Post-surgical surveillance of locally advanced ileal carcinoids found by routine ileal intubation during screening colonoscopy: a case series

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Abstract

Introduction: Carcinoid tumors are the most common type of small bowel tumor, and the incidence is rising. The majority of small bowel carcinoid tumors arise within 60cm of the ileocecal valve. The addition of ileoscopy to screening colonoscopy can detect asymptomatic small bowel carcinoid tumors and improve long-term prognosis through early surgical resection. Ileoscopy is a brief procedure with a high success rate and minimal complications beyond those of colonoscopy. The use of ileoscopy during screening colonoscopy has led to an increase in the early-stage detection of locoregional small bowel carcinoid tumors that can be completely treated with surgery alone, and as such has improved long-term prognosis in these patients.

Case presentations: Five asymptomatic Caucasian patients, 3 males and 2 females, from 53 to 70 years old (mean age, 60 years old), were diagnosed with locoregional ileal carcinoids during routine colonoscopy with ileoscopy. Since having an ileocolectomy and without adjuvant treatment, no patient has developed tumor recurrence over a follow-up period of one and half to 12 and a half years.

Conclusion: The early detection of carcinoid tumors by ileoscopy during screening colonoscopy can lead to increased long-term survival in patients with locally invasive disease. The high success rate and brief duration of the procedure, in addition to the lack of associated morbidity and mortality suggest that with further studies, routine ileoscopy during colonoscopy may be promising in the diagnosis of small bowel carcinoid tumors.

Keywords: Carcinoid, Colonoscopy, Ileal carcinoid, Ileal intubation, Ileocolectomy, Small bowel
The five patients presented in this case series demonstrate the importance of early detection and prompt surgical intervention for terminal ileal carcinoid tumors. All patients were asymptomatic at presentation, and the tumors were diagnosed during routine screening colonoscopies. The mesenteric metastatic disease in these patients suggests that screening colonoscopy is an effective tool for detecting small bowel carcinoids, with a reported yield of 2.0% to 7.2% [8]. However, as SBCTs increase in incidence, the diagnostic yield of ileoscopy during screening colonoscopy is a relative low 2.0% to 7.2% [8]. Because the diagnostic yield of ileoscopy in asymptomatic patients undergoing screening colonoscopy is low, some authors argue against its routine use [7]. These detractors generally agree that ileoscopy in screening colonoscopy should be used in selected symptomatic patients or for training purposes, but that the diagnostic yield is too low in asymptomatic patients to warrant the additional time and effort on a regular basis. It is true that the diagnostic yield of ileoscopy during screening colonoscopy is a relatively low 2.0% to 7.2% [8]. However, as SBCTs increase in incidence, the diagnostic yield of this procedure will correspondingly rise. Furthermore, ileoscopy is successful in most patients (72% to 97%), has minimal complications beyond those of colonoscopy, and takes only a few additional procedural minutes to perform [5]. Early detection with routine ileoscopy can lead to early diagnosis, prompt surgical resection, and improve long-term patient outcomes without the need for adjunctive therapy.
Similar previously mentioned case series by Yarze et al. [5] and Lee et al. [6] also support the use of routine ileoscopy during screening colonoscopy to discover SBCTs, albeit without follow-up beyond the initial surgery and related pathology. In these case studies, the diagnosis of asymptomatic ileal SBCTs was facilitated by screening ileoscopy in a total of six patients. Following diagnosis, all patients in these series underwent surgical resection. Despite a lack of post-surgical surveillance in these reports, both articles drew similar conclusions supporting the usefulness of ileoscopy during routine colonoscopy. Long-term, symptom-free follow-up in our case series, ranging from one and a half to twelve and a half years, supports the idea that early diagnosis as a result of ileoscopy during screening colonoscopy can improve overall long-term survival in accordance with previous reports.

**Conclusion**

Early detection through screening colonoscopy with ileoscopy, and subsequent early surgical intervention of SBCTs in this case series likely contributed to improved long-term morbidity and mortality. Given the increasing incidence of SBCTs in populations undergoing screening colonoscopy, and the high success rate with minimal increase in procedural time or complication rate, ileoscopy shows promise as a worthwhile addition to standard screening colonoscopy practice. While further research is warranted, the post-surgical asymptomatic survival seen in the patients of this case series suggests that there may be long-term benefits to routine ileoscopy during screening colonoscopy.

**Consent**

Written informed consent was obtained from the patients, and for the next of kin in case 4, for publication of this case series and any accompanying images. Copies of the written consents are available for review by the Editor-in-Chief of this journal.

**Abbreviations**

SBCT: small bowel carcinoid tumor.

**Competing interests**

The authors declare that they have no competing interests.

**Authors’ contributions**

ET, WG and AM were responsible for study concept and design, and acquisition of data. ET and LW and AM were responsible for analysis and interpretation of data. ET and LW were responsible for drafting the manuscript. LW, WG and AM were responsible for critical revision. AM was responsible for the study supervision. All authors read and approved the final manuscript.

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