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Colorectal Adenoma – Resection Techniques and Surveillance

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Question 1: Detection of polyps during screening colonoscopy is the most important step of the screening process. Which methods do you regard most important to improve the polyp detection rate?

Egger: The most important condition for the detection of polyps in the colon is a good bowel preparation. A high resolution endoscope is required – at best the latest scope generation. Another important point is the withdrawal time, which should be long enough. One or two experienced nurses as two or four additional eyes will be helpful. In the future, endoscopes with a wider angle or side view capability will improve our detection rate.

Faiss: In my opinion, there are some important issues which should be addressed for improving the adenoma detection rate:

- quality of bowel cleaning,
- additional cleaning of the colonic surface with a washer in order to detect more flat adenoma, especially sessile serrated adenomas,
- careful examination by an experienced endoscopist in an adequate examination time,
- new technical equipment, and
- for the future, 360º endoscopes for an easy visualization of the entire colonic surface.

Frieling: Detection of polyps during screening colonoscopy is most significantly affected by the experience of the investigator, effectiveness of bowel cleansing, and withdrawal time. In addition, special care for the right colon is mandatory. Improvement of endoscopy devices such as transparent cap, magnifying endoscopy, and computed virtual chromoendoscopy systems (NBI (narrowband imaging system), FICE (Fujinon intelligent color enhancement)) are also of interest (see also [1, 2]).

Hartmann: Improvement of the polyp detection rate is an interaction of different factors. First of all, bowel cleansing is a sometimes underestimated but relevant factor in colonoscopy. Furthermore, the withdrawal time has a huge impact on the quality of colonoscopy. Therefore, I recommend a withdrawal time of 9 min, which has also been reported as a benchmark in the literature. As we know, colonoscopy means teamwork; therefore, we train our nurse staff to increase the polyp detection rate.

Question 2: What is the best strategy to reduce interval carcinomas?

Egger: In my opinion, the best way to prevent interval carcinomas is to find the polyps behind the colonic folds with better endoscopes and algorithms to detect flat lesions. We are still missing up to 30% of our polyps and flat adenomas. Currently, there are several endoscopes with a wider angle of view emerging on the market. Important is also a personalized screening interval on the basis of the history of a patient and of their family.

Faiss: Careful examination, ideally of the entire colonic surface, by an experienced endoscopist with complete removal of all detected polyps (except small (hyperplastic) diminutive polyps in the distal colon), combined with a risk-adapted follow-up strategy including routine control especially in cases after piecemeal resections of large laterally spreading adenomas (granular and non-granular type).

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Frieling: In my opinion, the best strategy is to shorten the interval between colonoscopies to 5 years and to characterize risk constellations such as polyps within the right colon, numerous polyps, polyps with high-grade intraepithelial dysplasia, and flat adenoma.

Hartmann: As we consider that interval carcinomas are often related to an incompletely resected or missed neoplastic lesion in a previous colonoscopy, our aim has to be the improvement of the index colonoscopy.

As mentioned before, the strategy starts with the bowel preparation favored in a split-dose manner and an optimized withdrawal time. Furthermore, improving colonoscopy techniques such as high-definition colonoscopy and image-enhanced endoscopy may help to detect rapid-growing lesions earlier, which then will be removed. Together with the regular use of classifications (like Kudo or NICE), endoscopists should be able to assess the risk of malignancy of a lesion and achieve R0 resection for every polyp.

Question 3: Endoscopic submucosal dissection (ESD) in the colon is an advanced and complicated interventional procedure for suspected early carcinoma. In which cases do you think that ESD in the colon is justified?

Egger: ESD in the colon is an alternative procedure to endoscopic mucosal resection (EMR) in selected patients when performed in centers specialized in this technique. Patients with 'laterally spreading tumors – non-granular type' (LST-NG) in the rectum, large adenomas, and fibrosis in recurrent adenomas in the distal colorectum are good candidates.

