



Chromoendoscopy Used to Increase the Detection Rates for various Pathologic Processes during Endoscopy

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Introduction

The endoscopist can use chromoendoscopy to help identify and characterise lesions in the gastrointestinal system (GIT). This is usually accomplished by employing a range of colours to differentiate between normal and pathological mucosa. Endoscopists can analyse a specific area of interest with increased clarity and sharpness using this technique. Chromoendoscopy can supplement imaging by highlighting aspects of mucosal surface topography and may help provide in-depth data that allow for more precise therapy options in the future.

By facilitating targeted biopsies of worrisome areas, chromoendoscopy has proven good diagnostic yield in the evaluation of dysplastic lesions in Barrett's oesophagus (BO) and oesophageal cancer (3-5). Despite this, chromoendoscopy continues to play an important role in a variety of diseases.

AA chromoendoscopy in Barrett's Neoplasia

Guelrud and colleagues introduced this unique usage of AA chromoendoscopy in BO in 2001. (14). The idea is comparable to that of AA screening for dysplastic uterine cervical lesions in gynaecology, which was widely established in the early 1990s.

When sprayed into the Barrett's mucosa, it causes a reversible acetylation of cellular proteins, resulting in a "aceto-whitening reaction." Compared to normal non-dysplastic BO epithelium, the aceto-whitening reaction is not apparent or disappears quickly in cancerous lesions lacking cellular proteins [1]. High-grade dysplastic lesions and intramucosal malignancy, predictably, required between 23 and 53 seconds to lose the aceto-whitening effect, compared to non-dysplastic lesions, which retained the effect for up to 311 seconds.

LI Chromoendoscopy in oesophageal Squamous Cell Carcinoma

Oesophageal cancer has a notoriously dismal prognosis and a low 5-year survival rate. It is the world's eighth most prevalent cancer and the sixth most prevalent cause of cancer-related mortality.

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Careful visualisation using dye-based chromoendoscopy in the form of LI may help to ensure that worrisome spots are discovered, allowing biopsies to be taken for confirmation. The logic behind LI, which appears to be similar in concept to AA chromoendoscopy, is in its reaction with glycogen, which is prevalent in normal stratified squamous epithelium tissue in the oesophagus. LI, like AA, has tremendous diagnostic promise in early cancer identification, allowing for targeted biopsies. Furthermore, a clear distinction between normal and pathological margins can be easily established, allowing for future endoscopic resection planning.

Detection of Dysplastic lesions in IBD

Random biopsies were formerly used in IBD to find flat dysplastic lesions that were difficult to detect using white light endoscopy Rutter and colleagues found that none of the 2,904 colonic samples they took for patients with long-term severe ulcerative colitis were dysplastic.

The SCENIC International Consensus Statement on Surveillance and Management of Dysplasia in Inflammatory Bowel Disease was established by an international interdisciplinary group comprising a wide range of stakeholders involved in IBD surveillance. The authors suggested that dye-based chromoendoscopy be used because of its high sensitivity and accuracy in spotting worrisome lesions. As a result, the panchromoendoscopy approach should be used in IBD patients to detect dysplastic lesions [2]. This entails spraying indigo carmine or methylene blue circumferentially around the colon, either with a pump through the water jet channel or with a spray catheter through the biopsy channel. Methylene blue chromoendoscopy outperformed targeted biopsies by 3 to 1 in detecting more malignant lesions with a sensitivity of 93%, according to a randomised controlled experiment.

Detection of Early Gastric Cancer (EGC) with Indigo Carmine or Indigo Carmine with AA

Indigo carmine can help detect EGC by assisting in the examination of suspicious spots in the stomach (48). In the assessment of stomach adenomas, a combination of AA and indigo carmine has been employed. With this methodology, Kono and colleagues tested the sensitivity of the "reddish colour change." The detection of EGC was greatly improved as a result of this indication.

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