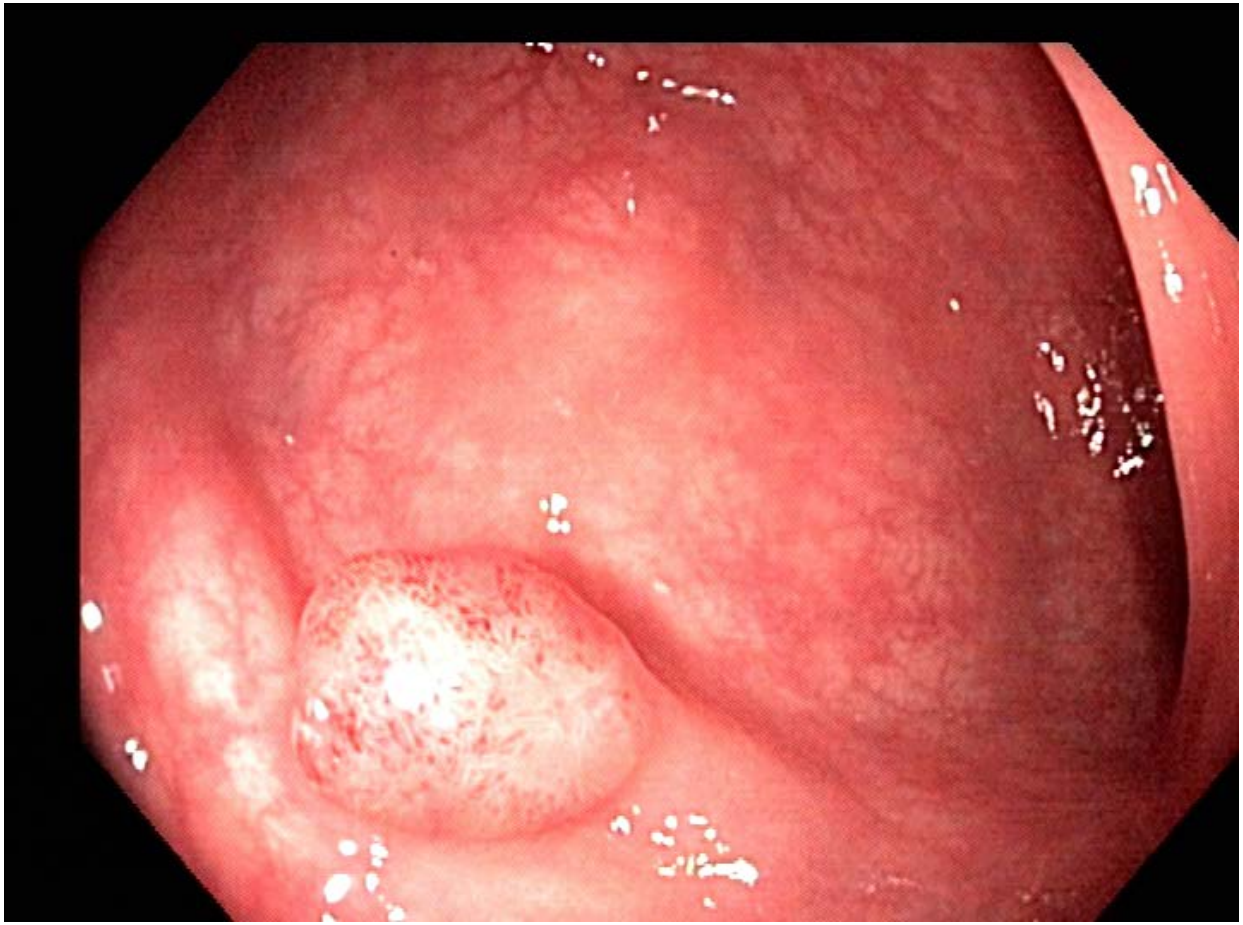
Photo 3





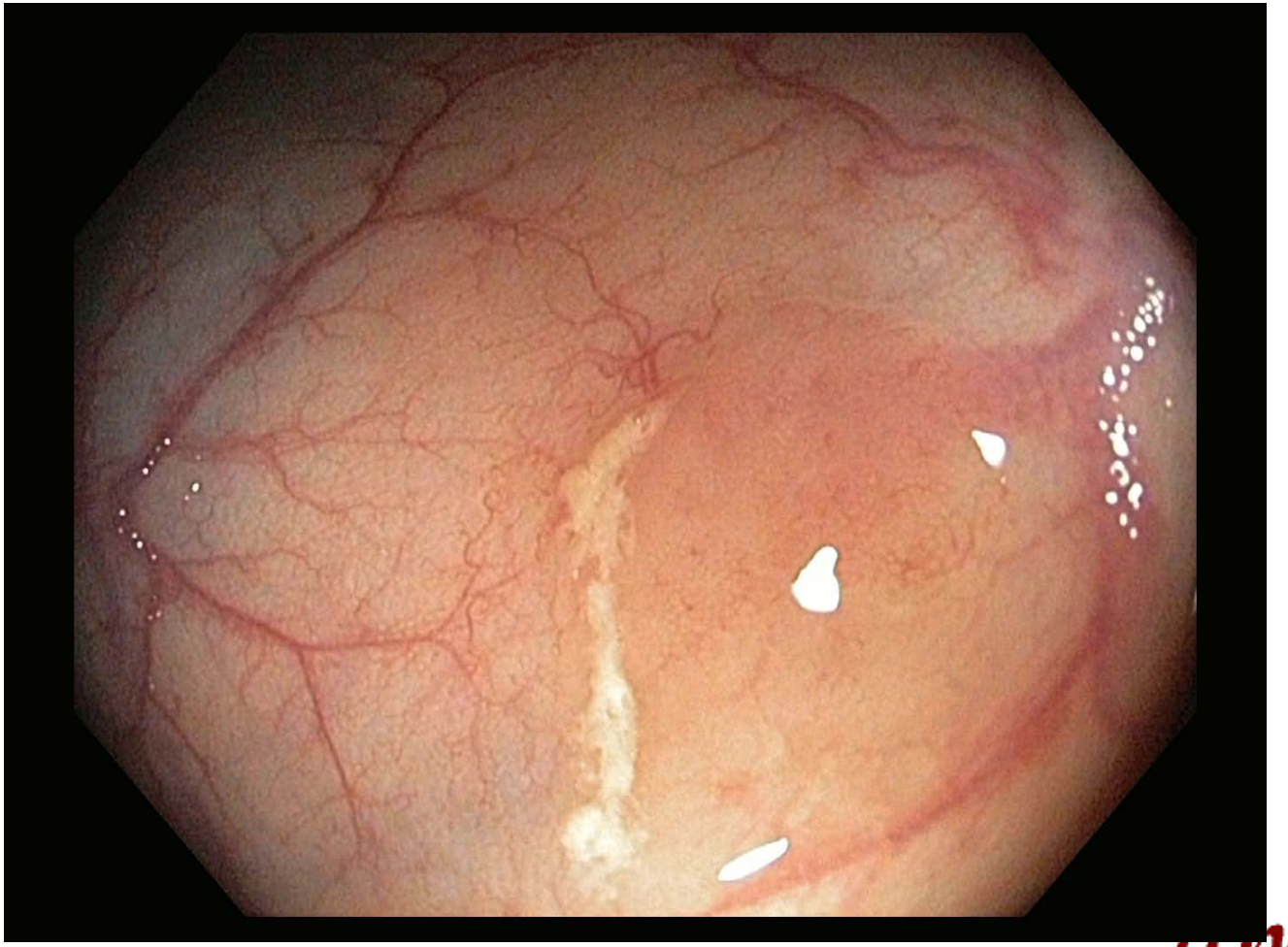
Step 3: training

Photo 4



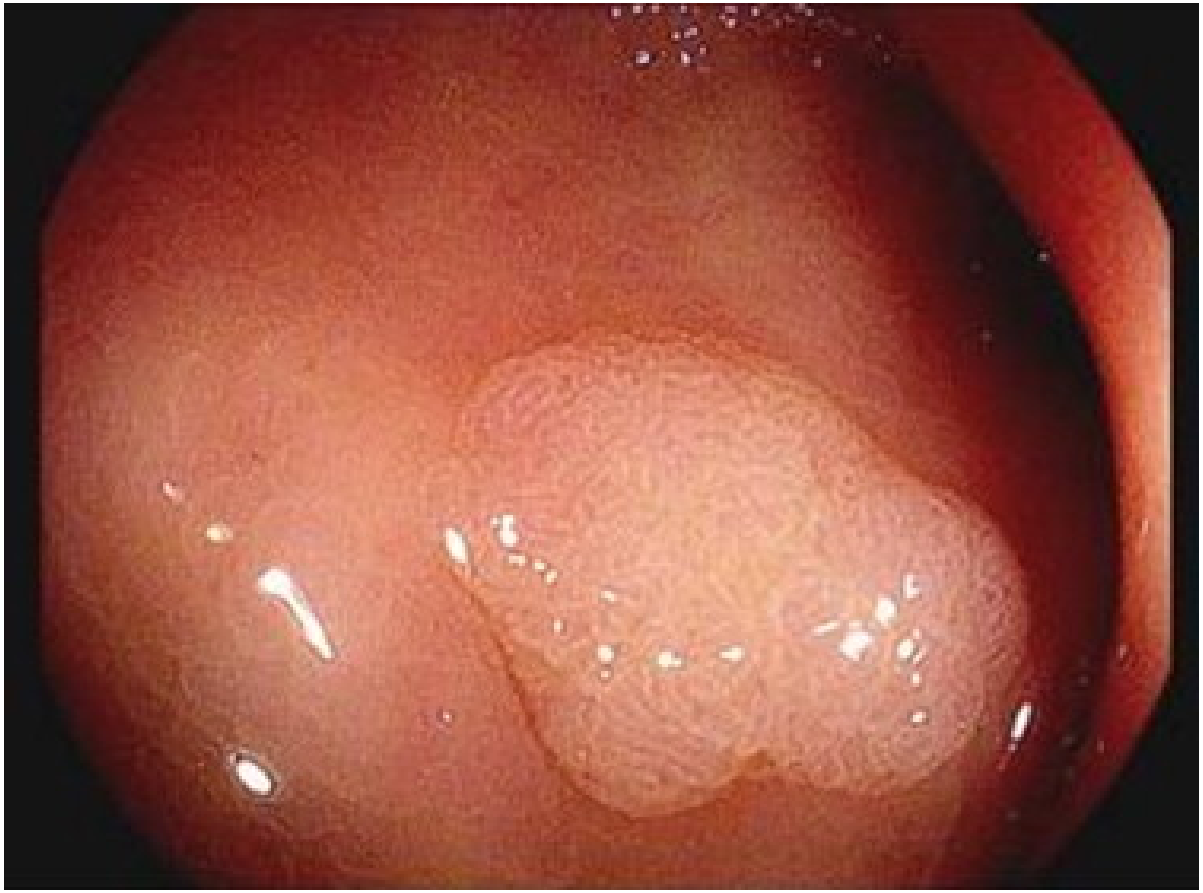
Step 3: training

Photo 5



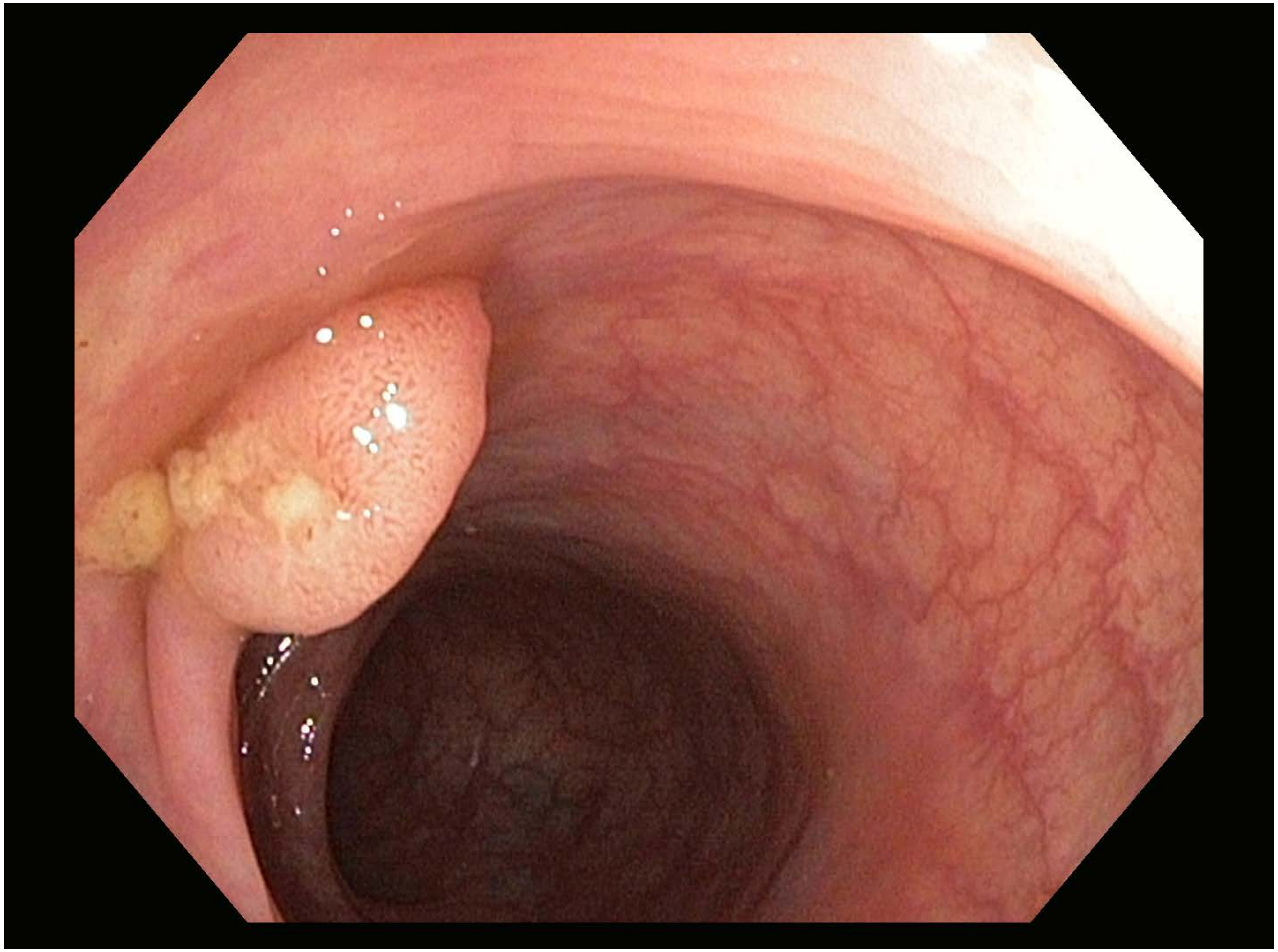
Step 3: training

Photo 6



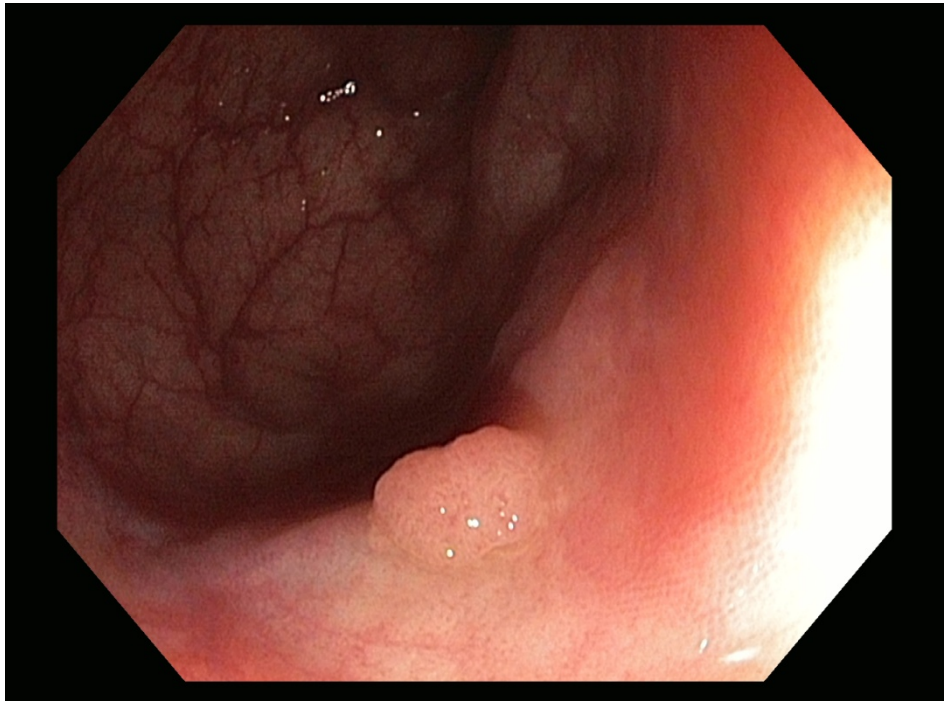
Step 3: training

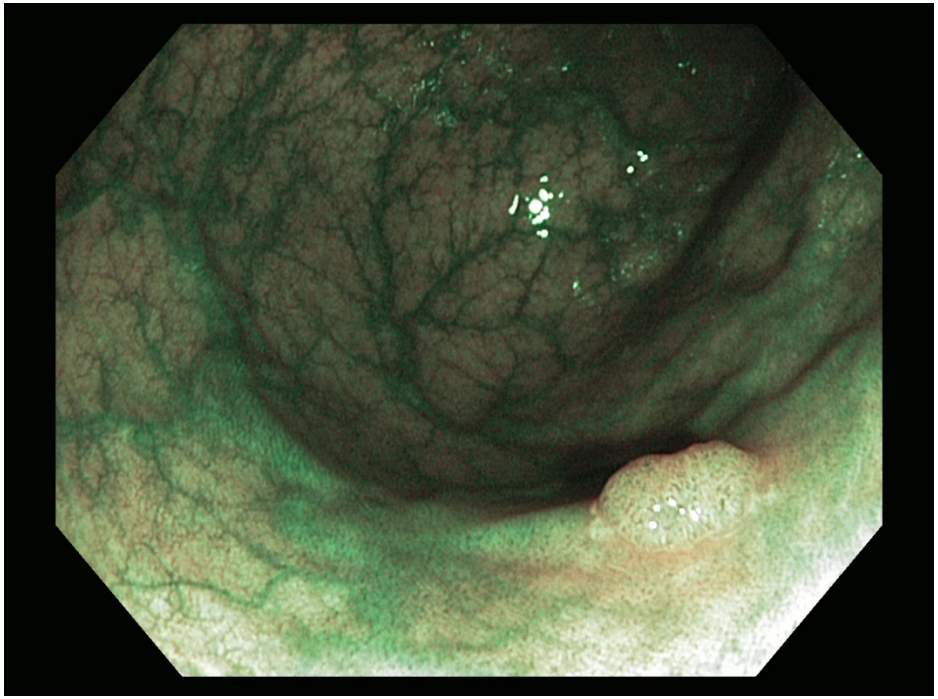
Photo 7



