Strategies in Obstructed Colon Cancer

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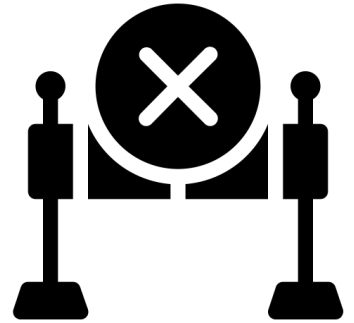
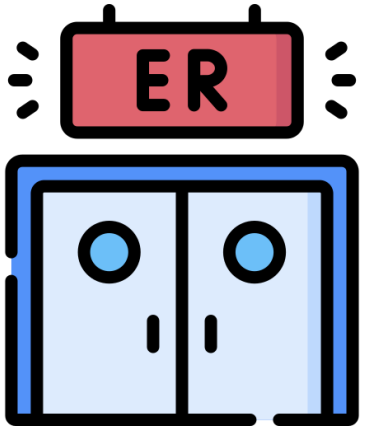
Disclosures

- None

Introduction

- Obstructive colon cancer
  - 10-18% of patients initially diagnosed with colon cancer
  - Spontaneous colon perforation may occur at tumor or proximal segment → high morbidity & mortality
  - Obstruction → independent high-risk feature of recurrence
  - Emergency surgery → worse short- and long-term outcomes vs elective

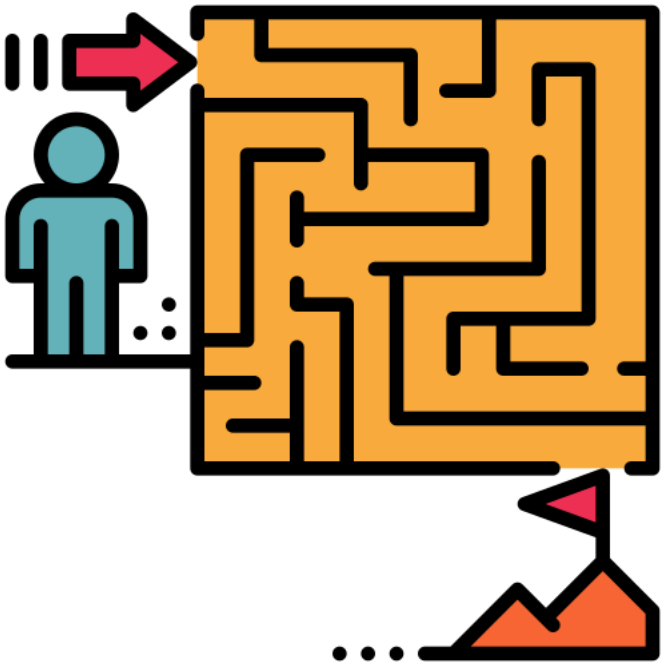




JAMA Netw Open. 2020 May
Surg Today. 2019 Jan;49(1)
Colorectal Dis. 2013 Sep;15(9)
Surgery. 2018 Dec;164(6)

