

**Colonoscopy Quality is the
Answer for the Emerging Issue
of Interval Cancer**

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월요일집담회

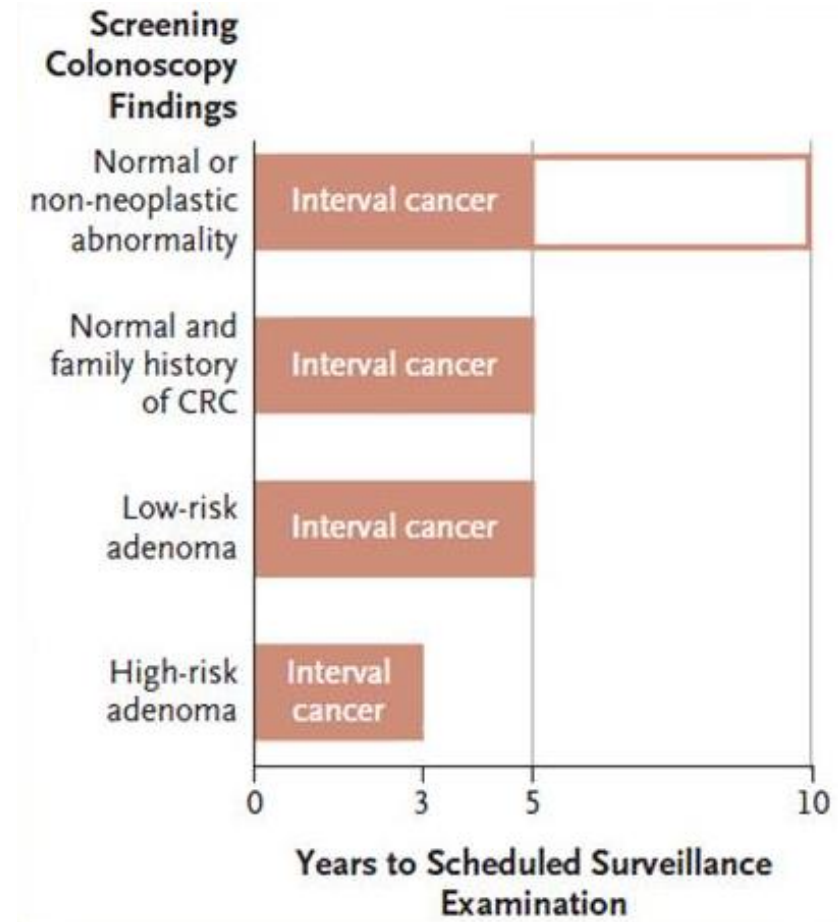
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Introduction

- Colonoscopy is currently regarded as the gold standard and preferred screening method for colorectal cancer (CRC).
- Recently, however, a limitation of colonoscopy in the prevention of CRCs has been identified, particularly in the right-sided colon, and the problem of so-called interval cancers has emerged.

Definition of interval cancer

CRCs detected in patients who have received colonoscopies within the surveillance interval are called interval cancers, and if they arise from missed lesions, they are also called missed cancers.



Prevalence of interval cancer

Study	Subjects	Prevalence	Major findings
Farrar et al. ¹⁴ (2006)	Clinical record of veterans (n=830)	5.4%	27% of interval cancers developed at previous polypectomy segments
Bressler et al. ¹⁵ (2007)	Claims-based administrative data (n=31,074)	3.4%	2.1% in the left colon vs. 5.9% in the right colon
Lakoff et al. ¹⁶ (2008)	Claims-based administrative data (n=111,402)	1.3% vs. 2.2%	Negative colonoscopy has a protective effect for CRC (1.3% vs. 2.2%)
Kahi et al. ⁸ (2009)	Asymptomatic screening cohorts (n=715)	1.7%	48-67% CRC reduction with screening colonoscopy
Kaminski et al. ¹⁷ (2010)	National CRC screening program in Poland (n=45,026)	0.09%	Association of interval cancer risk with ADR
Mulder et al. ¹⁸ (2010)	Administrative primary care data (n=457,014)	2.9% vs. 4.4%	Protective effect with previous examinations for CRC (2.9% vs. 4.4%)
Singh et al. ¹² (2010)	Manitoba Cancer Registry database (n=4,833)	7.9%	4.5% in the left colon vs. 14.4% in the right colon
Singh et al. ¹⁹ (2010)	Manitoba database (n=45,985)	3.0%	0.6% in the left colon vs. 2.1% in the right colon
Baxter et al. ²⁰ (2011)	Claims-based administrative Et cancer registry (n=14,064)	9.0%	6.8% in the left colon vs. 12.4% in the right colon
Cooper GS et al. ¹¹ (2012)	SEER database (n=57,839)	7.2%	2.9% in the left colon vs. 4.9% in the right colon
Brenner et al. ²¹ (2012)	Population-based case-control study (CRC n=1,945)	4.0%	Substantial proportion of interval cancers are due to missed lesions
Horiuchi et al. ²² (2012)	Single center colonoscopy registry (n=3,212)	0.3%	2.3% in the left colon vs. 13.3% in the right colon, Japanese data
Huang et al. ²³ (2012)	Post-polypectomy surveillance data (n=1,794)	0.8%	2.9 cases/1,000 person-year in follow up colonoscopy
Kim et al. ²⁴ (2013)	Single center CRC registry (CRC n=482)	6.2%	2.5% in the left colon vs. 3.3% in the right colon, Korean data
Erichsen et al. ²⁵ (2013)	Population-based cohort study (CRC n=36,686)	2.6%	Majority interval cancers may be missed lesions, without aggressive biology
Samadder et al. ²⁶ (2014)	Population-based study (n=126,851, CRC n=2,659)	6.0%	Right colon location (OR 2.24) family history of CRC (OR 2.27)