Step 3: training

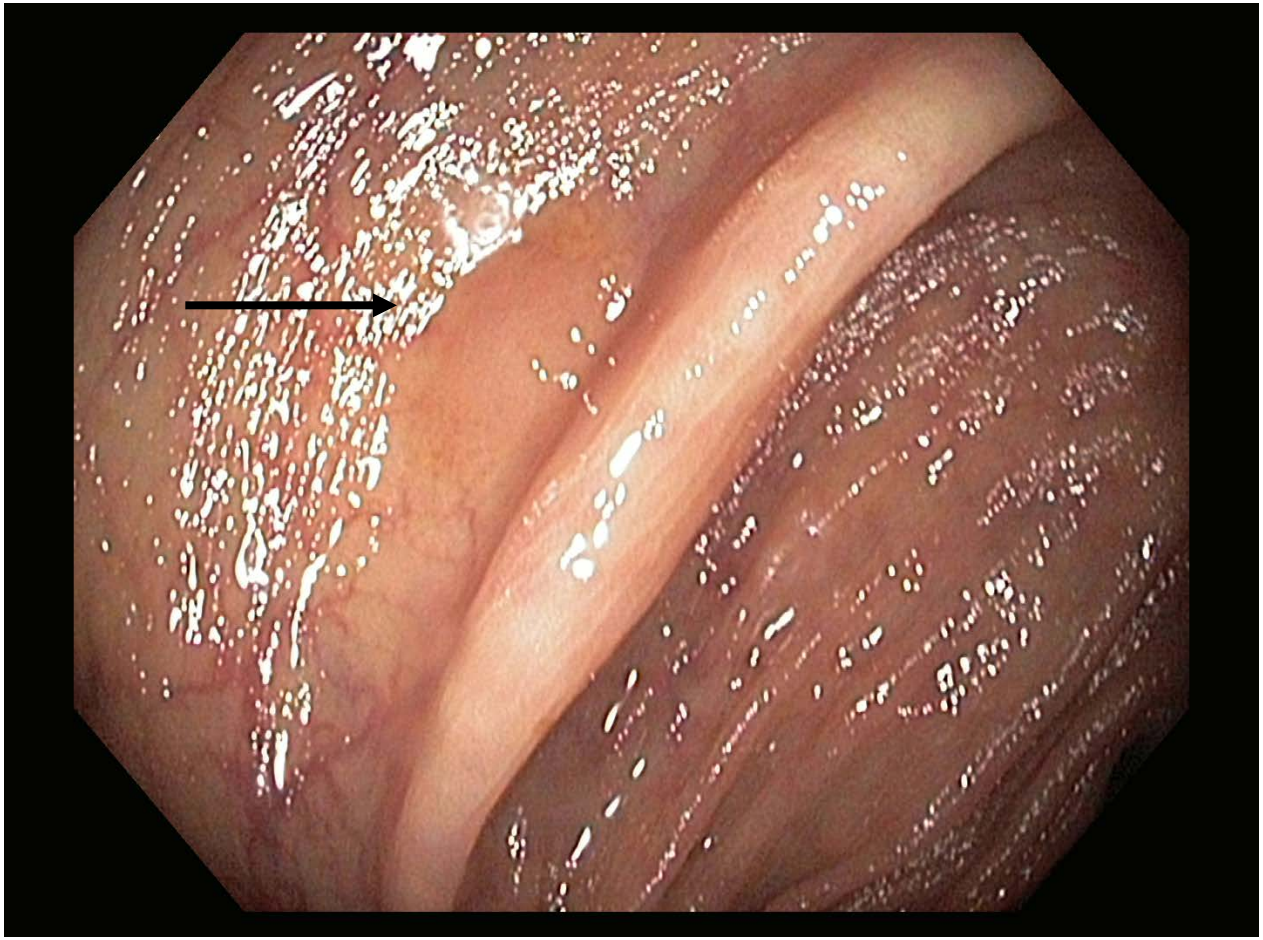
Photo 8





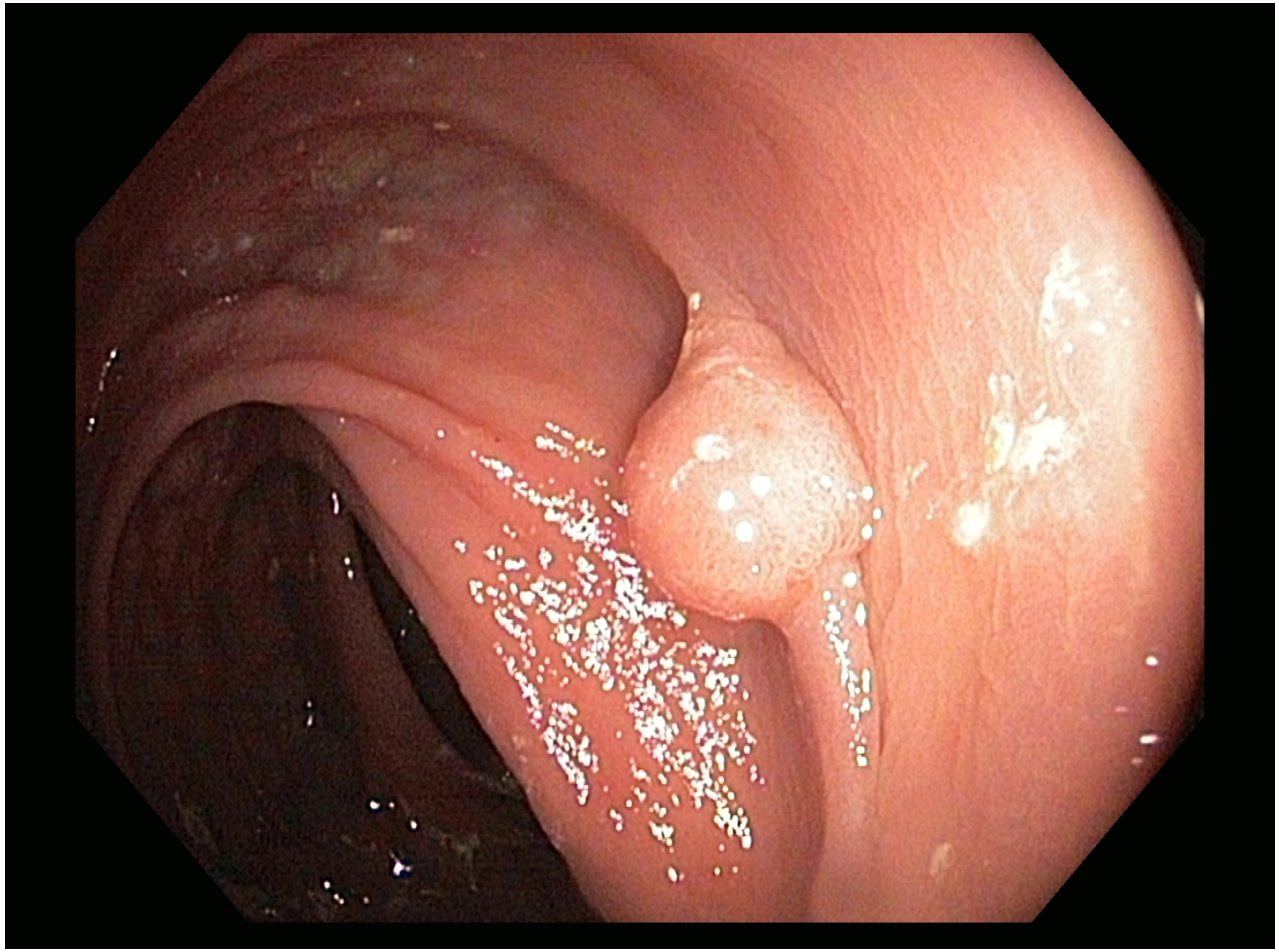
Step 3: training

Photo 9



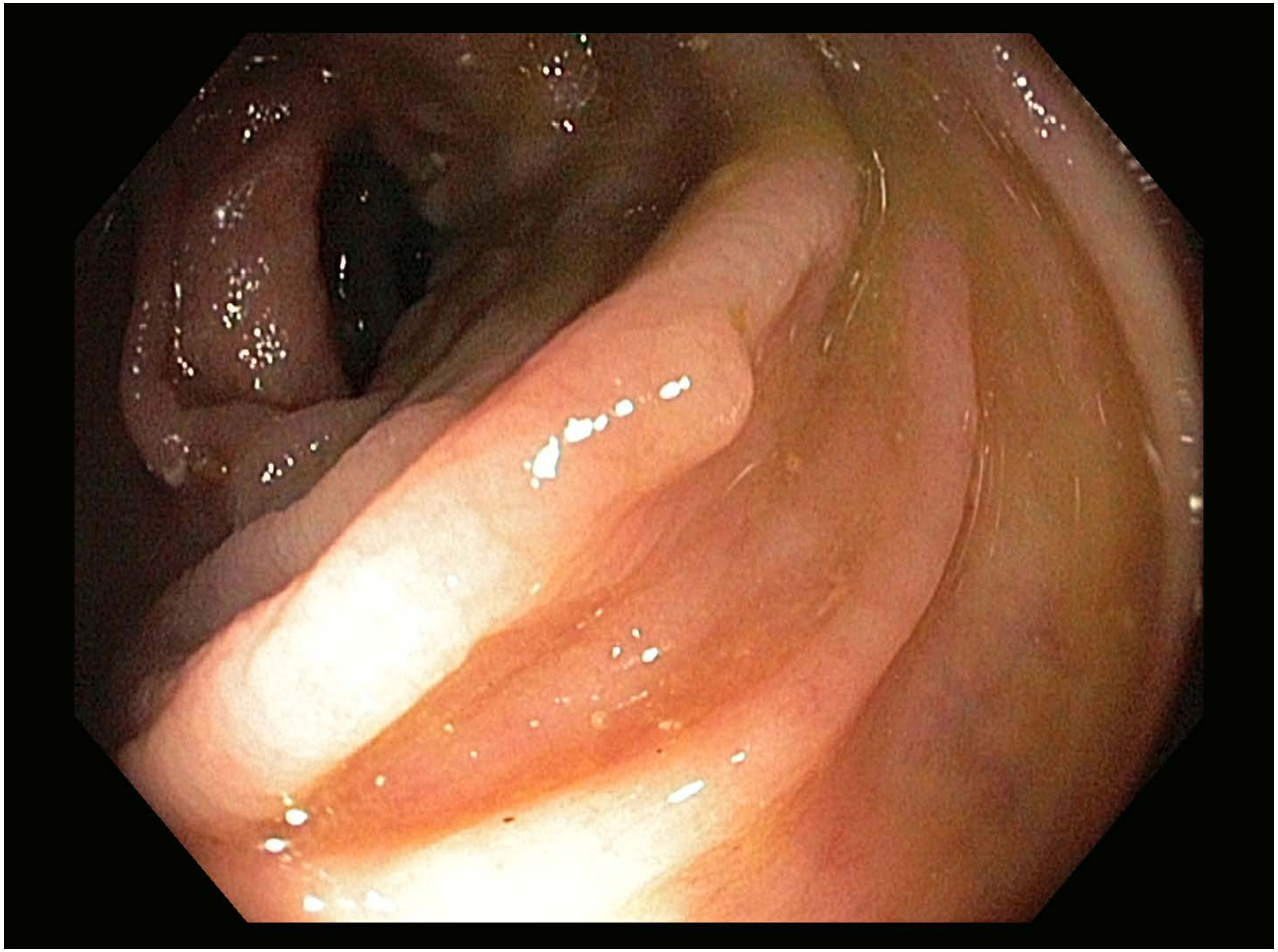
Step 3: training

Photo 10



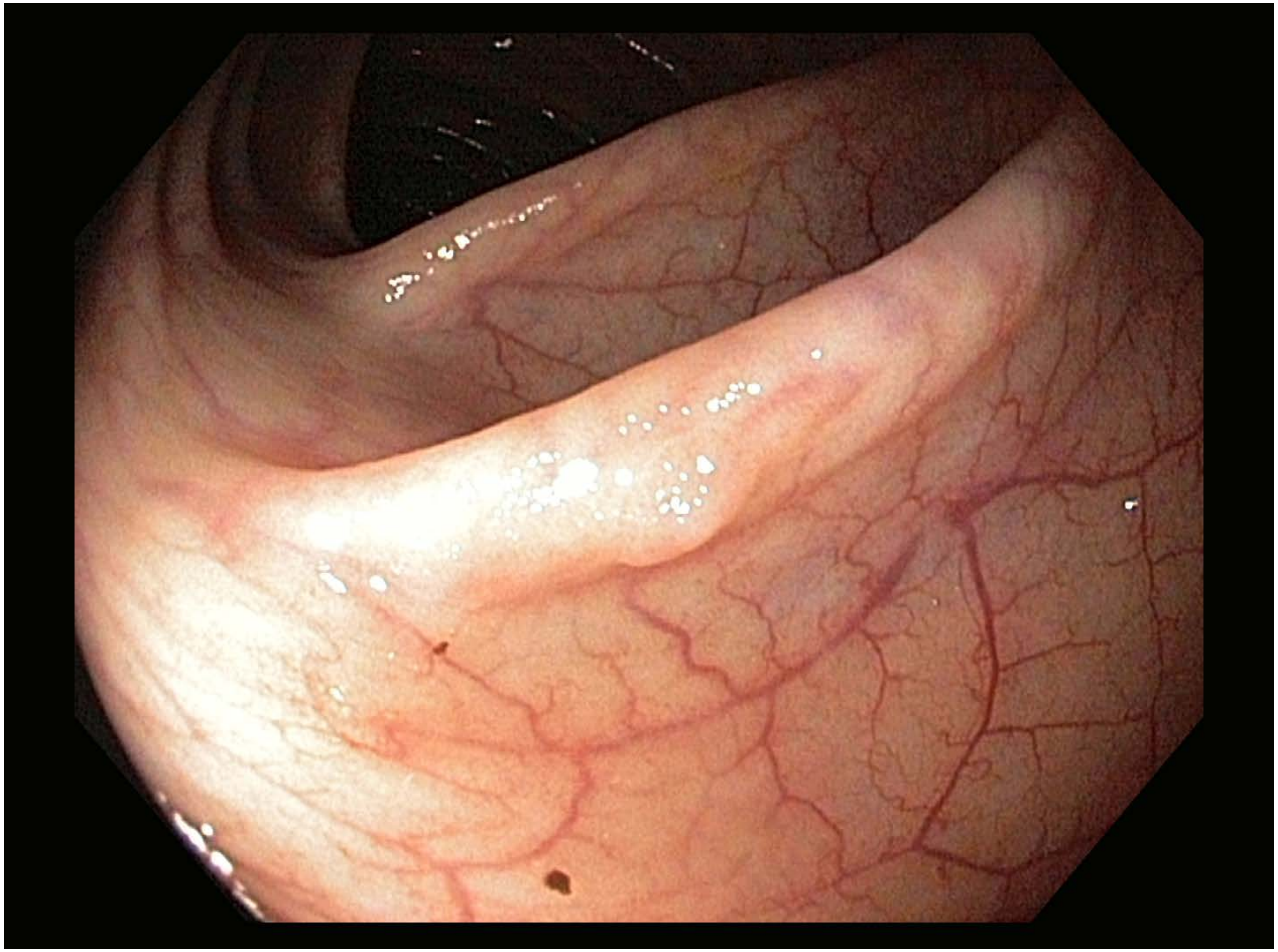
Step 3: training

Photo 11



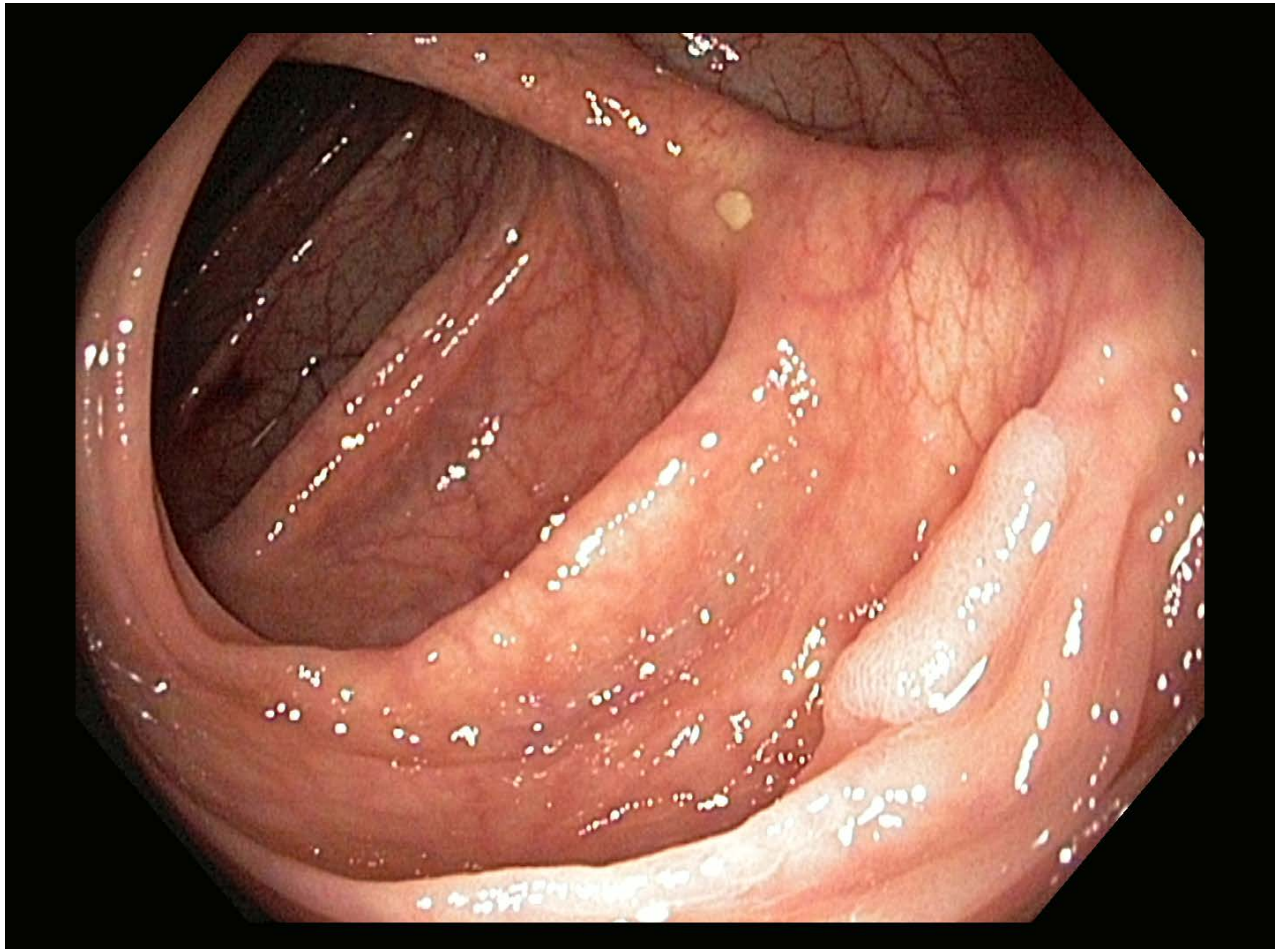
Step 3: training

Photo 12