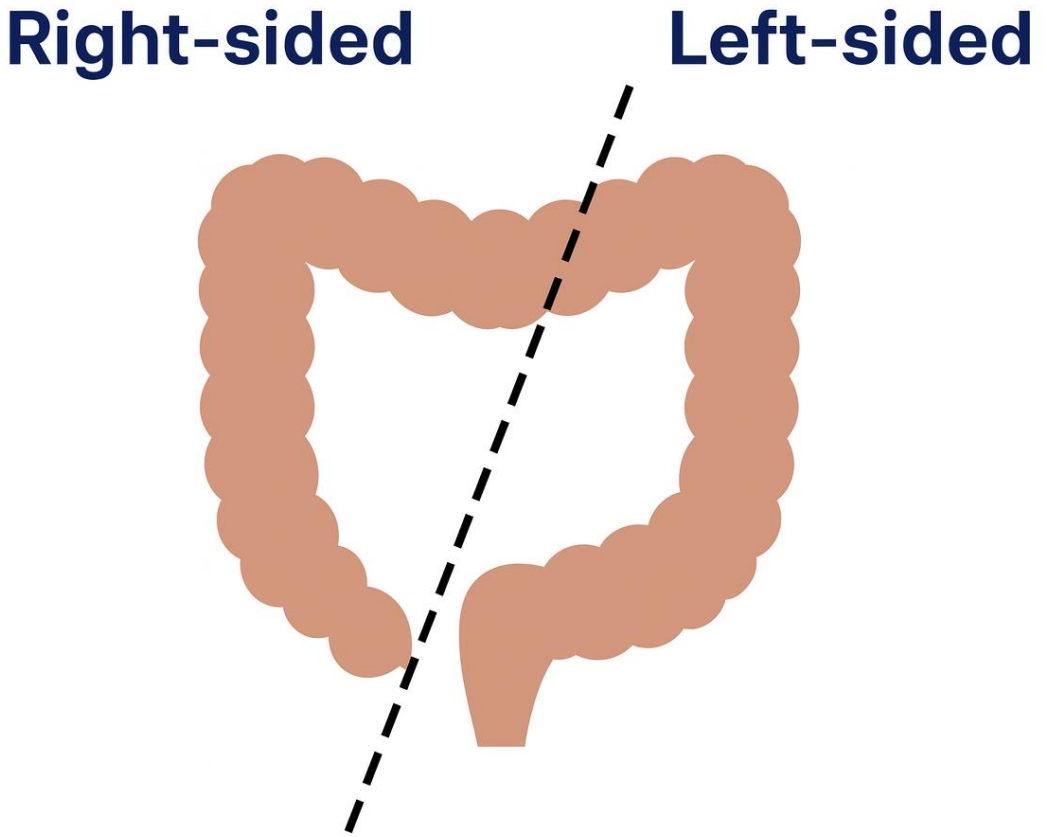
Introduction

- Management is complex and challenging
  - Poor general condition at presentation
  - Limited information on cancer stage
  - Urgent need for immediate intervention in emergency setting



Location

- Bulky tumor
- Usually more locally advanced than left



- > 50% in left colon → most common in sigmoid
- Rectum least frequent
- Treatment options are more diverse and controversial

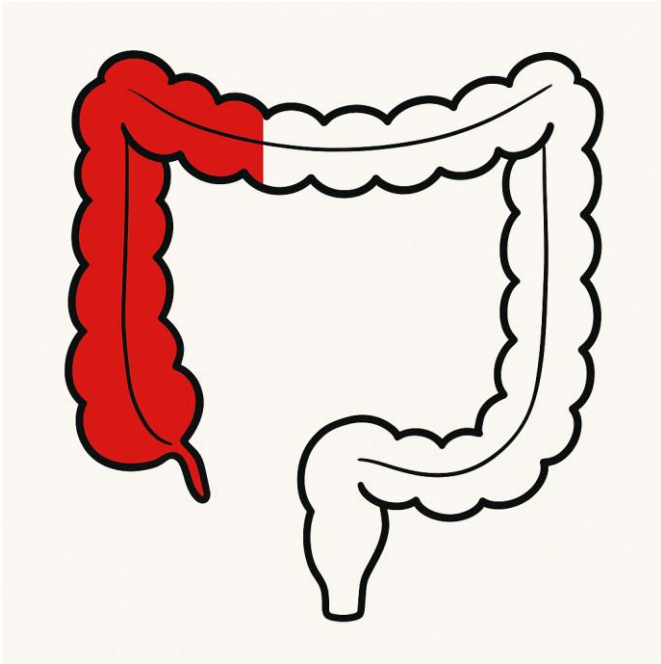
Right-sided Cancer Obstruction

Review > World J Emerg Surg. 2018 Aug 13:13:36. doi: 10.1186/s13017-018-0192-3. eCollection 2018.

2017 WSES guidelines on colon and rectal cancer emergencies: obstruction and perforation

Table 5 Treatment option for ORCC

Main options	Choices among main options
Resection and anastomosis	
Resection and anastomosis with proximal stoma creation	
Resection and stoma creation	
Stoma creation	
Intestinal internal bypass	
Endoscopic stent placement	Palliative/definitive
	Bridge to surgery



World J Emerg Surg. 2018 Aug.

Right-sided Cancer Obstruction

The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Colon Cancer

Jon D. Vogel, M.D.[1] • Seth I. Felder, M.D.[2] • Anuradha R. Bhama, M.D.[3]
Alexander T. Hawkins, M.D.[4] • Sean J. Langenfeld, M.D.[5] • Virginia O. Shaffer, M.D.[6]
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Amy L. Lightner, M.D.[3] • Daniel L. Feingold, M.D.[10] • Ian M. Paquette, M.D.[11]

17. For patients with obstructing right or transverse colon cancer and curable disease, initial colectomy or initial endoscopic stent decompression with subsequent interval colectomy may be performed. Grade of recommendation: strong recommendation based on low-quality evidence, 1C.

