

THE DEVELOPMENT AND CLINICAL EVALUATION OF A NATURAL LANGUAGE PROCESSING-BASED AUTOMATIC SURVEILLANCE SYSTEM FOR COLORECTAL POST-POLYPECTOMY PATIENTS

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Poster

Colorectal

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A natural language processing-based automatic surveillance system for post-polypectomy colorectal cancer screening achieved over 98% accuracy in assigning surveillance intervals and improved physician guideline adherence in multi-center testing.

KEY POINTS

- The system was developed using endoscopic and pathological reports from 47,544 patients across three hospitals and tested against five international post-polypectomy surveillance guidelines
- System accuracy for identifying patient types exceeded 99.45% in internal testing and 98.56% in external validation, and it increased physician accuracy from 78.10% to 98.67% in a multi-reader trial
- In prospective testing, the system successfully informed 93.18% of patients automatically and reduced follow-up time from 127.4 seconds to 14.02 seconds per patient
- The authors conclude the system has potential to improve guideline adherence while reducing workload for doctors and nurses in post-polypectomy surveillance

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