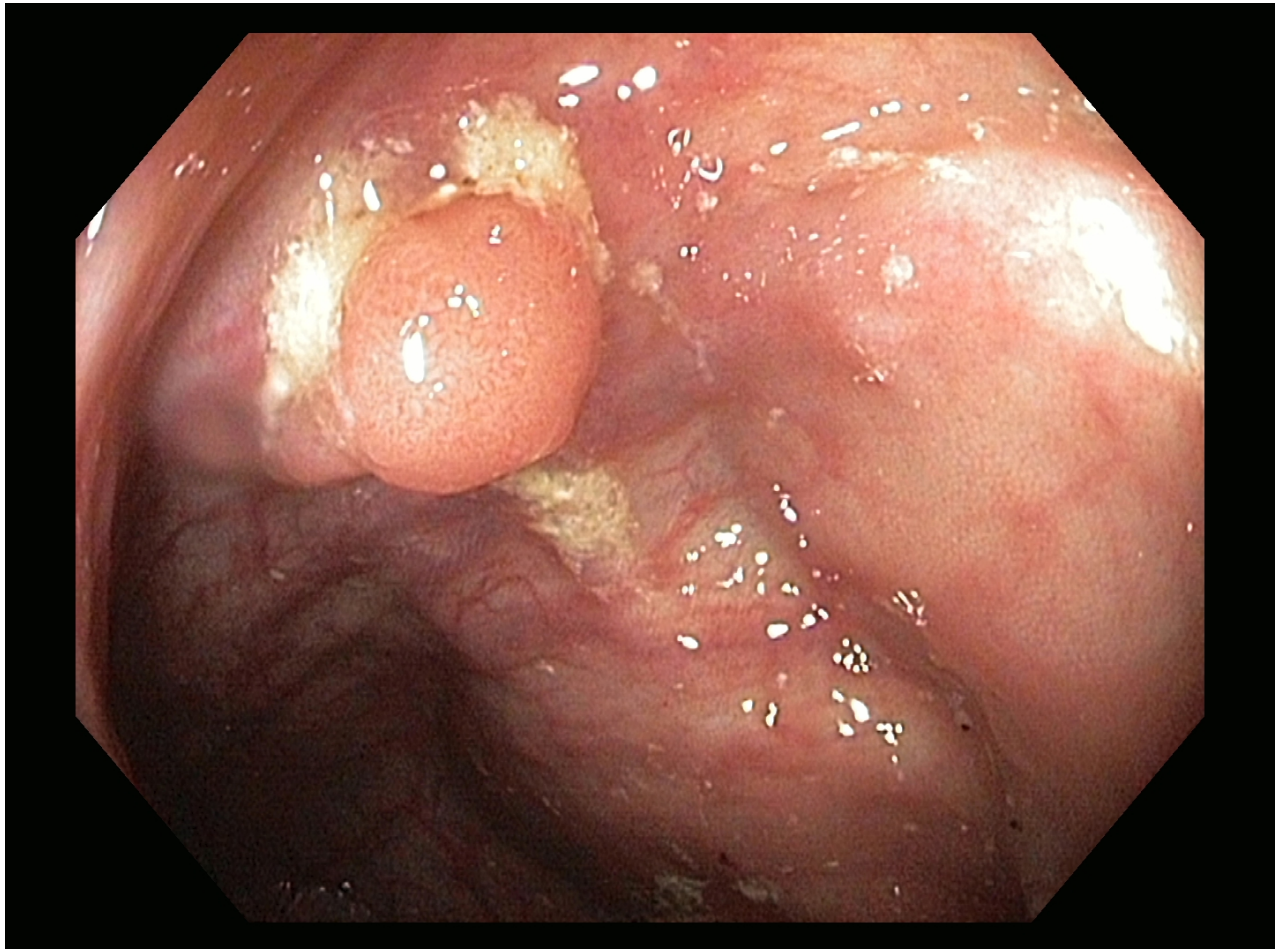
Step 3: training

Photo 13



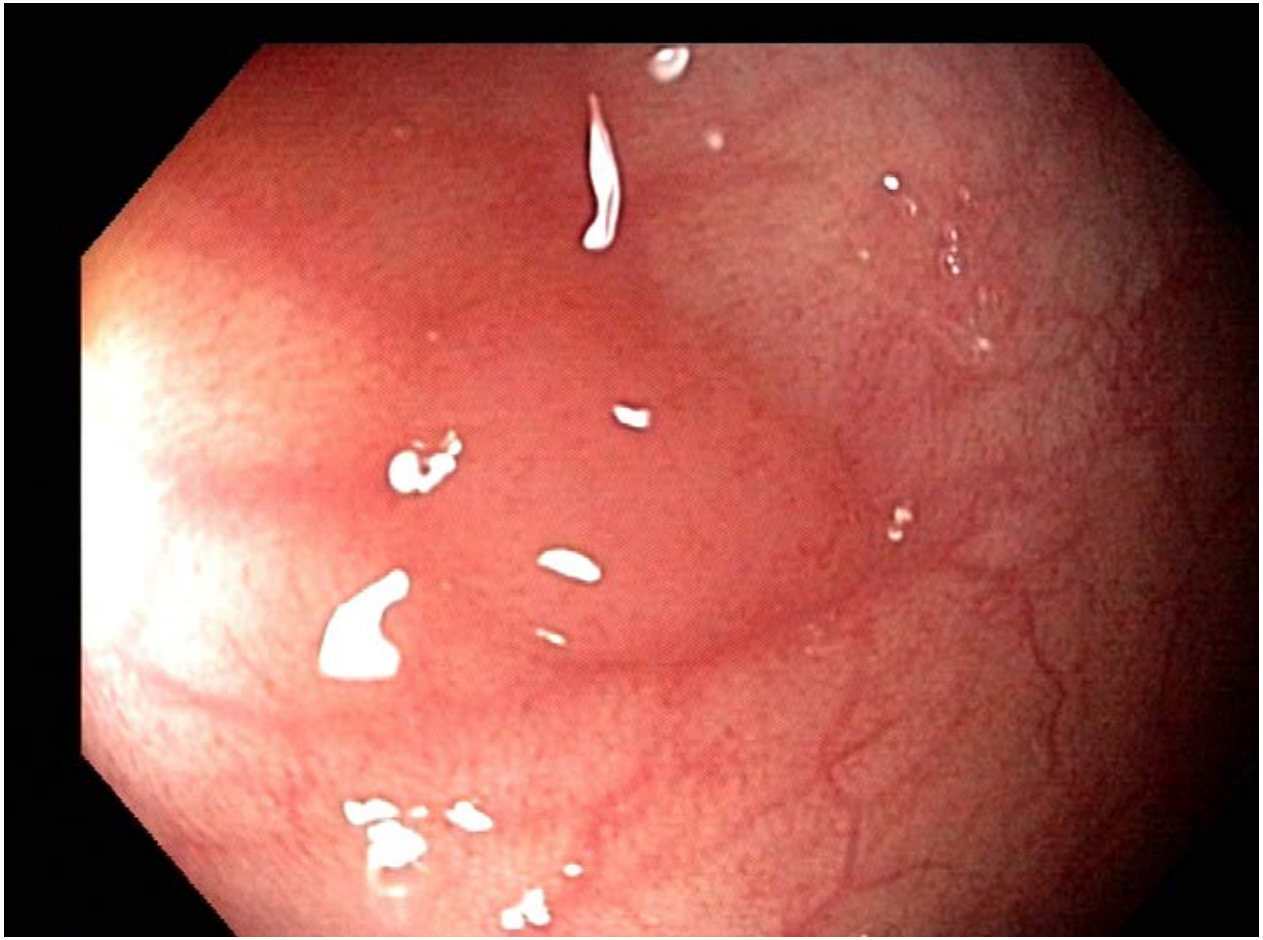
Step 3: training

Photo 14



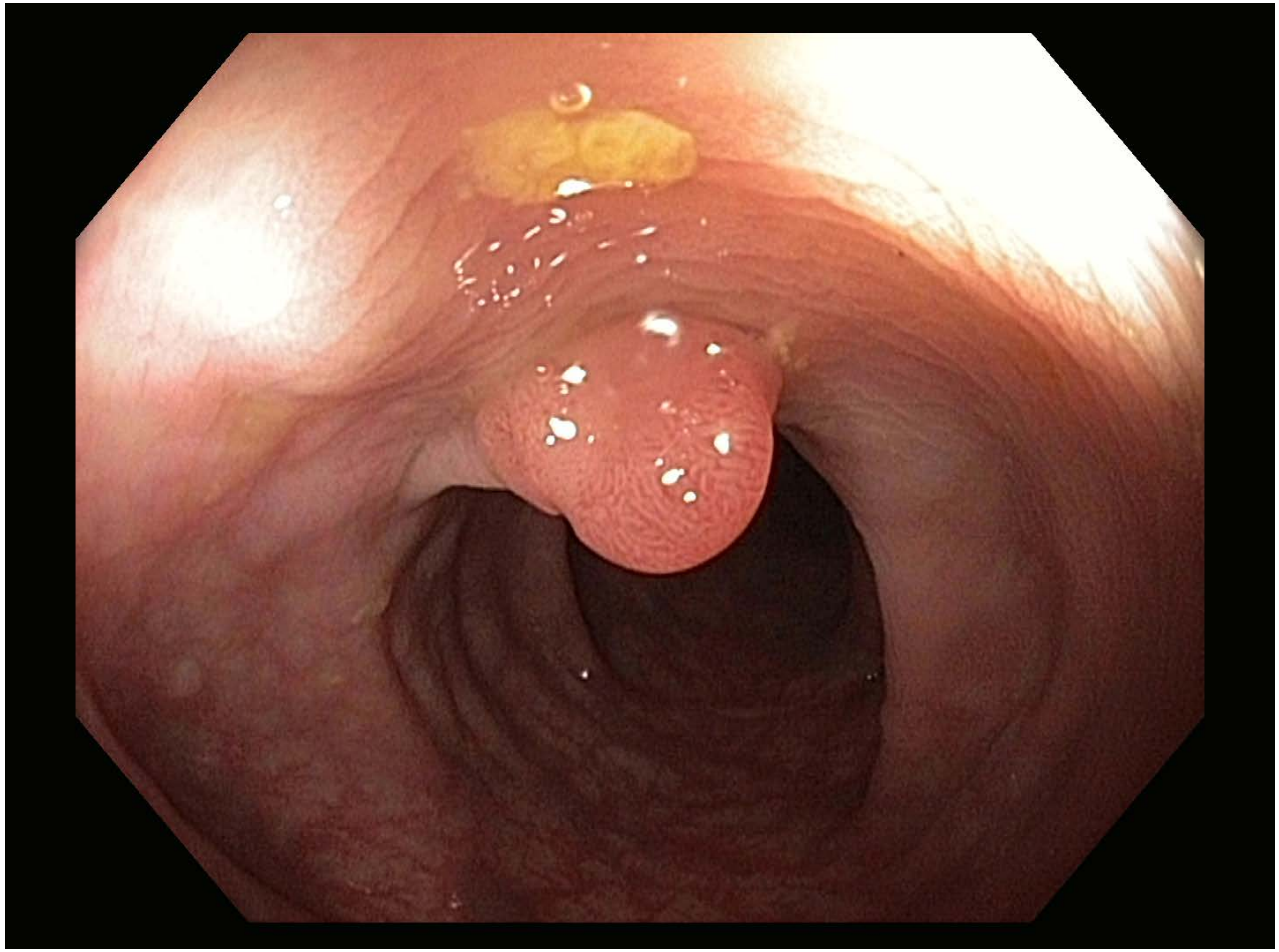
Step 3: training

Photo 15



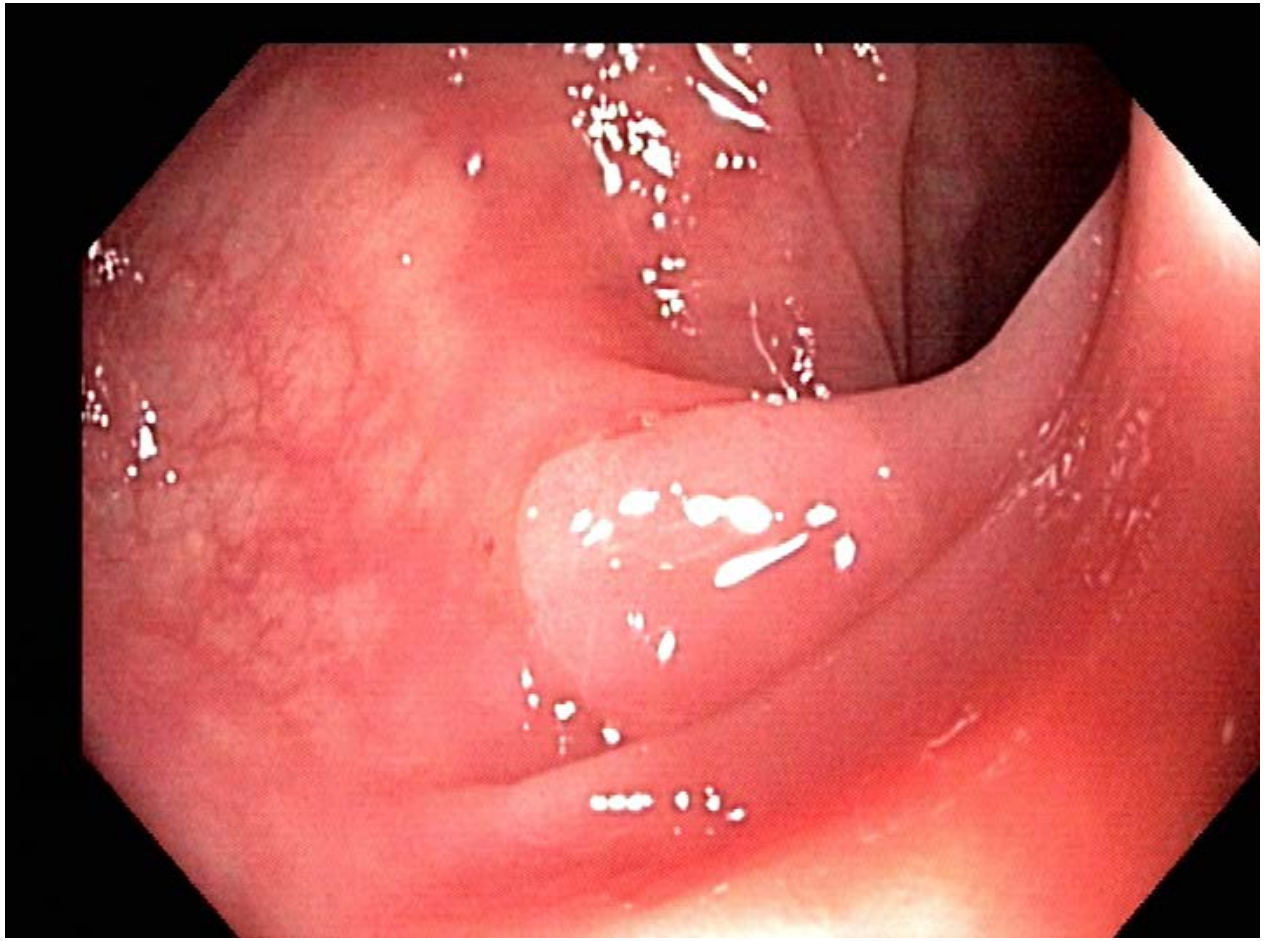
Step 3: training

Photo 16



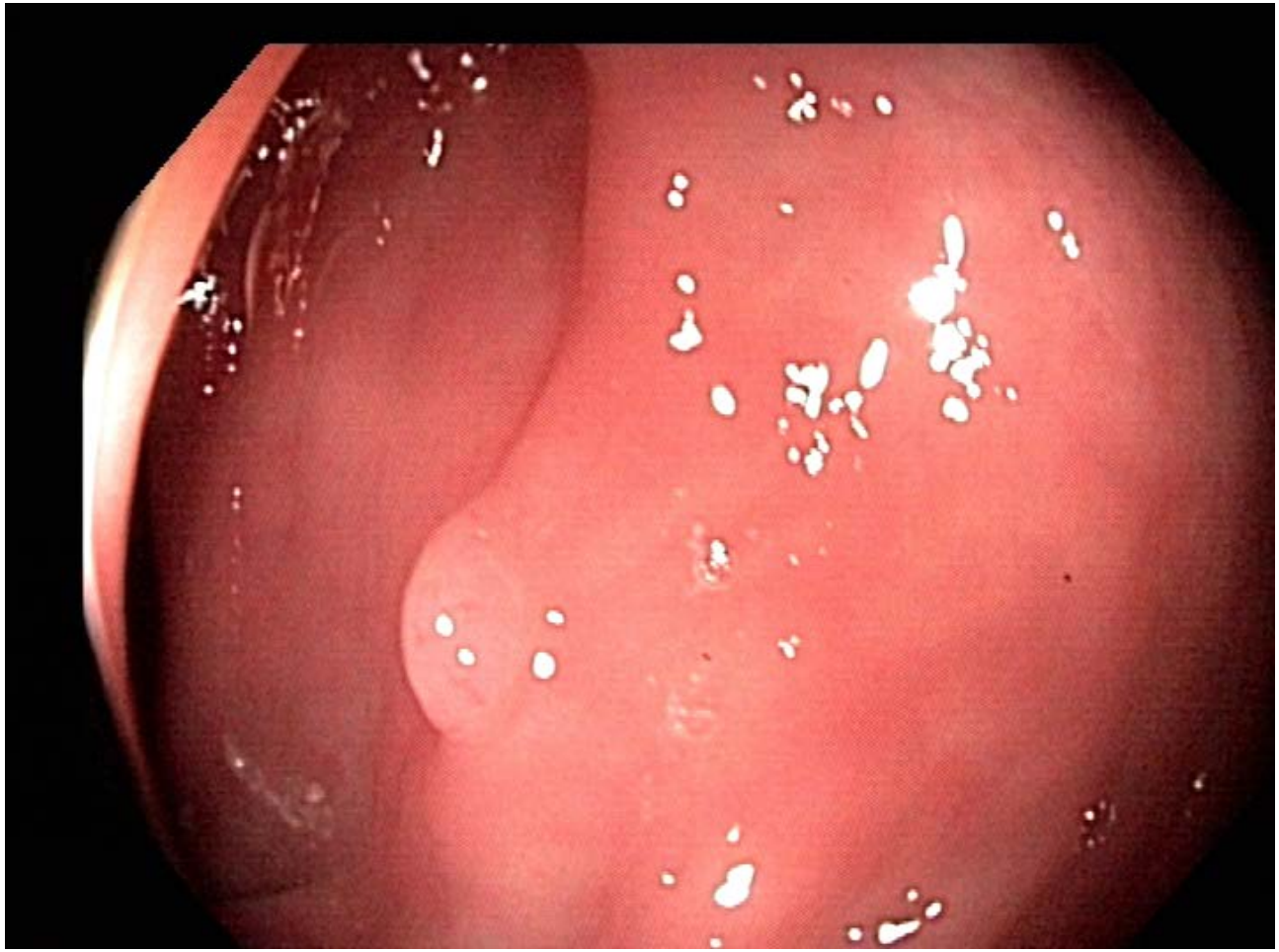
Step 3: training

Photo 17



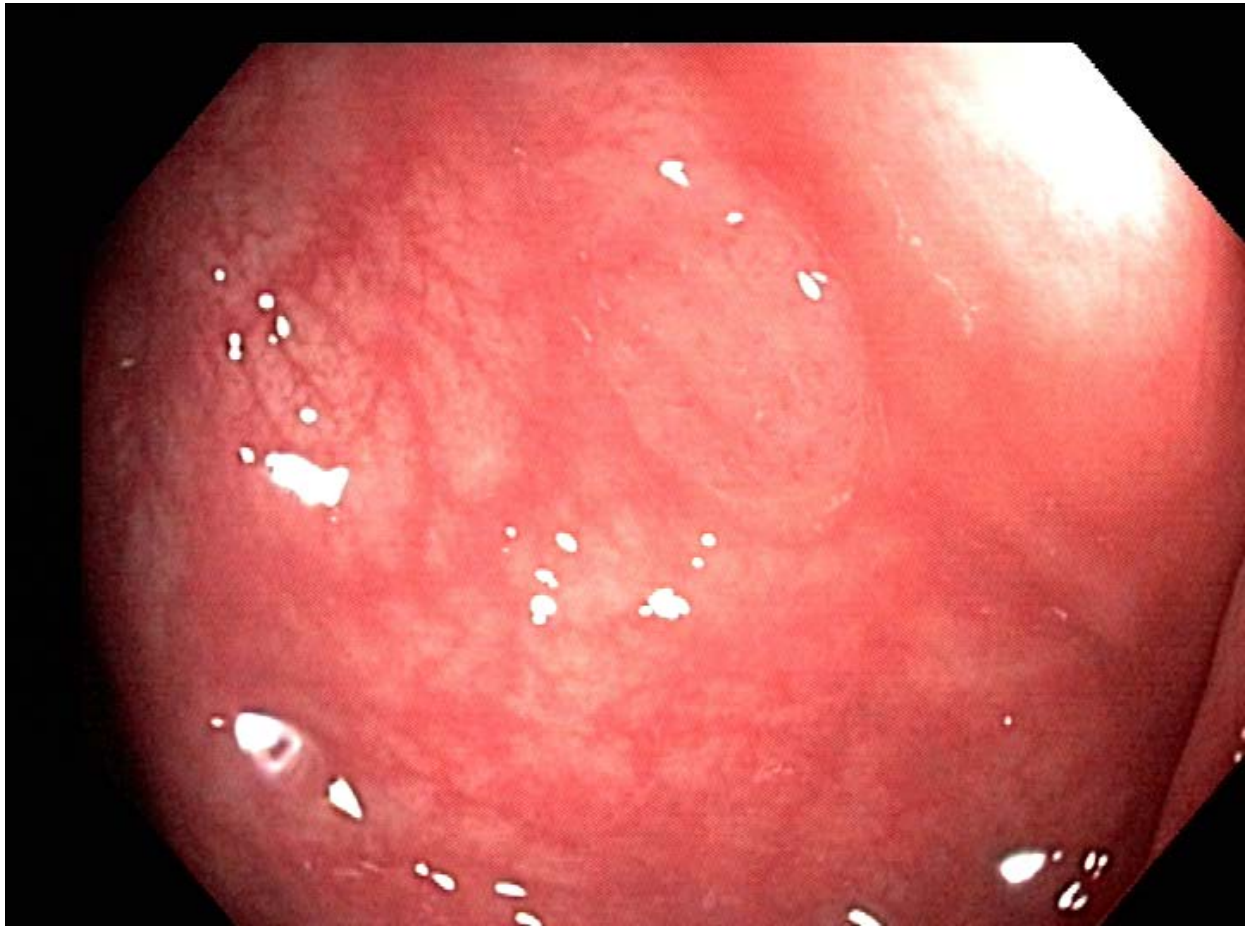