Right-sided Cancer Obstruction

- Traditional approach:
  - Primary oncologic resection → Right hemicolectomy / extended right hemicolectomy with ileocolic anastomosis

- Surgeons prefer ileocolic anastomosis even in emergency settings in frail patients compared to colocolic or colorectal anastomosis

- Elderly patients (≥75 yrs): 97% received upfront surgery; primary anastomosis rates similar to younger patients

World J Emerg Surg. 2018 Aug.
Dis Colon Rectum 2019; 62

Right-sided Cancer Obstruction

- High risk of anastomotic leakage & leakage-related mortality
  - Morbidity after emergency right hemicolectomy: 46–54% (vs. 30% elective)
  - Anastomotic leak: 12–16.4% (vs. 4.1% elective)
  - Mortality: 14.5% emergency vs. 2.6% elective

- Alternative surgical options:
  - Resection + stoma (loop or end ileostomy)
  - Loop ileostomy alone (unresectable disease)
  - Enterocolic bypass (unresectable disease)

Int J Colorectal Dis 2016; 31
Colorectal Dis 2011;13

Right-sided Cancer Obstruction

- SEMS as bridge to surgery
  - Historically limited, not routine for right-sided obstruction
- Newer evidence:
  - High technical success ~96%,
  - Morbidity ~30%, mortality 1.2% (similar to elective surgery), anastomotic leak ~5.5% (similar to elective surgery)
  - Potential for better short-term outcomes vs. emergency surgery

› Ann Surg Oncol. 2021 Jul;28(7):3545-3555. doi: 10.1245/s10434-020-09124-y. Epub 2020 Oct 16.

A Systematic Review Comparing Emergency Resection and Staged Treatment for Curable Obstructing Right-Sided Colon Cancer

Jeske R E Boeding [1 2], Winesh Ramphal [3], Arjen M Rijken [3], Rogier M P H Crolla [3], Cornelis Verhoef [4], Paul D Gobardhan [3], Jennifer M J Schreinemakers [3]

Am J Gastroenterol. 2015 Oct;110(10)
Ann Surg Oncol 2021; 28:

Right-sided Cancer Obstruction

- Evidence limited: mostly retrospective, selection bias, expertise-dependent

- Consider SEMS if:
  - Tumor beyond cecum on CT
  - No perforation
  - Experienced colonoscopist available

World J Gastroenterol 2019; 25

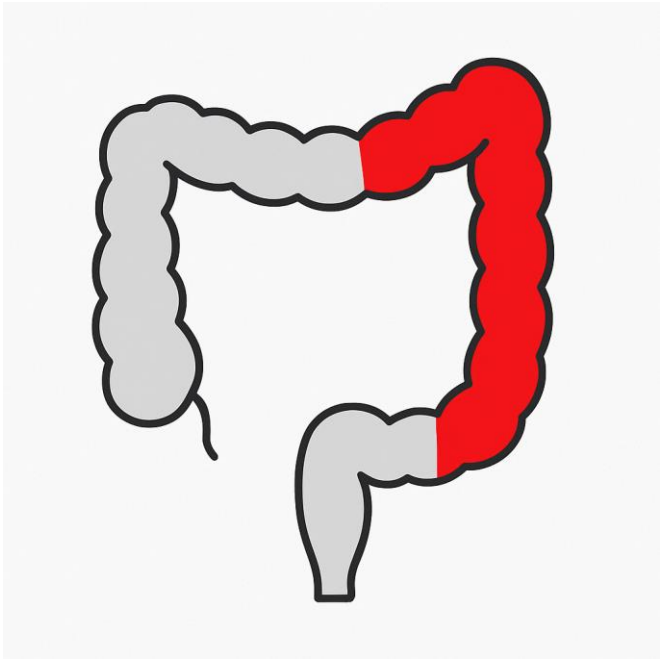
Left-sided Cancer Obstruction

Review > World J Emerg Surg. 2018 Aug 13:13:36. doi: 10.1186/s13017-018-0192-3. eCollection 2018.

