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Summary

CADE-IBD: A REALITY OR A DREAM? PROSPECTIVE EVALUATION OF A NOVEL NEURAL NETWORK FOR DETECTION OF NEOPLASIA IN IBD COLON

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IBD

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A novel computer-aided detection algorithm dedicated to IBD demonstrated 90.6% sensitivity and 100% real-time sensitivity for neoplasia detection in a prospective two-phase study of IBD surveillance colonoscopy.

KEY POINTS

- In phase 1 testing on 1,111 still images from IBD colons, the dedicated CADe-IBD algorithm achieved 90.6% sensitivity and 94.6% specificity for lesion detection, significantly outperforming a generic CADe system (69.4% sensitivity, $p<0.001$).
- The CADe-IBD algorithm showed particularly strong performance for non-polypoid lesions (89.7% sensitivity) compared to generic CADe (48.7% sensitivity), and maintained high sensitivity in the presence of mild inflammation (94.7% for Mayo 1).
- In phase 2 real-time testing in 30 consecutive IBD patients undergoing surveillance colonoscopy, the algorithm detected all 25 neoplastic lesions (100% sensitivity) among 136 total lesions identified, with 90.4% overall lesion detection sensitivity.
- This represents the first real-time use of a dedicated CADe algorithm for neoplasia detection in IBD colon, demonstrating feasibility in clinical practice with 80% of patients having ulcerative colitis and 46.6% showing mild patchy inflammation.

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