Step 3: training

Photo 18



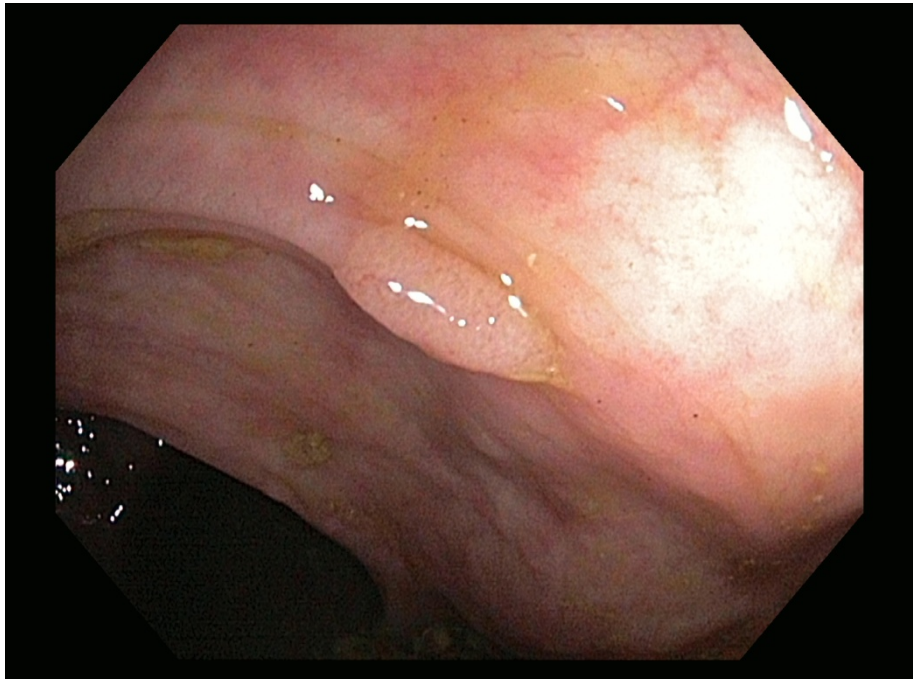
Step 3: training

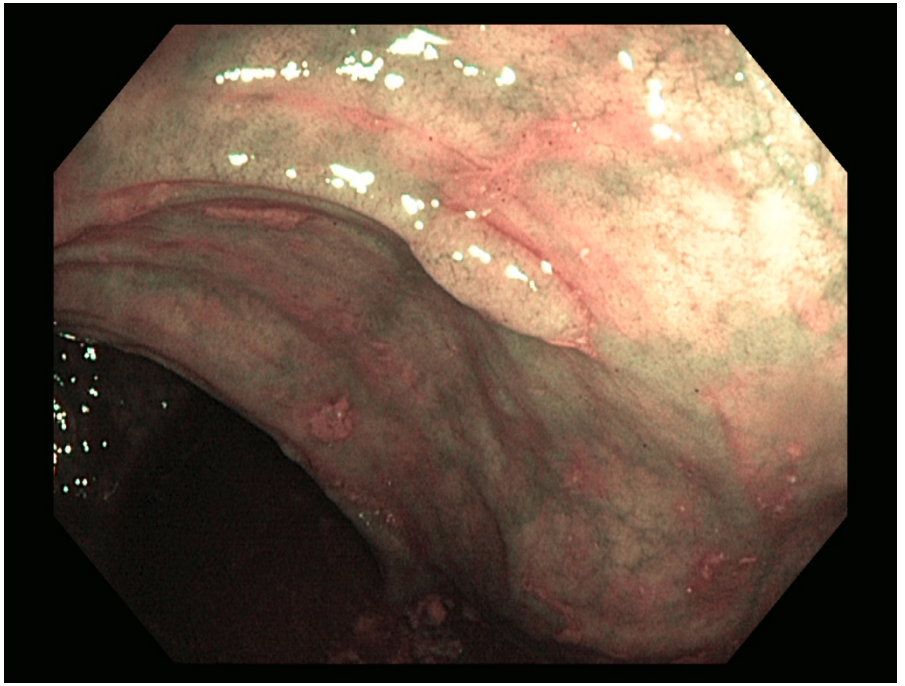
Photo 19



Step 3: training

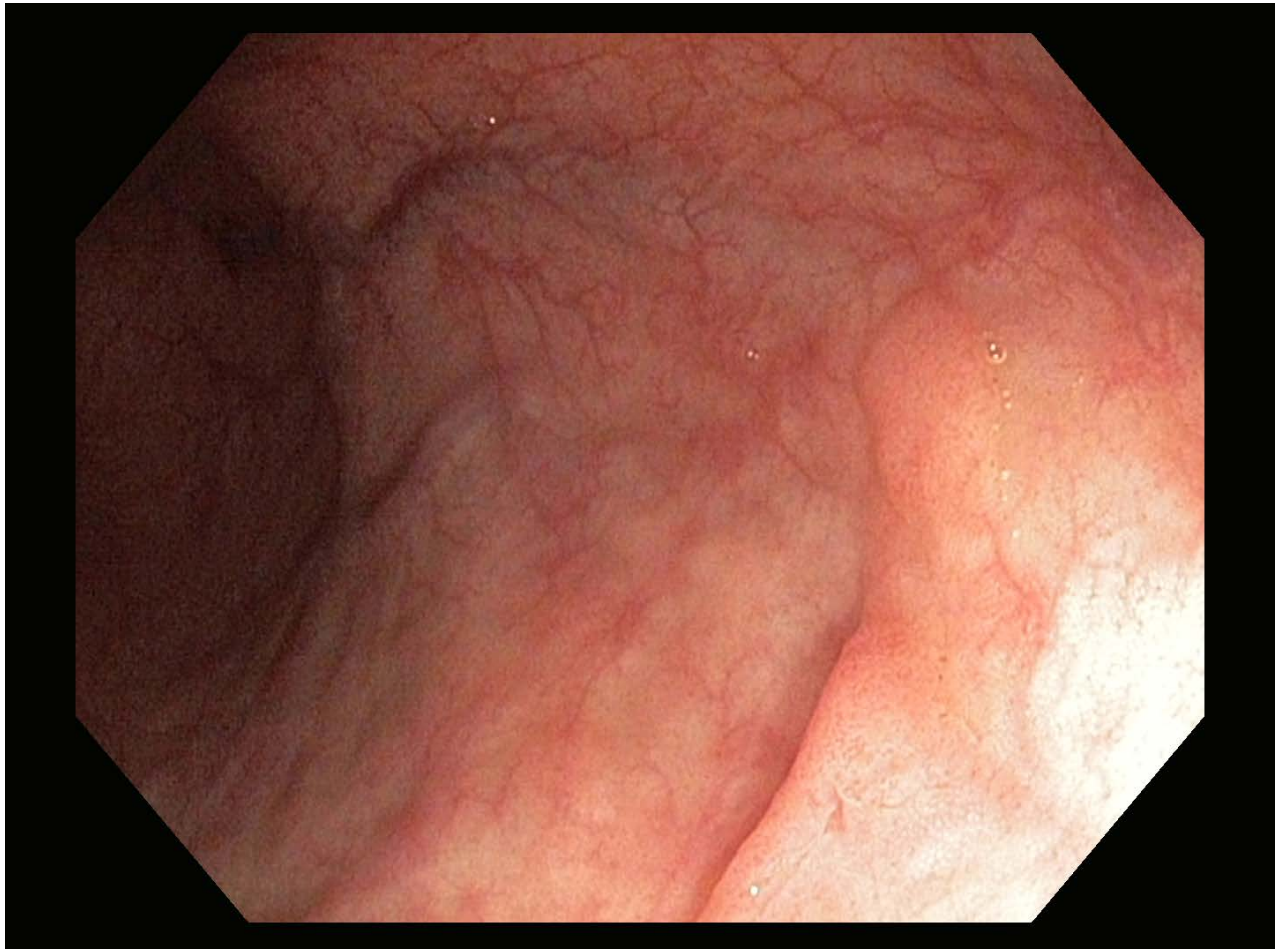
Photo 20





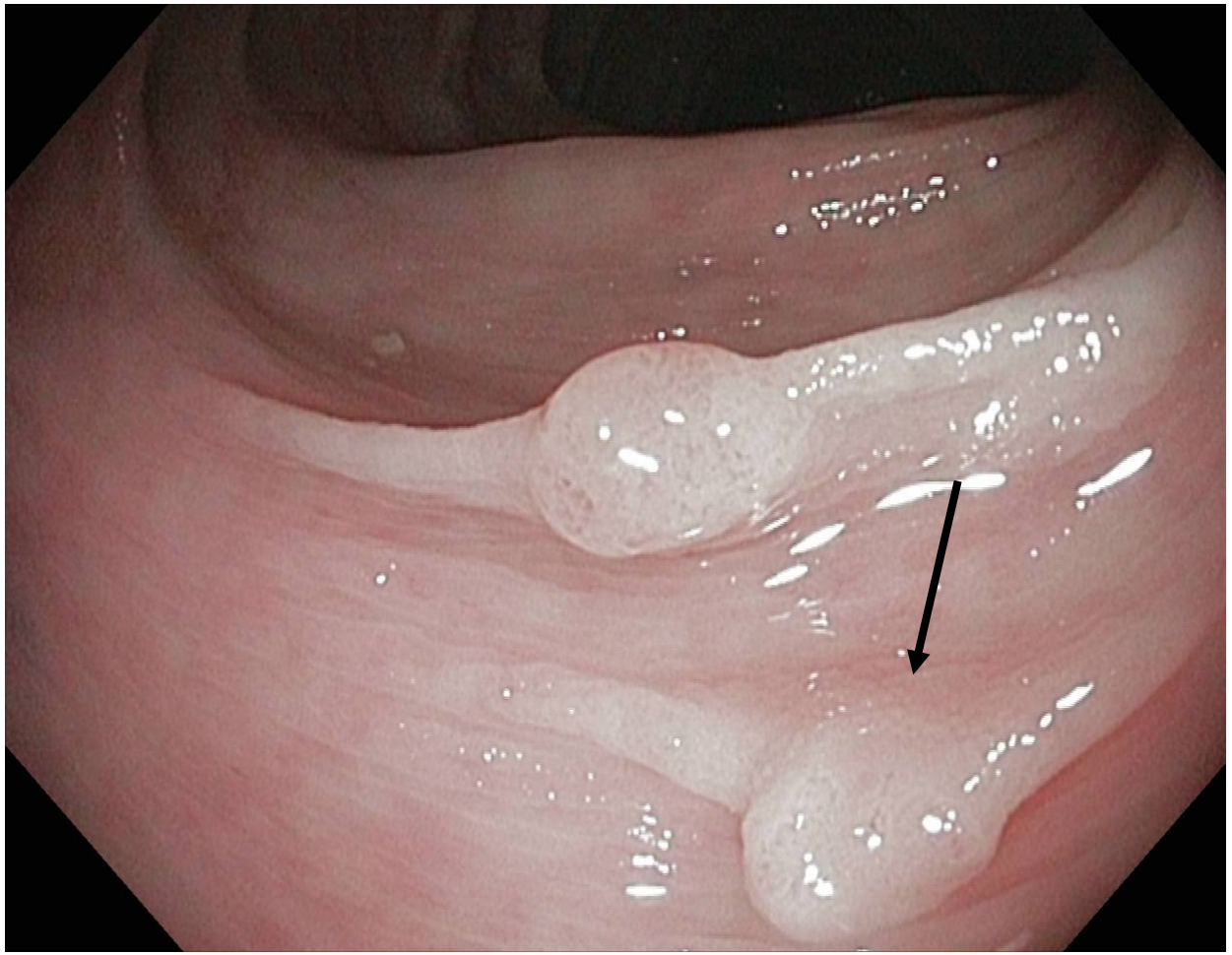
Step 3: training

Photo 21



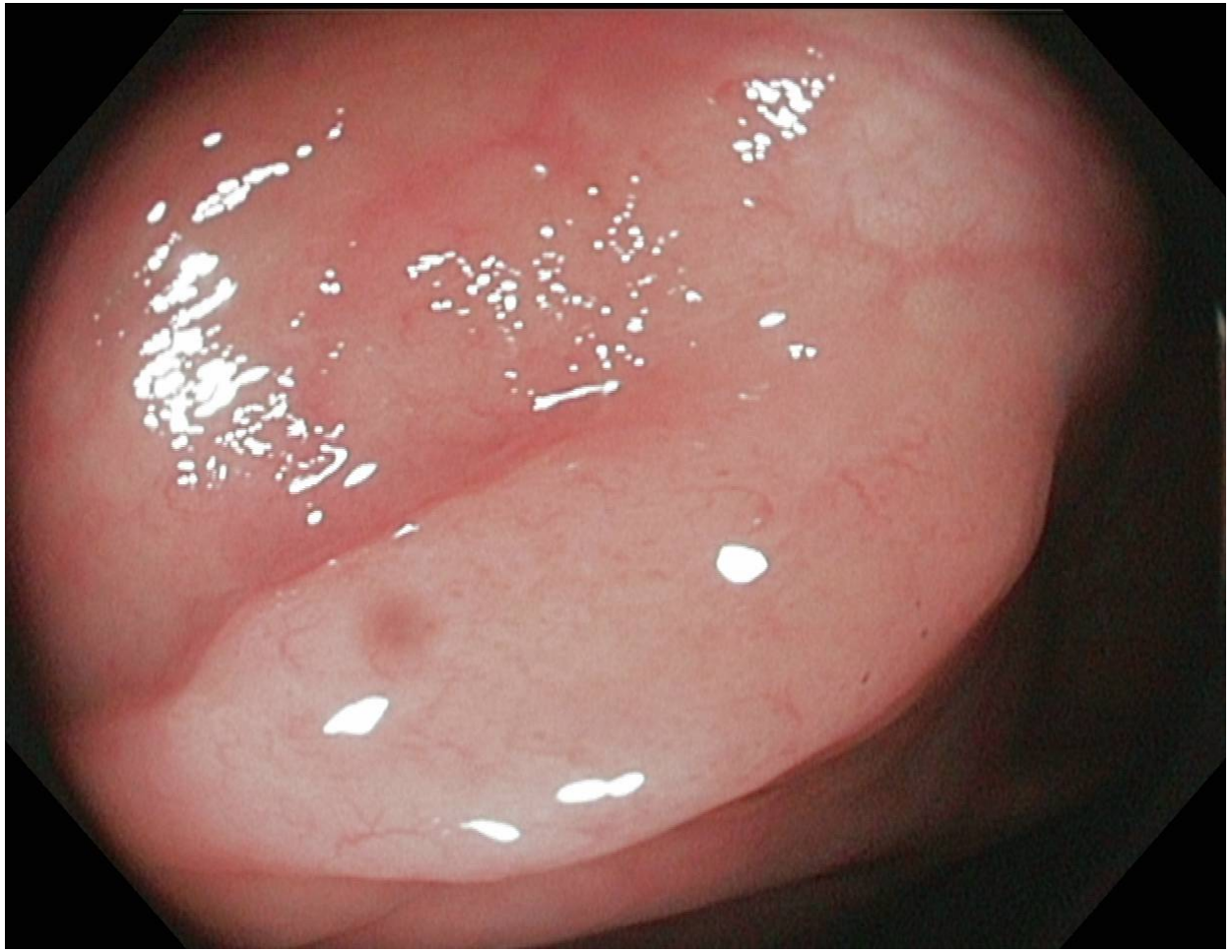
Step 3: training

Photo 22