2017 WSES guidelines on colon and rectal cancer emergencies: obstruction and perforation

Table 4 Treatment options for OLCC

Main options	Choices among main options	Ancillary manoeuvres among main option and choices
Loop colostomy (C) (bridge to resection or palliation)		
Primary resection with end colostomy: Hartmann's procedure (HP)		
Resection and primary anastomosis (RPA)	Total/subtotal colectomy (TC) Segmental colectomy (SC)	Intraoperative colonic irrigation (ICI) Manual decompression (MD) Covering stoma
Tube decompression		
Endoscopic colonic stenting by self-expanding metallic stents (SEMS)	Bridge to surgery Palliation	



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Left-sided Cancer Obstruction

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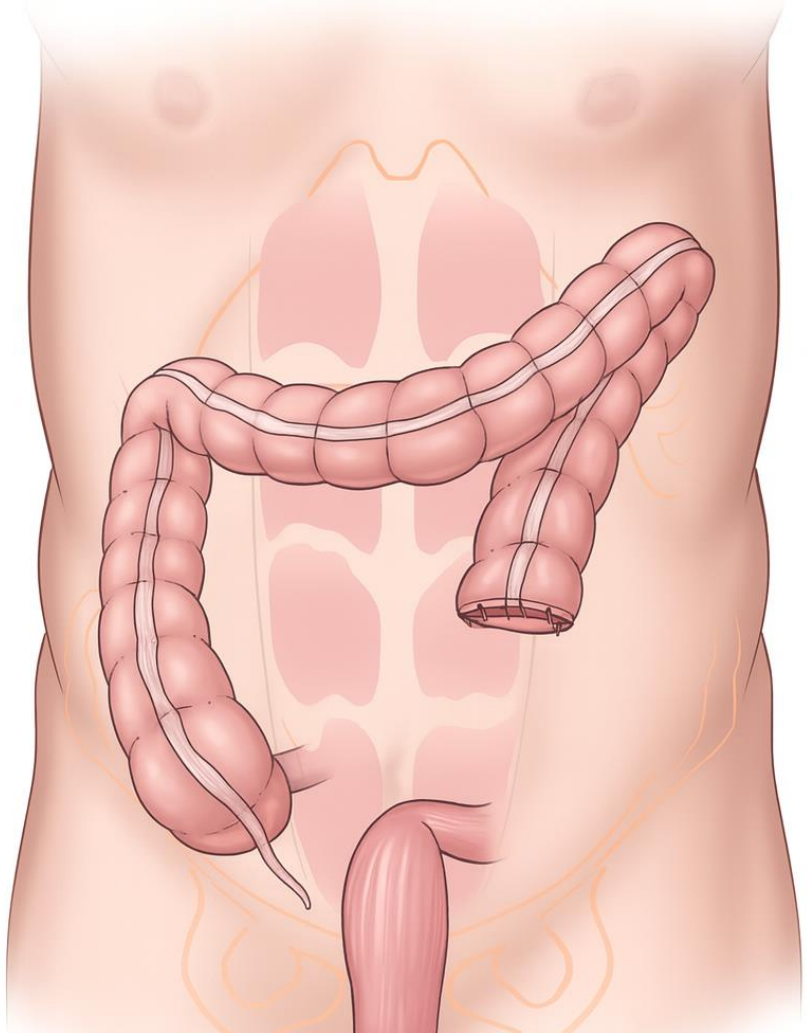
16. For patients with obstructing left-sided colon cancer and curable disease, the choice of endoscopic stent decompression, diverting colostomy with interval colectomy, or initial treatment with oncological segmental colectomy should be individualized based upon patient factors and local expertise of the institution. grade of recommendation: strong recommendation based on moderate-quality evidence, 1B.

Left-sided Cancer Obstruction

- Primary resection + end stoma (Hartmann's procedure)
  - Traditional approach:
    - Historically preferred in emergency
  - Outcomes:
    - High proportion end up with permanent stoma
    - Stoma reversal: only in ~29%; morbidity of reversal 21–36%
    - Considered safe but two staged operation reduces qOl



Am J Surg 2014; 207
Ann R Coll Surg Engl 2018; 100:
Int J Colorectal Dis 2020; 35:

Left-sided Cancer Obstruction

- Diverting stoma (damage control) → later resection ± reversal
  - 2- or 3-stage approach possible
  - Pros: stabilizes patient, allows staging and bowel prep
  - Cons: high cumulative morbidity/mortality, prolonged hospital stay
  - RCT: colostomy vs Hartmann's → no benefit in frail patients
  - Advantage: lower permanent stoma rate

Clinical Trial > Int J Colorectal Dis. 1995;10(1):1-5. doi: 10.1007/BF00337576.

