3D imaging techniques for improved colonoscopy.

Abstract

Colonoscopy screening with a conventional 2D colonoscope is known to reduce mortality due to colorectal cancer by half. Unfortunately, the protective value of this procedure is limited by missed lesions. To improve the sensitivity of colonoscopy to precancerous lesions, 3D imaging techniques could be used to highlight their characteristic morphology. While 3D imaging has proved beneficial for laparoscopic procedures, more research is needed to assess how it will improve applications of flexible endoscopy. In this editorial, we discuss the possible uses of 3D technologies in colonoscopy and factors that have hindered the translation of 3D imaging to flexible endoscopy. Emerging 3D imaging technologies for flexible endoscopy have the potential to improve sensitivity, lesion resection, training and automated lesion detection. To maximize the likelihood of clinical adoption, these technologies should require minimal hardware modification while maintaining the robustness and quality of regular 2D imaging..