USEFULNESS OF COMPUTER-AIDED DIAGNOSIS (CADX) BASED ON NON-MAGNIFIED WHITE LIGHT IMAGES IN THE DIAGNOSIS OF DEEP INVASIVE CANCER IN T1 COLORECTAL CANCER

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A computer-aided diagnosis system using non-magnified white light imaging achieved 70.7% accuracy in diagnosing deep invasive T1 colorectal cancer, significantly outperforming non-expert endoscopists and matching expert performance.

KEY POINTS

- The CADx system achieved 70.2% sensitivity and 70.7% accuracy for T1b colorectal cancer diagnosis, significantly higher than non-expert endoscopists (39.9% sensitivity, 51.9% accuracy, $p < 0.01$).
- Expert endoscopists achieved comparable diagnostic accuracy to the CADx system (67.7% accuracy, 47.9% sensitivity, 87.7% specificity).
- The CADx system diagnosed images in 0.49 seconds per image, significantly faster than non-expert endoscopists (7.72 seconds) and expert endoscopists (5.77 seconds).
- The study included 365 images from 37 T1 colorectal cancers (16 T1a and 21 T1b) evaluated by two non-expert and two expert endoscopists.
- This CADx system represents an advance over previous systems that required image enhanced endoscopy or endocytoscopy, and may particularly benefit non-expert endoscopists in clinical practice.

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