

AUTOMATED DETECTION AND TIME MEASUREMENT OF RECTAL RETROFLEXION USING ARTIFICIAL INTELLIGENCE – A MULTI CENTRE STUDY

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Poster

Colorectal

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A convolutional neural network achieved 98.3% accuracy in detecting rectal retroflexion during colonoscopy and quantified retroflexion inspection time across nine UK sites.

KEY POINTS

- A ResNet-101 CNN was trained on 185 procedures from one UK site and tested on 180 procedures from nine UK sites enrolled in the CADDIE Trial.
- The CNN detected rectal retroflexion in 177 of 180 procedures, with per-frame sensitivity of 94.7%, specificity of 99.0%, and accuracy of 97.6%.
- The CNN measured median rectal retroflexion time as 7.4 seconds (IQR 4.2–12.2), closely matching the ground truth median of 7.6 seconds (IQR 4.5–12.3).
- The authors state this is the first study to use artificial intelligence for automated rectal retroflexion detection and measurement of inspection time, a novel metric.
- The authors suggest further exploration of rectal retroflexion time as a potential quality indicator for colonoscopy, either replacing or supplementing the current 90% detection rate standard.

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