Faiss: ESD in the colon is the most challenging ESD procedure and can only be performed safely by very experienced endoscopists. Therefore, in my opinion, ESD in the colon is only justified in suspected early carcinomas in patients with a high risk of morbidity/mortality for the conventional surgical treatment of such lesions.

In contrast, the indications for ESD in the rectum can also be expanded to large laterally spreading adenomas without suspected early cancer in order to obtain en bloc resection and to reduce the risk of residual and recurrent neoplasia.

Frieling: ESD within the colon should be exclusively limited to highly experienced centers. It has to be kept in mind that an exact preinterventional T-staging is limited to the rectum and distal sigmoid colon, and even here the sensitivity of endoscopic ultrasound in detecting T1 carcinoma is rather low. Therefore, the risk of treating advanced colonic carcinoma by ESD is significant. In addition, the risk of perforation and touching the tumor is significant. In contrast, a combination of endoscopy and laparoscopic surgery provides a safe and well tolerable procedure with the chance of performing oncologic surgery and the resection of lymph nodes.

Hartmann: ESD has been shown as an effective procedure for treating large lesions in the colon by en bloc resection. Even though this technique is less invasive than surgery and has a greater potential for cure it is still accompanied by a higher risk of complications and a time-consuming procedure. Therefore, we recommend ESD in the distal colon only in selected appropriate patients. This involves T1 colorectal cancers > 2 cm with an infiltration into the submucosal layer of up to 1,000 μm (sm1) to reduce the risk of lymph node spread.

Question 4: Which classification system (Paris classification, NICE classification, Kudo classification etc.) do you use in your routine practice for the description of pedunculated or flat polyps?

Egger: We use the Paris and the Kudo classifications, which are the most common classifications. This helps us to differentiate resectable from endoscopically unresectable lesions.

Faiss: We use a mixture of the Paris and the NICE classifications.

Frieling: I prefer the NICE classification because it is easily applicable in the clinic. In addition, the NICE classification is helpful independent of magnifying endoscopy. However, more prospective research is needed to prove that this international classification can be applied with satisfactory availability, feasibility, and reliability.

Hartmann: We regularly use chromoendoscopy together with the Kudo pit pattern classification to evaluate polyps. Due to the use of Pentax endoscopes in our facilities, Olympus NBI and NICE classification have not been established in our unit so far.

Question 5: What does your management strategy for small diminutive polyps in the distal colon look like? 'Leave and observe', 'remove and discard', 'remove one for histology and leave the rest', or 'remove all'?

Egger: If there are only 2–3 diminutive polyps, I remove them with a forceps or a cold snare in the left colon. If there are more polyps, I remove one for histology. I remove all small polyps (6–9 mm) with a cold or hot snare and send them to the pathologist.

Faiss: Remove one for histology and leave the rest.

Frieling: My strategy is to remove all diminutive polyps in the distal colon, if possible, because discarding polyps without any histologic examination has an attendant risk of missing small invasive colorectal cancers that would normally be treated surgically. The frequency of small invasive cancers among all diminutive polyps (≤5 mm) has been reported to be 0.16%. Macroscopically, most of them (90%) were of the depressed type. Therefore, it is important to detect any depressed area present in a lesion.

So far, the 'resect and discard' strategy has been limited to diminutive (1–5 mm) or small (6–9 mm) polyps that can be clinically differentiated with a high degree of confidence ('pit pattern'). Polyps for which diagnostic confidence is low are resected and sent for pathologic examination. The 'resect and discard' strategy has considerable merits in terms of a cost-saving histology.

Hartmann: The statistical 10-year colorectal carcinoma risk for unresected small diminutive polyps remains very low. Therefore, in the rectosigmoid, we recommend a biopsy of a few of the obviously hyperplastic polyps. The histologic evaluation of the biopsies should be used to decide on the colonoscopy interval. In every other part of the colon we recommend to remove all diminutive polyps and send them for histologic evaluation.

