Introduction

Gastrointestinal cancers represent the leading cause of cancer-related death worldwide. The diagnosis of precursor and early gastrointestinal cancers is therefore of great interest because their endoscopic and surgical treatment present the best chance for cure. These pre-cancers and early cancers are often subtle and can pose a challenge to gastroenterologists to visualize using standard white light endoscopy. Contrast enhancement of the endoscopy images, through use of dye solutions, has been developed and used in select indications. Newer endoscopes are now equipped with optical and/or electronic technologies to also increase the contrast of structures or cells imaged during endoscopy. The term “image-enhanced endoscopy” (IEE) encompasses various means of enhancing contrast during endoscopy using dye, optical, and/or electronic methods. IEE allows improved visualization of lesions and can be used to gain insight into the pathology of the lesion, which, in turn, provides guidance to select the optimal treatment.

Hence, angiogenesis is critical to the transition of premalignant lesions in a hyperproliferative state to the malignant phenotype. Therefore, diagnosis based on angiogenic or vascular morphologic changes might be ideal.

*Can be applied using colonoscopes with/without optical (zoom) magnification.

** Those structures (regular or irregular) may represent the pits and the epithelium of the crypt opening.

*** Type 2 consists of Vienna classification types 3, 4 and superficial 5 (all adenomas with either low or high grade dysplasia, or with superficial submucosal carcinoma). The presence of high grade dysplasia or superficial submucosal carcinoma may be suggested by an irregular vessel or surface pattern, and is often associated with atypical morphology (e.g., depressed area).

Figure 1.
for early detection or diagnosis of neoplasms. In 2006, we proposed the term “meshed capillary: MC vessels” for the distinction between non-neoplastic and neoplastic lesions and the microvascular classification “capillary pattern: CP” for the differential diagnosis of colorectal lesions. We have recently reported that i) the observation of the MC vessels by NBI with magnification is effective for distinguishing between non-neoplastic and neoplastic lesions and ii) provides high accuracy for distinction between low grade dysplasia and high grade dysplasia/invasive cancer, and thus can be used to predict the histopathology of colorectal neoplasia without the application of any dye solution. These results suggest that NBI colonoscopy as a form of “optical digital image-enhanced endoscopy (IEE)” facilitates simpler and more efficient screening colonoscopy.

This presentation is to be focusing on the endoscopic diagnosis and management of colorectal tumor using current special equipment and accessories. And the NBI international colorectal endoscopic (NICE) classification is briefly introduced (Figure 1).

References