Acute obstruction from tumour in the left colon without spread. A randomized trial of emergency colostomy versus resection

O Kronborg [1]

Int J Colorectal Dis. 1995;10(1)

Left-sided Cancer Obstruction

- Primary Resection with Anastomosis
  - Historically avoided in emergencies due to risk of leak
  - Recent evidence: feasible in selected patients
  - Risk factors for leak: age, comorbidity, malnutrition, contamination
  - Surgical options no difference in RCT:
    - Segmental colectomy + on-table lavage
    - Subtotal/total colectomy (preferred if cecal compromise, synchronous tumors, ischemia)
  - WSEG Guidelines: segmental colectomy preferred unless special indications

Statement 3.4: Total colectomy versus segmental colectomy

In absence of caecal tears/perforation, evidence of bowel ischemia or synchronous right colonic cancers, total colectomy should not be preferred to segmental colectomy, since it does not reduce morbidity and mortality and is associated with higher rates of impaired bowel function. LoE 2, GoR B.

Clinical Trial > Br J Surg. 1995 Dec;82(12):1622-7. doi: 10.1002/bjs.1800821211.

Single-stage treatment for malignant left-sided colonic obstruction: a prospective randomized clinical trial comparing subtotal colectomy with segmental resection following intraoperative irrigation. The SCOTIA Study Group. Subtotal Colectomy versus On-table Irrigation and Anastomosis

Br J Surg. 1995 Dec
World J Emerg Surg. 2018 Aug.

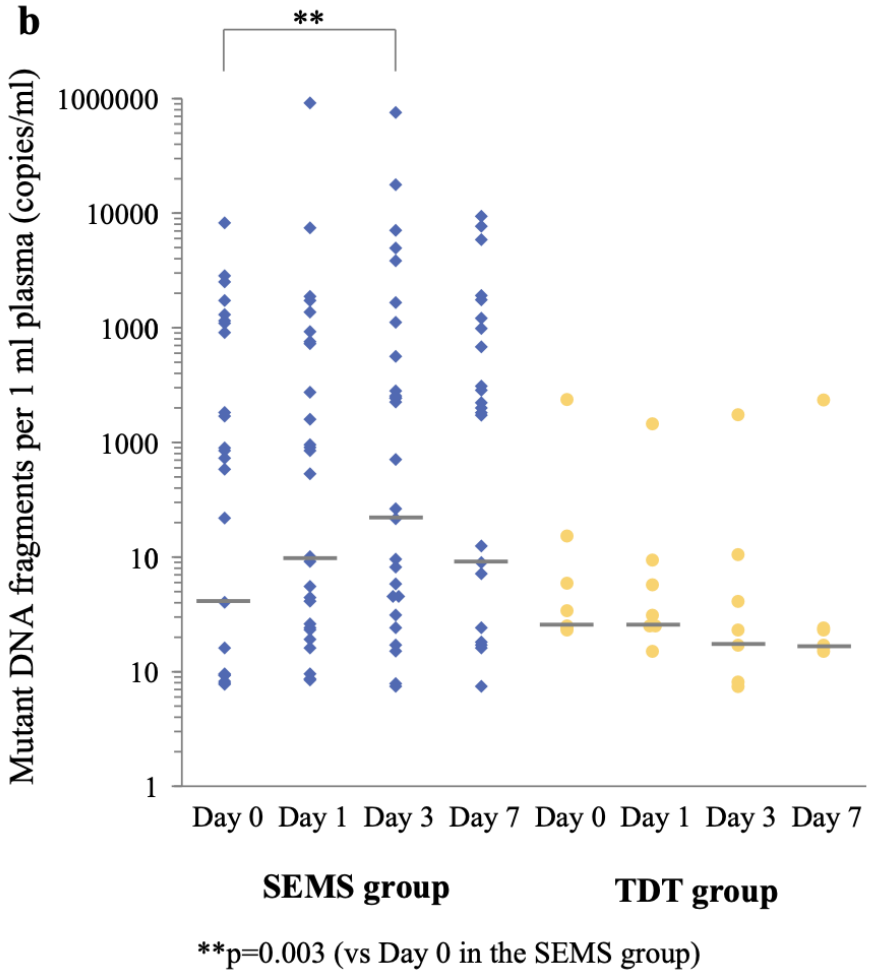
Left-sided Cancer Obstruction

- SEMS as a bridge to surgery
  - Originally for palliation, now widely used as bridge in resectable disease
  - Benefits:
    - Allows stabilization, bowel prep, MIS
    - Fewer stomas, shorter hospital stay, lower morbidity
  - Success rates:
    - Technical: 77–96%
    - Clinical: 83–91%