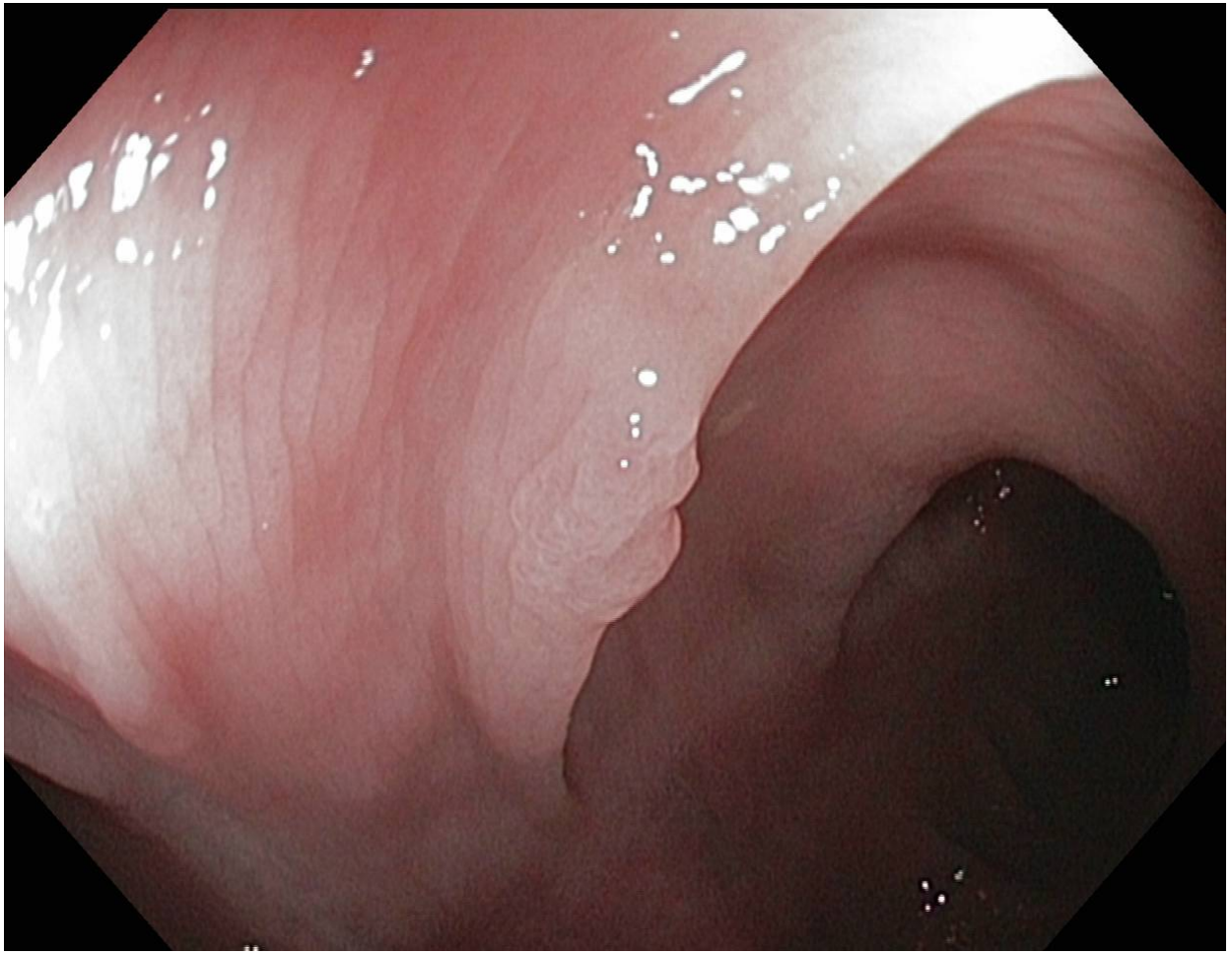
Step 3: training

Photo 23



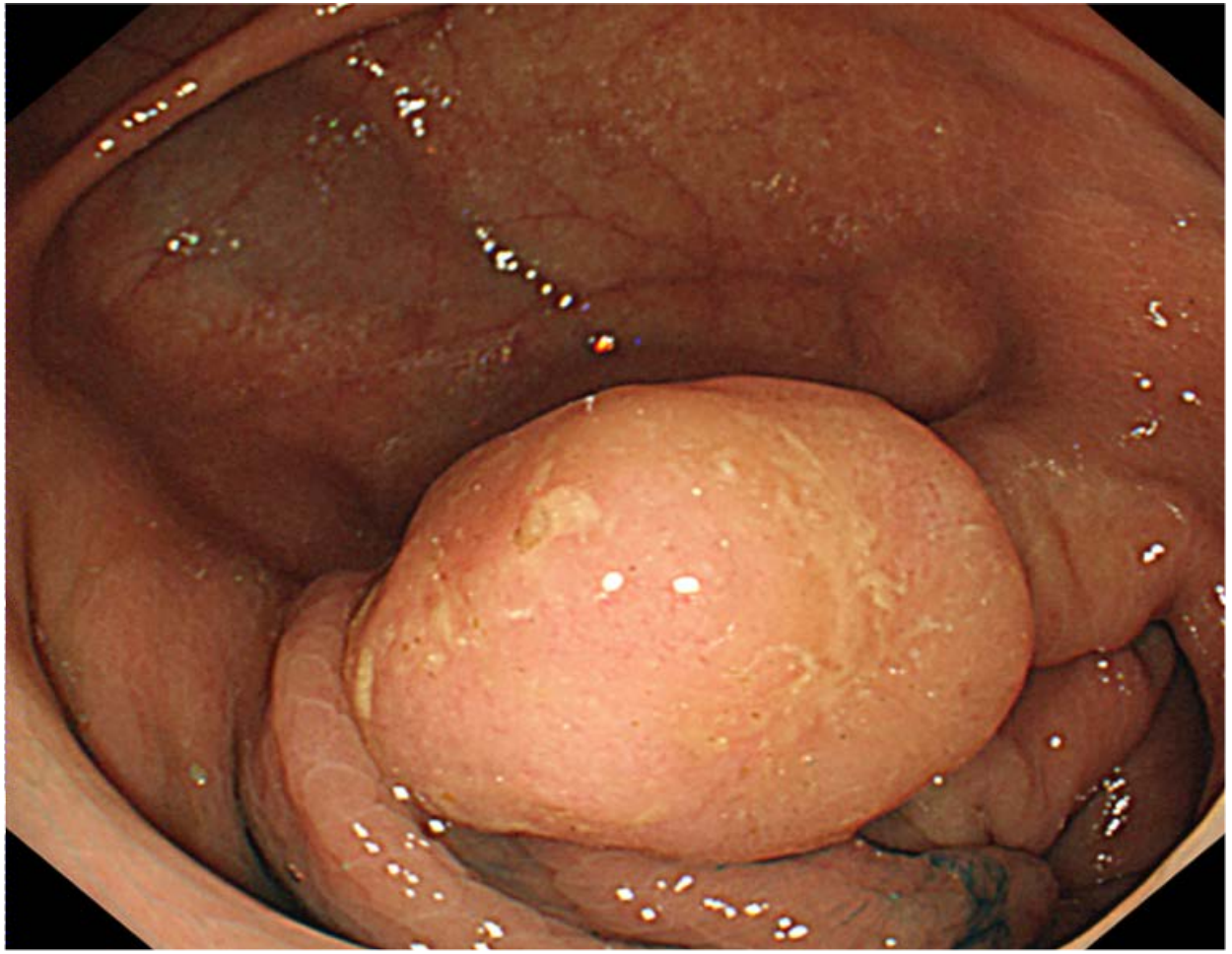
Step 3: training

Photo 24



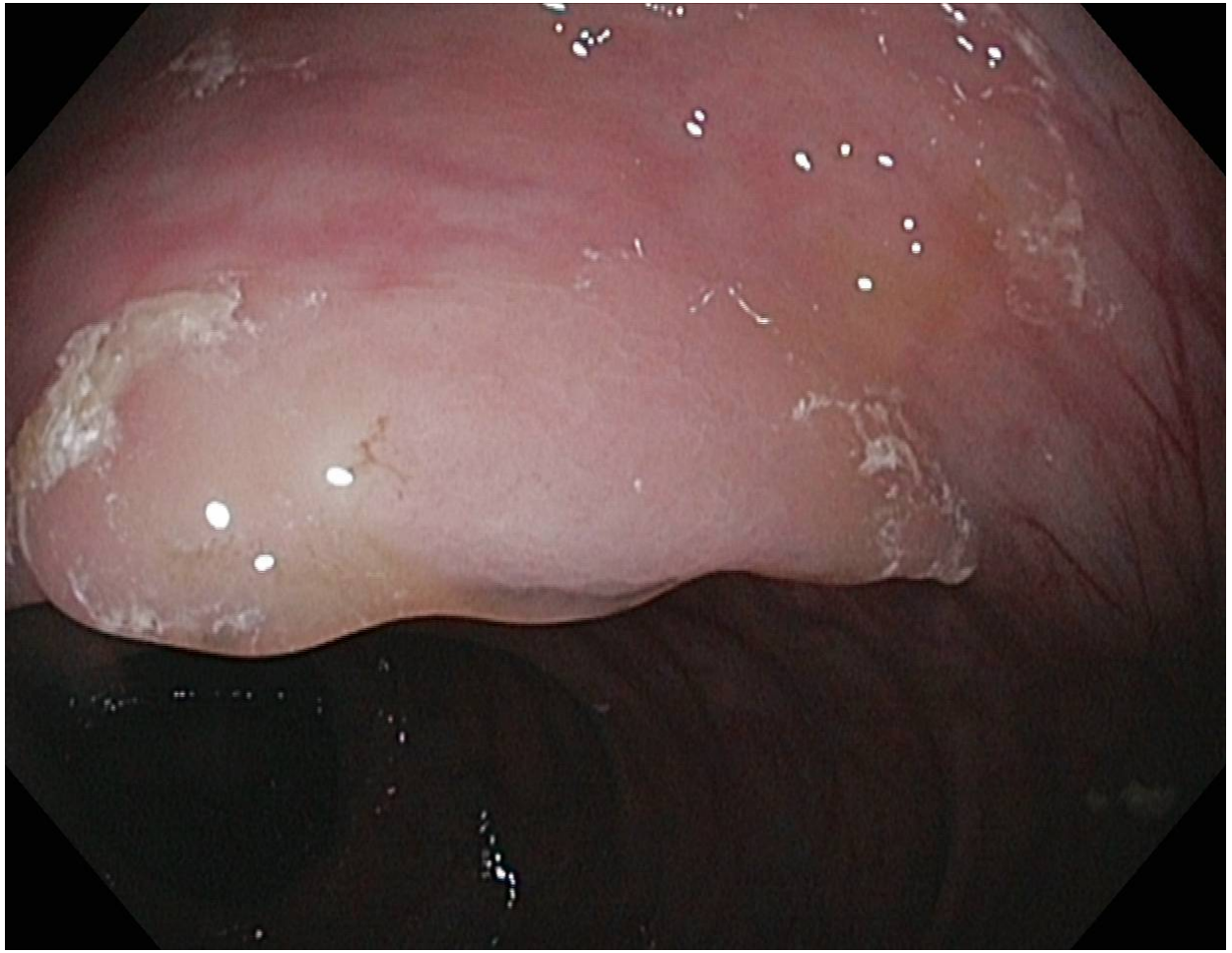
Step 3: training

Photo 25



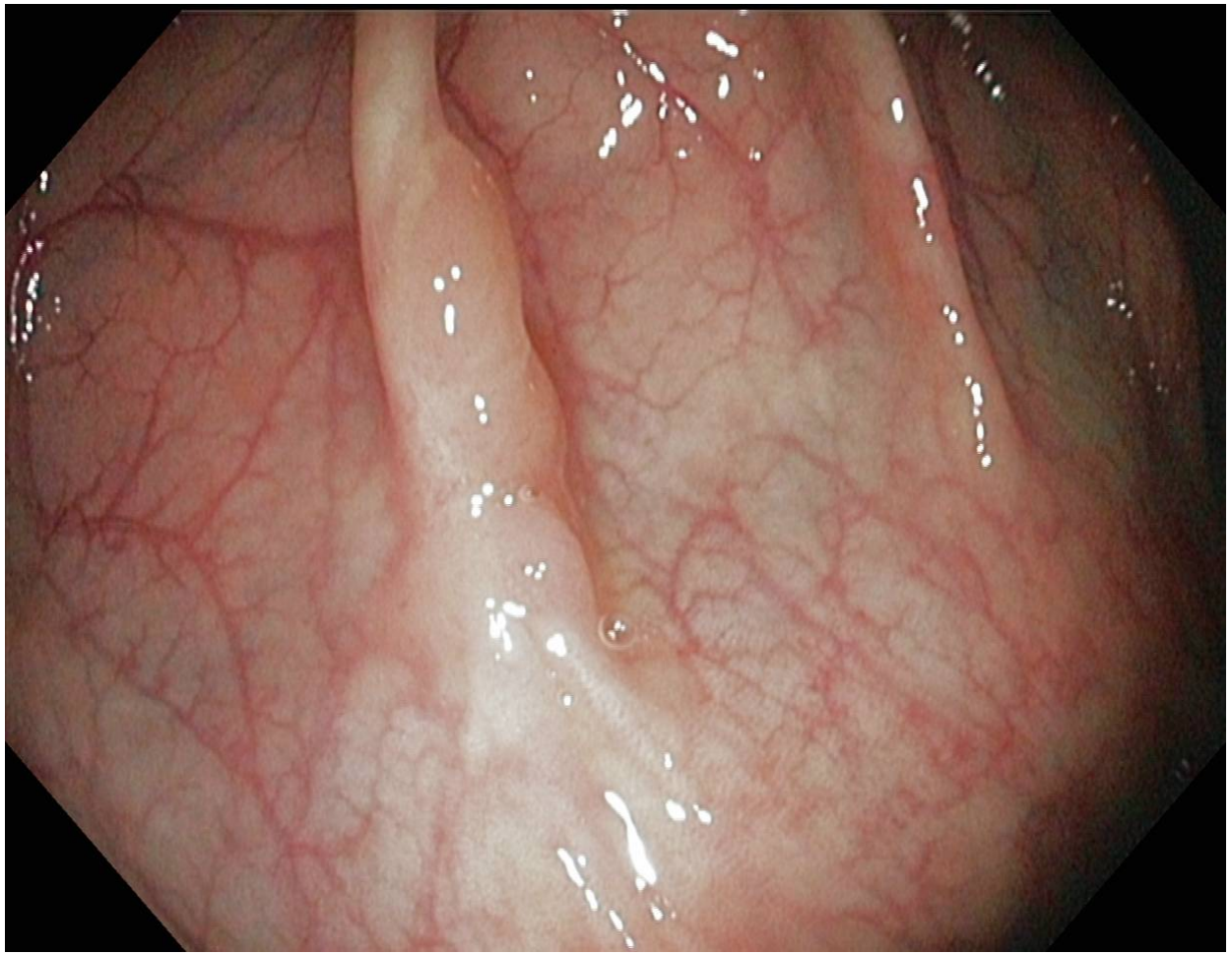
Step 3: training

Photo 26



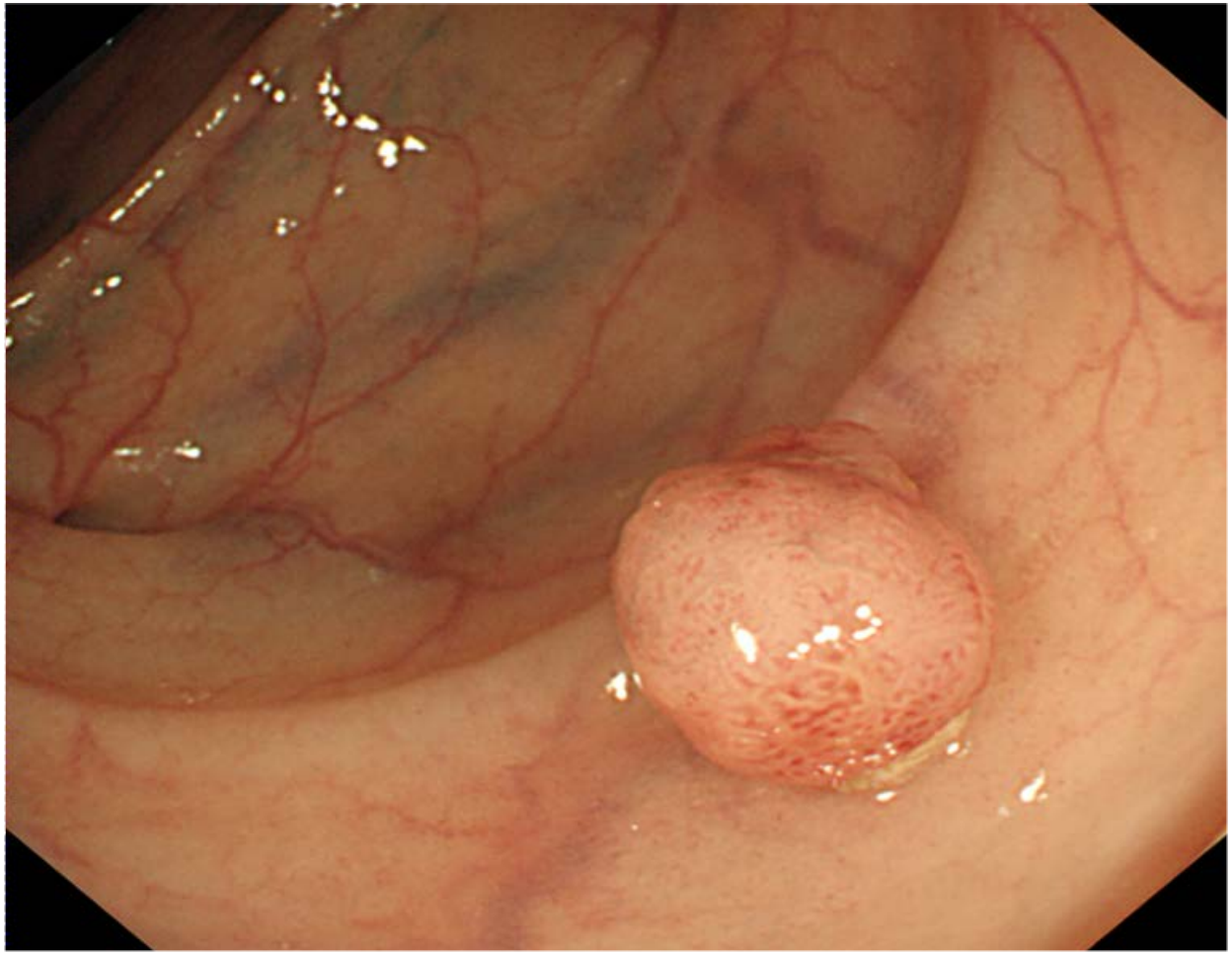
Step 3: training

Photo 27



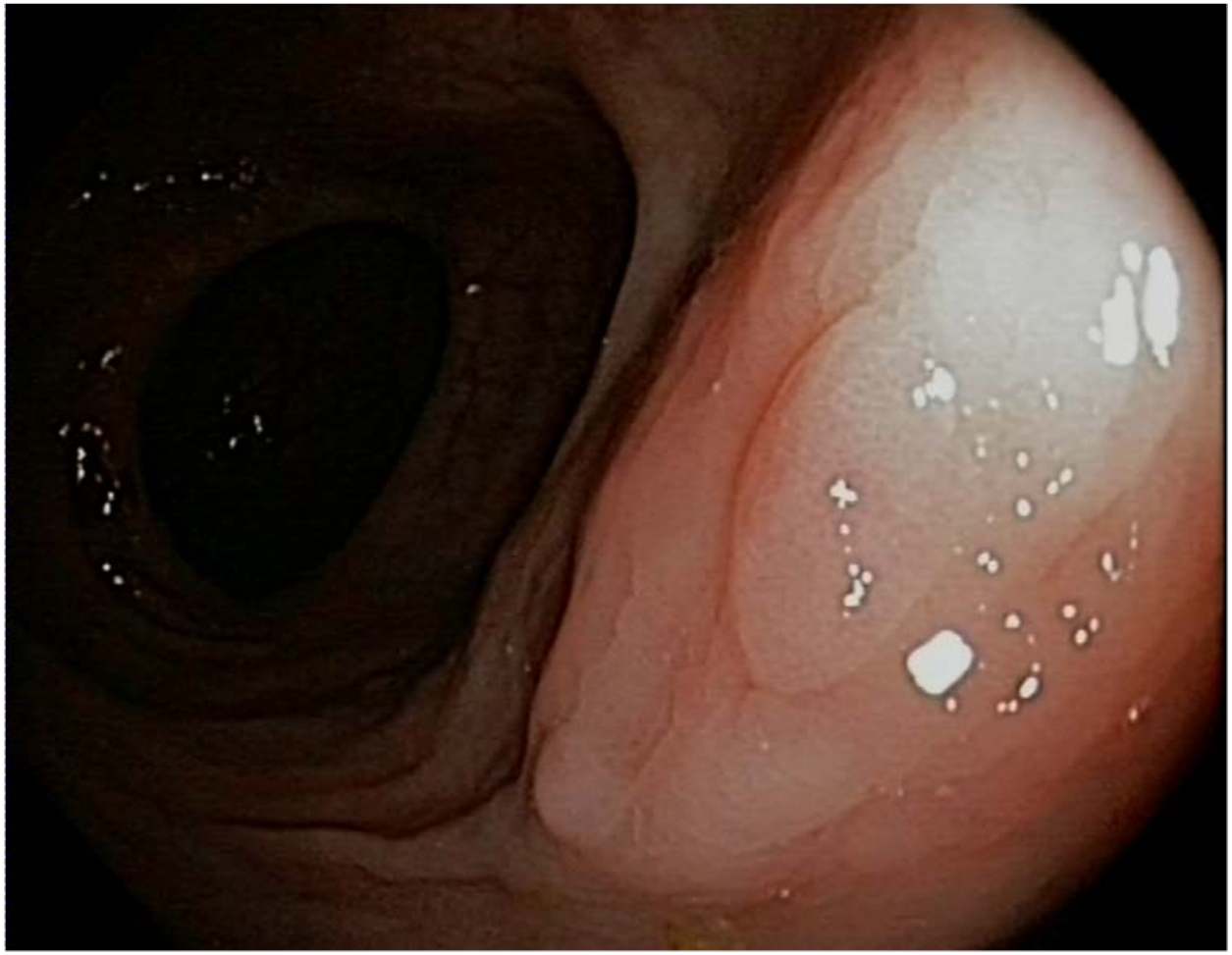
