

CAN ARTIFICIAL INTELLIGENCE IDENTIFY HISTOLOGICAL SUBCLASSES OF HYPERPLASTIC POLYPS BASED ON THEIR ENDOSCOPIC FEATURES?

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Poster

Colorectal

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A deep learning algorithm was developed to classify molecular subclasses of hyperplastic polyps (microvesicular versus goblet cell-rich) from endoscopic images, achieving an AUC of 0.817 in a single-center retrospective study.

KEY POINTS

- The algorithm was trained on 211 hyperplastic polyps (70% training, 10% validation, 20% testing) using white light and virtual chromoendoscopy (i-scan) images from Pentax endoscopes, with expert pathologist review for classification into microvesicular hyperplastic polyps, goblet cell-rich hyperplastic polyps, or mixed subtypes.
- The model achieved a sensitivity of 80.0% for predicting microvesicular hyperplastic polyps and 78.4% for predicting goblet cell-rich hyperplastic polyps, with an overall AUC of 0.817.
- Due to low prevalence of microvesicular hyperplastic polyps (28%), the positive predictive value for this subtype was only 33.3%, while the positive predictive value for goblet cell-rich hyperplastic polyps was 96.7%.
- The authors conclude this pilot study demonstrates proof of concept that artificial intelligence can predict hyperplastic polyp subclasses from endoscopic appearance, with potential to enhance diagnostic precision for tailored surveillance strategies.
- This work may be most relevant to endoscopists and pathologists interested in serrated polyp classification and the application of artificial intelligence to colonoscopy.

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