Am J Gastroenterol. 2015 Oct;110(10)
Gastrointest Endosc 2017; 86
J Gastrointest Surg 2014; 18:
Dis Colon Rectum 2013; 56:

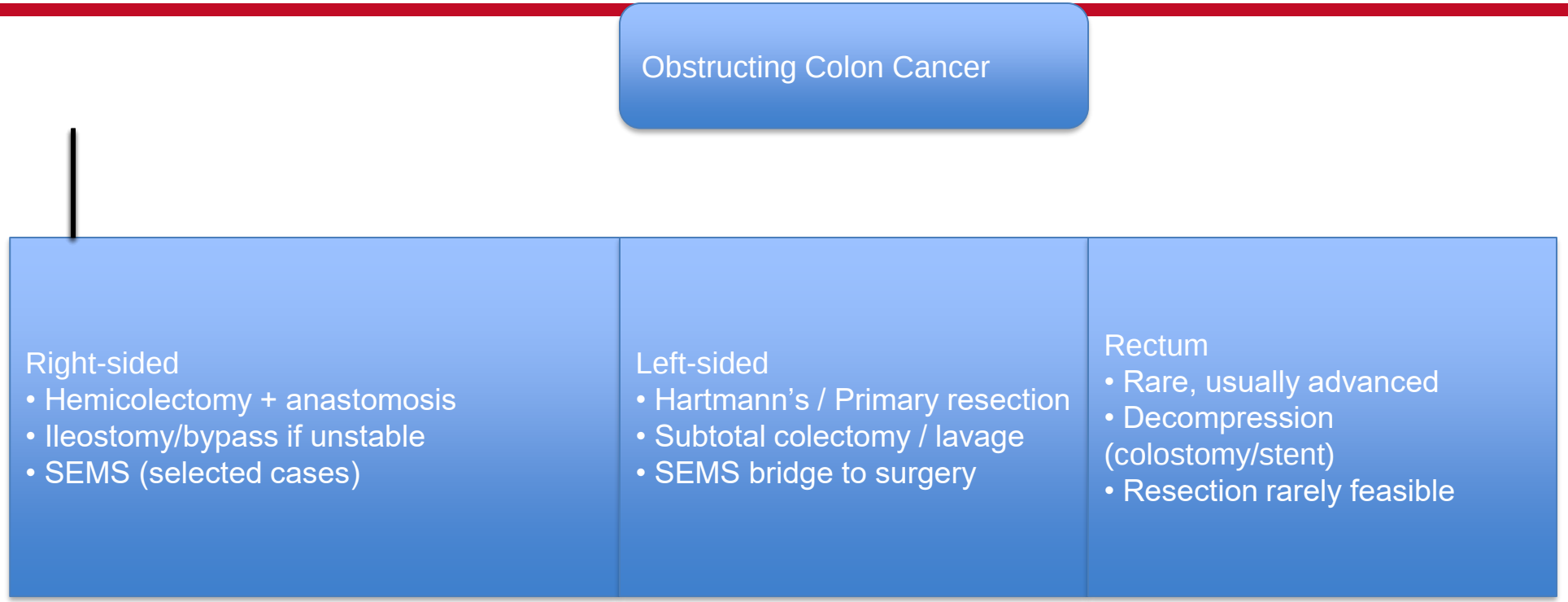
Left-sided Cancer Obstruction

- ctDNA & SEMS Placement
  - Takahashi et al (prospective study)
    - ctDNA ↑ after SEMS in 83% of patients
    - Suggests SEMS manipulation may disrupt tumor microenvironment → risk of dissemination
  - Prognostic impact uncertain → larger, long-term studies needed
  - Increased ctDNA may worsen prognosis



Ann Surg Oncol. 2018 Mar;25(3)

Flowchart: Management of Obstructing Colon Cancer



Take-Home Messages

- Obstructing colon cancer occurs in 10–18% of cases and carries high morbidity and mortality.
- Management strategy depends on location: right-sided, left-sided, or rectal obstruction.
- SEMS offers short-term advantages (fewer stomas, lower morbidity), but oncologic safety remains debated.
- Future directions: ctDNA monitoring and neoadjuvant chemotherapy may personalize treatment.