CRC, colorectal cancer; ADR, adenoma detection rate; SEER, Surveillance, Epidemiology, and End Results.

Factors implicated in interval cancers

1. Missed lesion
2. Incomplete resection of precancerous lesion
3. Tumor biology
4. serrated pathway(sessile serrated adenoma)

1, 2 는 적절한 질 관리로 극복이 가능함.

Colonoscopy quality

- ADR : important quality indicator for predicting the risk of interval cancers after screening colonoscopy.
- Withdrawal time : >6min is strongly correlated with and increased ADR.
- Complete colonoscopy
- Adequate bowel preparation
- Complete resection for neoplastic lesion
- Careful inspection of the oral side of the mucosal folds.

Quiz

- 소화기내과 의사가 대장내시경 검사를 시행하였다.
 - 의사의 선종 발견율 : 30%
 - 장정결 정도 : 불완전 하나 흡인으로 제거 가능함.
 - 관찰 범위 : 맹장 및 말단 소장부까지
 - 내시경 삽입 시간 : 15분
 - 내시경 회수 시간 : 3분

대장내시경의 질 관리에 해당하는 항목 중 가장 적절하게 시행되지 않은 것은?

- ① 선종 발견율 ② 장정결도 ③ 관찰 범위 ④ 내시경 삽입시간
- ⑤ 내시경 회수 시간

EndoRings



A 4-arm Clinical Trial of Fuse®, EndoCuff™, EndoRings™ and Standard Colonoscopy

This study is enrolling participants by invitation only.

Sponsor:

Indiana University

Information provided by (Responsible Party):

Douglas K. Rex, Indiana University

ClinicalTrials.gov Identifier:

NCT02345889

First received: January 13, 2015

Last updated: December 6, 2016

Last verified: December 2016

[History of Changes](#)

[Full Text View](#)

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[No Study Results Posted](#)

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► Purpose

Adenoma detection rate (ADR) is a validated marker for reducing the risk of interval colorectal cancer after a screening colonoscopy. Recent studies suggest that novel devices attached to the colonoscope tip may improve the ADR of doctors performing a screening procedure

<u>Condition</u>	<u>Intervention</u>
Colorectal Neoplasms	Device: Colonoscopy with EndoCuff™ Device: FUSE® Colonoscopy Device: Colonoscopy with EndoRings™ Device: Standard Colonoscopy

Study Type: **Interventional**

Study Design: **Allocation: Randomized**

Intervention Model: Parallel Assignment

Masking: Single Blind (Subject)

Primary Purpose: Screening

Official Title: **A 4-arm Randomized Controlled Trial of Fuse®, EndoCuff™, EndoRings™ and Standard Colonoscopy**

<https://clinicaltrials.gov/ct2/show/NCT02345889>

Interval cancers are missed rather than de novo

- Recent evidence suggests that interval cancers are caused by a deficiency in the quality of colonoscopy rather than accelerated tumor biology.
- This is good news, as most interval cancers may be prevented by improving colonoscopy quality.

Interval cancers are missed rather than de novo

- First, interval cancers may develop from suboptimal quality indicators such as withdrawal time, ADR, complete colonoscopy, and bowel preparation, as well as incomplete resection of previous neoplastic lesions.
- Second, the grade, stage, histology, and survival patterns do not differ between patients with interval cancer and those with non-interval cancer.

Interval cancers are missed rather than de novo

- Finally, cases of missed cancer are more common when the colonoscopy is performed by non-gastroenterologists.

Conclusion

- Considering the significant number of interval cancers that are encountered in daily clinical practice, the importance of adequate training and improvement of colonoscopy quality as causative factors in interval cancers should be highlighted.
- Continuous monitoring of colonoscopy quality, which is amenable to improvement, cannot be overstated to prevent the occurrence of interval cancers.

Take home messages

- 본인의 ADR 을 계산해보기.
- Withdrawal time: 가능하면 6분 이상으로.
- Adequate bowel preparation : 본인이 사용하는 장정결제에 대하여 자세히 알고, 필요 시 환자에게 직접 복용법을 설명
- 본인이 완전 절제를 하기 힘들 것으로 생각되는 병변이 있다면 적절한 의료진께 refer 합시다.