Step 3: training

Photo 28



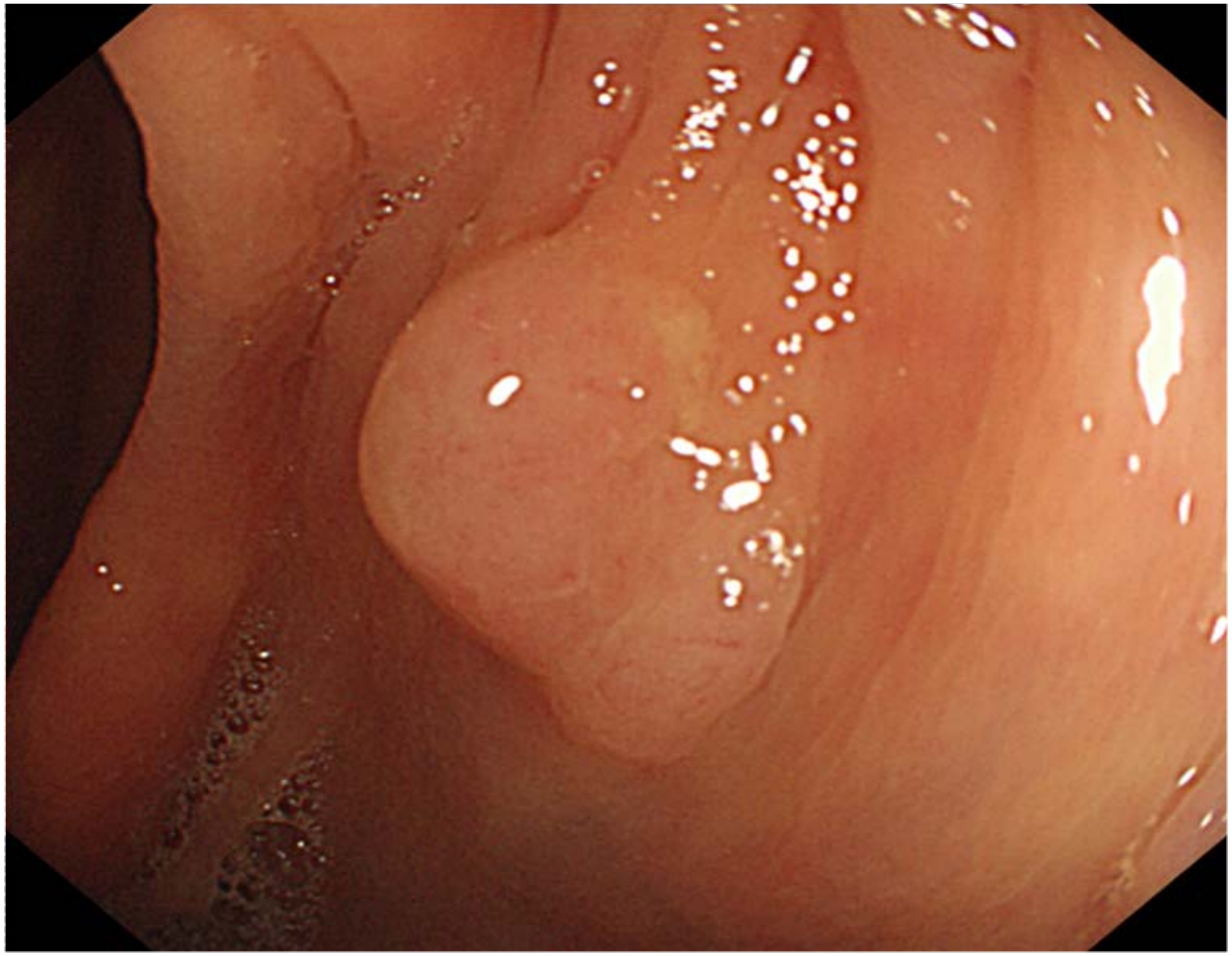
Step 3: training

Photo 29



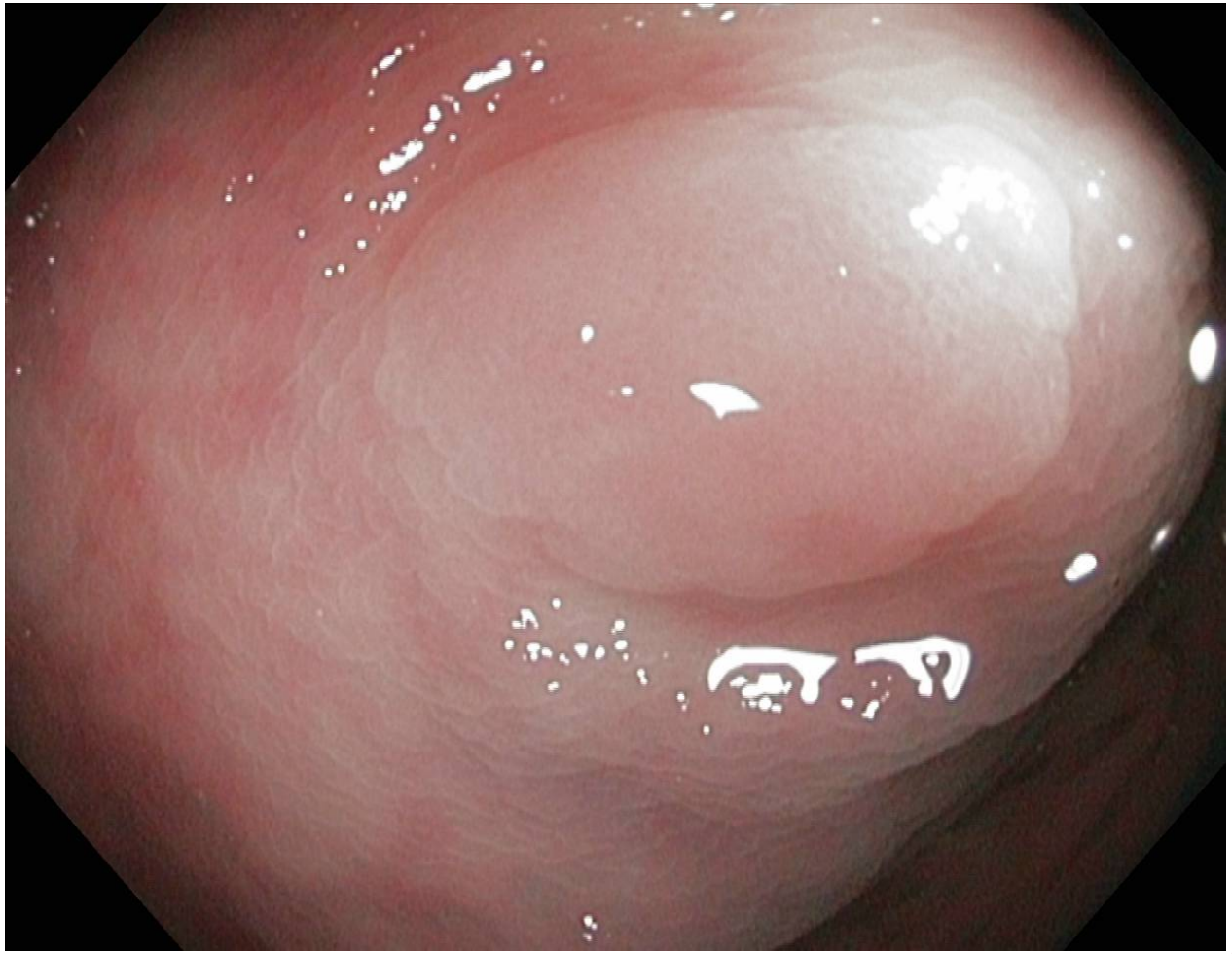
Step 3: training

Photo 30



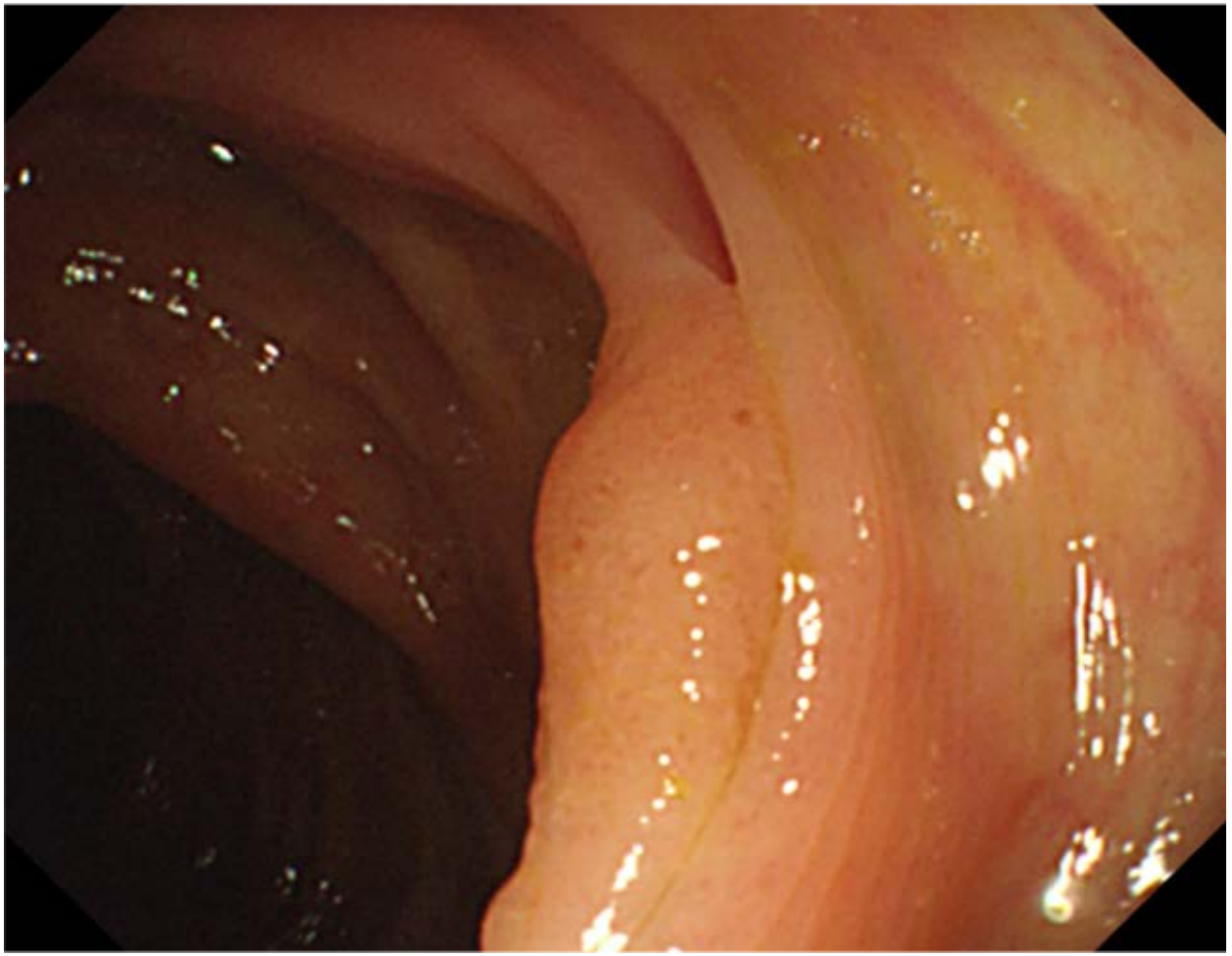
Step 3: training

Photo 31



Step 3: training

Photo 32



Step 3: training

END of TRAINING

Step 4: feedback

- You can now check your answers with the Feedback form (word document in the WeTransfer file)
- As there is no ‘golden standard’, the ‘correct’ classifications were determined by an panel of 3 physicians. Only the 32 polyps with total agreement were used for the training.
- The purpose of the training is to evaluate if the interobserver agreement improves after all 7 experts have been through the same basics and examples of the classification
- Your answers are private, no need to send these to the researcher

Step 5: re-assessment

- Please watch the 85 polyp movies again
- Classify them according to the Paris classification
- Also re-evaluate the other items
- The Clinical Record Form of the movies can be send to researcher by mail/email/fax
- Thank you very much!!