

COMPUTER AIDED DETECTION SYSTEM FOR REAL-TIME DETECTION OF BARRETT'S NEOPLASIA: A MULTI-CENTER PILOT AND FEASIBILITY STUDY

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Poster

Oesophagus

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A computer-aided detection system for Barrett's esophagus neoplasia achieved 100% per-patient sensitivity in a pilot study of 30 live endoscopic procedures across two tertiary hospitals.

KEY POINTS

- The CADe system correctly identified all 15 neoplastic patients, detecting 14 of 15 visible lesions in pullback videos and the remaining lesion in subsequent level videos.
- The system produced false positive predictions in 8 of 15 non-dysplastic Barrett's esophagus patients, which would translate to a maximum of one additional targeted biopsy per patient compared to 16 random biopsies dictated by mean Barrett length.
- Histopathology confirmed neoplasia in 13 cases, comprising 11 adenocarcinomas and 2 high-grade dysplasia cases, while two cases contained no dysplasia and 4 non-dysplastic group patients had low-grade dysplasia on random biopsy.
- The system was trained on 6,237 neoplastic and 7,595 non-dysplastic images from 15 international centers and underwent extensive ex-vivo validation before live evaluation.
- This work is relevant to endoscopists and researchers interested in artificial intelligence applications for early neoplasia detection in Barrett's esophagus surveillance.

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