

COMPLICATIONS OF COLONOSCOPY

Patient Population

Average risk – every 10 years over the age of 50

Family history of:

- Colon cancer – every 10 years over the age of 40
- FAP – every year from puberty
- HNPCC – every 1-2 years starting in 20's

History of colon cancer – every 5 years

Inflammatory bowel disease – every 1-2 years starting 8 years from onset (15 for left sided only)

Average per Gastroenterologist – 407 procedures/year

Therapeutic – 1 polypectomy / 1500 colonoscopies

Reported Complications

Major

- Perforation
- Bleeding requiring treatment
- Arrhythmia
- MI/CVA
- Chemical colitis (gluteraldehyde)
- Tearing of mesenteric vessels
- Combustion of bowel gas
- Bacteremia (therapeutic)
- Retroperitoneal abscess (therapeutic)
- Entrapment of local bowel (therapeutic)

Minor:

- Vasovagal episode
- Desaturation requiring oxygen
- Minor bleed
- Dehydration
- Pain

Major Complication Rates

VA study – 3000 patients, prospective, all colonoscopies

ASGE study – 25,000 patients, retrospective, diagnostic and therapeutic

German study – 96,000 patients, retrospective, diagnostic and therapeutic

	VA	ASGE		German	
		Diagnostic	Therapeutic	Diagnostic	Therapeutic
Perforation	0.0	0.2	0.32	0.005	0.06
Bleeding	0.22	0.09	1.7	0.001	0.26
Arrhythmia	0.03				
MI / CVA	0.12			0.01	0.01

Risk Factors for Complications

#1 – quality of bowel prep

- strictures
- obstruction
- acute angle flexure
- anticoagulation (hemorrhage from polypectomy)
- experience
- Fleets (10%) vs. polyethylene glycol (0%) for combustible levels of bowel gas

NO CORRELLATION – age, race, diverticulosis, BMI, DM, prior abdominal surgery, sedation level

Bleeding

Major bleeding defined as needing hospitalization, transfusion or surgery

Etiology – usually from polypectomy (no comment on technique)

Diagnosis – evident during procedure, BRBPR, PE

Treatment

- Endoscopic
 - Injection with vasopresson
 - Electrocautery
 - Band ligation
 - Endo loop
- Interventional
 - Injection of vasopresson
 - Embolization
- Surgical – unstable patient, continuous hematocrit drop
 - Theoretical – no patient required surgical intervention

Perforation

- May be free or miniperforation
- 64% rectosigmoid, 13% cecal, remainder distributed equally

Etiology

- Direct mechanical (simple, through diverticulum, tight flexure, stricture, lateral pressure)
- Barotraumas (210 mm Hg to rupture. Average 8-57 mm Hg, 240 mm Hg at tip of scope)
- Transmural polypectomy

Diagnosis

- Pain, distension, peritoneal signs, fever, leukocytosis
- **10% asymptomatic***
- CXR – free air
- CT scan more sensitive

Treatment

- Conservative – NPO, IV fluids, antibiotics, serial exams – more common in Europe?Asia
 - No peritonitis X 48 hours (likely retroperitoneal)
 - Mild peritonitis (grade I & II) without sepsis and improving symptoms
 - Visualized small point of perforation
 - One study showed no outcome difference between resection, oversew and conservative
- Endoscopic – two successful reports
- Operative
 - Large perforation
 - Peritonitis with sepsis or grade III or IV

Operative Treatment

- Several case reports of successful laparoscopic repair, oversew and resection with primary repair
- One study suggests to oversew all small iatrogenic
- Another study based on small series with no statistical significance showed the following trends:

Resection with primary anastomosis

- Gold standard since 1994
- Commonly used for grade I and II peritonitis

Hartmann's Procedure

- For grade III and IV with significant fecal contamination
- Sick patients (unstable, comorbidities)

Colostomy

- Unresectable lesions
- Sick patients

Subtotal Colectomy

- Proximal damage

Related Topics

- Surgeons vs. Gastroenterologists vs. Family Doctors as providers
- Flexible sigmoidoscopy with FOBT vs. colonoscopy
- Virtual colonoscopy