

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 19, DDW Washington, 2007

Presenter: R. Schoen



World Organisation of
Digestive Endoscopy

**Limitations of Lesion-Size Based
Screening for Colorectal Cancer**

Robert E. Schoen, MD, MPH
Professor of Medicine & Epidemiology
University of Pittsburgh, Pittsburgh, PA

DDW 2007

Limitations of Size Based Screening

- **Bad things in Small Lesions:**
< 1 cm
- **Inaccurate sizing: small
lesions that aren't small**

**Bad Things In Small Packages
(That Are Known To Be Small)**

- **Pathologic Studies 6 - 9mm:**
CA < 1%; HGD ~ 4%
- **N=3912 polyps ≤ 9mm:**
CA 0.2%; HGD/villous ~ 4.2%

Van Dam, Gastro 2004;127:970
Butterly, CGH 2006;4:343

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 19, DDW Washington, 2007

Presenter: R. Schoen

Working Group on CTC

Polyp ≥ 1 cm \longrightarrow Referral for CS
 ≥ 3 polyps 6-9 mm \longrightarrow Referral for CS
< 3 polyps 6-9 mm \longrightarrow "Reasonable" to defer repeat CTC for 3 yrs
 ≤ 5 mm \longrightarrow Ignore

Zalis, Radiology 2005;236:3

Inaccuracy in CTC Size Determination

- Irregularly shaped lesions: underestimated
- Inaccurate electronic caliper placement: overestimated

Zalis, Radiology 2005;236:3

Size-based Observational Screen:
End Result at Colonoscopy
PLCO Trial: Distal colon findings on CS, based on observational size at FSG; N=10,850

N	Polyp Size	<1cm but Villous/HGD	≥ 1 cm
3609	0.5-0.9 cm	198 (5.5)	357 (9.9)
5429	< 0.5 cm	102 (1.9)	148 (2.7)

- 0.5-0.9 cm, 15-16% risk of advanced lesion by size or histology
- < 0.5 cm, 4-5% risk of advanced lesion

Schoen, Gastro 2006;131:1683

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

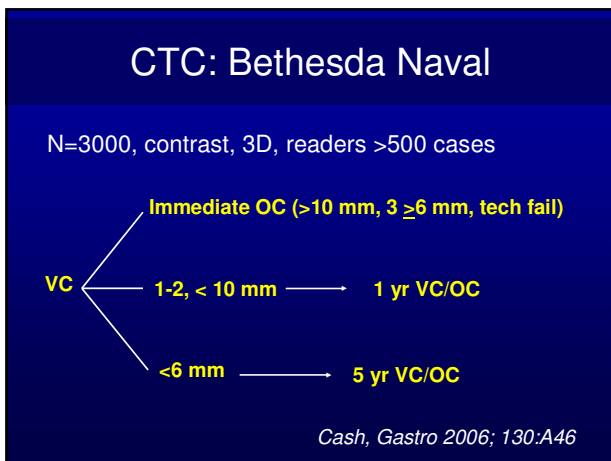
Saturday, May 19, DDW Washington, 2007

Presenter: R. Schoen

Relationship Between Polyp Size at FSG and in Distal Colon at Colonoscopy in Subjects with a Single Distal Polyp (N=1795)

Size at FSG	Size at Colonoscopy (mm)								All
	<5	5	6	7	8	9	10	≥11	
%									
Size at FSG									N
5	23.9	30.6	6.4	6.1	6.1	1.4	9.1	16.5	297
6	13.9	16.4	21.3	11.5	8.2	0.8	15.6	12.3	122
7	12.6	12.6	9.2	17.2	11.5	1.2	12.6	3.0	87

- Reasons for Size Discrepancy**
- Underestimated at FSG
 - Overestimated at CS
 - Missed lesion: FSG missed lesion than was detected at CS
 - Different lesion: Large lesion was actually beyond FSG, found in distal colon at CS due to sleeving/accordioning of bowel



CTC: Bethesda Naval

Cash: DDW 2006, Los Angeles

5 pts – 1 year follow-up

CT:T0	CT:T1	OC
6.6	7	12
6	6	6
7	Not	Not
7.9	7	7
6	6	3

Matching 6-9mm Polyps in Virtual and Optical CS

N=1,339 same day OC/CTC

All polyps

OC: 380 polys \geq 6 mm

CTC: Detected 305/380 (sens = 80.3%)

Adenomas

OC: 234/380 adenomas

CTC: Detected 197/234 (sens = 84.2%)

“Matching” Algorithm

- Within 50% of size and within 1 segment:
0.9cm in descending →
0.5-1.3 cm in sigmoid or transverse

CTC Meta Analysis

	Sens	Spec	Prevalence
6-9 mm polyps	70	93	10-22; 17%

Mulhall, Ann Intern Med 2005;142:635

Limitations of Observational Size-Based Screening

- Bad things in Small Lesions
- Inaccurate sizing
- Missed Lesions

Importance of Advanced Histology

N = 1618, adenomas on rigid sig, 14 y f/u

Overall risk colon CA = 2.1	RR
Low Risk: Tubular, < 1 cm, even if multiple	0.5
High Risk: ≥ 1 cm, TV or villous	3.6
Very High Risk: Advanced & multiple	6.6

UK Trial Employs Bx As Criteria For CS Referral

Atkin, NEJM 1992; 326:658

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 19, DDW Washington, 2007

Presenter: R. Schoen

Predictors of Advanced Proximal Neoplasia

Prevalence of APN according to distal findings

Difference	AA Prevalence (%)	OR
No adenoma	4.8	Ref
TA < 1 cm	4.7	1.0
TA ≥ 1 cm	5.2	1.7 vs. TA < 1 cm
TV or villous	11.7	2.5 vs. TA

Levin, JAMA 1999;281:1611

Decision Analysis: Management 6-9 mm Polyps

Markov model, modeled adenoma & CRC transition probability

	Wait	Colo	Net Difference (%)
Deaths (CRC + Colo)	79	14	65 (.07)
CA (Initial + Subqnt)	773	392	381 (.38)
Local	418	372	46 (.05)
Regional	271	15	257 (.26)
Distal	84	5	79 (.08)

Conclusion: Observing 6-9 mm polyps will result in more death & cancer

Hur, CGH 2007;5:237