Question 6: The management of T1 carcinoma has changed in the last years. What criteria of high-risk pedunculated polyps would you regard as an indication for a prophylactic operative resection? Is there a difference to flat adenomas?

Egger: T1 carcinoma with low-risk criteria (G1, G2, L0, R0, sm1) can be managed endoscopically. A relatively new risk factor is the submucosal infiltration > 1,000 μm (sm2, sm3) in flat lesions. The value of V1 is unclear. We should resect all pedunculated polyps and send them for histologic evaluation. Flat lesions should be resected if technically feasible. This means lesions with clear lifting sign and elevated lesions.

Faiss: We follow the so-called low- and high-risk criteria for T1 carcinomas in the colorectum for pedunculated and flat tumors. Only in cases of complete, histologically confirmed R0 resection and in cases of G1/G2/L0/V0 tumors with a maximum of 1,000 μm infiltration depth into the submucosal layer prophylactic surgical resection can be avoided. In cases of a R0-resected T1 carcinoma in a pedunculated polyp, the submucosal invasion depth can be more than 1,000 μm depending on the location of the invasive tumor as well as in correlation to the distance to the resection margin.

Frieling: The risk of malignant lymph nodes increases with lower histologic differentiation (G3 and G4) and infiltration of lymphatic or blood vessels (V1, L1). Therefore, polypectomy of high-risk pedunculated polyps with these criteria should be followed by oncologic surgery.

Small low-risk flat adenomas < 10 mm can be removed by EMR, while larger low-risk flat adenomas < 20 mm may be removed by EMR or ESD. In experienced centers, ESD is the preferred method for complete endoscopic removal of high-risk flat adenomas > 20 mm (depressed type, surface pit pattern suggestive of superficial invasion). When carried out by appropriately trained endoscopists, both EMR and ESD have the benefit of avoiding surgery.

Hartmann: In general, endoscopic resection is recommended in T1 cancer with an infiltration up to 1,000 μm (sm1) and a G2 grading. The most important aim is to achieve R0 resection. Therefore, pedunculated polyps in the proximal colon which cannot be removed en bloc by EMR should be treated surgically. For the rectum, bigger polyps could be safely removed by ESD. The likelihood of a deep submucosal infiltration has been shown to increase in flat lesions.

Question 7: Polyps in colitis are often multiple and inflammatory in origin. What is your personal strategy to solve this dilemma?

Egger: This is a big dilemma. You should perform your endoscopy in remission, if possible. I use NBI and magnification with resection or biopsy of all suspected polyps.

Faiss: My personal strategy in such cases is to examine the colon very carefully (including NBI, near focus mode etc.), to take random biopsies as recommended, and to remove greater and suspicious polyps as well as to perform recurrent endoscopic examinations each year.

Frieling: In ulcerative colitis, I personally try to biopsy the colonic mucosa every 10–20 cm and to evaluate polyps by magnifying endoscopy and by their 'pit pattern'. Polyps in non-inflamed areas are biopsied separately. Numerous polyps in inflamed areas that are not suspicious for adenoma are biopsied at random.

Hartmann: Chromocolonoscopy and staining together with the Kudo classification can help to differentiate neoplastic from non-neoplastic polyps and has been reported to enhance lesion detection in colitis surveillance.

Image-enhanced endoscopy such as Pentax i-scan or Olympus NBI are recent opportunities which need more evaluation and experience to be a useful instrument in the future.

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References

1 Frieling T, Neuhaus F, Heise J, Kreysel C, Hülsdonk A, Blank M, Czypull M: Cap-assisted colonoscopy (CAC) significantly extends visualization in the right colon. Z Gastroenterol 2012;50:279–284.
2 Frieling T, Neuhaus F, Kuhlbusch-Zicklam R, Heise J, Kreysel C, Hülsdonk A, Blank M, Czypull M: Prospective and randomized study to evaluate the clinical impact of cap assisted colonoscopy (CAC). Z Gastroenterol 2013;51:1383–1388.