Tuba City
Regional Health Care Corporation

Colonic Volvulus

Joachim Chino M.D.
Sujata Saha M.D.
Tuba City Regional Health Care
Department of Surgery

1

Disclosures

- No financial disclosures

2

Overview

- **Volvulus**
  - General definition, Epidemiology
- **Sigmoid Volvulus**
  - Epidemiology
  - Clinical Presentation
  - Radiologic Findings
  - Non-surgical Treatment
  - Surgical Treatment
- **Cecal Volvulus**
  - Epidemiology
  - Clinical Presentation
  - Radiologic Findings
  - Non-surgical Treatment
  - Surgical Treatment
- **Summary**
- **Questions**

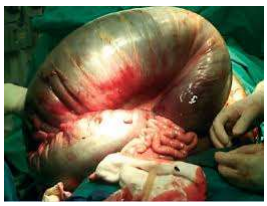
Volvulus

- **Definition:** Large bowel obstruction caused by the twisting of the colon more than 180^{o} about the axis of the mesentery.
- **Epidemiology:**
  - 2-5% of the large bowel obstructions in U.S.

    Sigmoid colon 65-75%

    Cecum 20-25%

    Transverse colon 1-4%
- Worldwide up to 50% of large bowel obstructions.

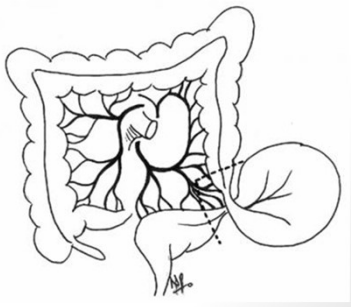


Sigmoid Volvulus

5

Epidemiology

- Most commonly seen in patients over 70.
- Usually a history of chronic constipation.
- Also seen in institutionalized patients with a history of neuropsych conditions.
- These conditions lead to a redundant sigmoid colon, long/floppy narrowed mesentery, twisting of the bowel and mesentery.



6

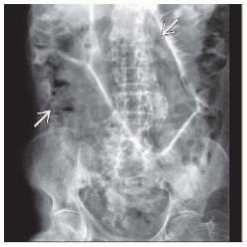
Clinical Presentation

- **History:** Sudden onset abdominal pain, distention, and minimal flatus or bowel movements
- **Exam:** Abdomen markedly distended, tympanic, tenderness. Tachycardia and peritoneal signs are concerning.

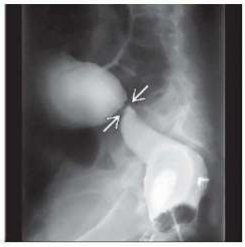
7

Radiology

- Radiographs: "Bent inner tube", "coffee bean", "Bird's beak" – All pathognomonic.
- CT scan: Mesentery "whirl", bowel wall thickening, portal venous air, pneumatosis.



Coffee Bean



Bird Beak

8

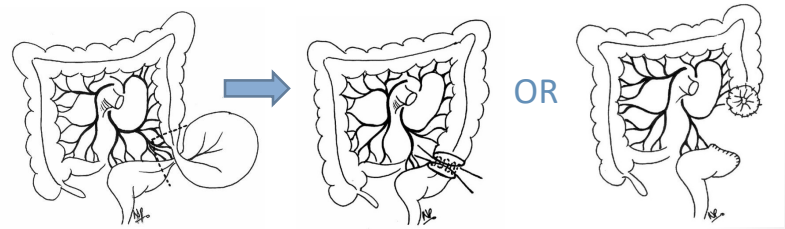
Non-surgical Treatment

- Aggressive resuscitation and non-operative decompression in patients without peritonitis or sepsis.
- Endoscopic decompression allows for elective resection with decreased morbidity/mortality.
  - 85-90% successful with gush of air/ fluid.
  - Placement of rectal tube allows for bowel prep and repeat colonoscopy 1-2 days post.
  - Recurrence rate 50-55%.

9

Surgical Treatment

- If unable to de-torse or emergent operative intervention necessary (sepsis, perforation, necrotic bowel) options include:
  - Resection with anastomosis
  - Resection with colostomy (Hartmann's procedure)
  - Laparoscopic vs Open vs Hand-assist



Anastomosis Hartmann's

10

Surgical Treatment

- Elective resection after bowel prep and colonoscopy allow for laparoscopic sigmoid resection or mini LLQ incision with primary anastomosis.
- Recommend resection during that hospitalization.

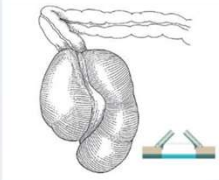
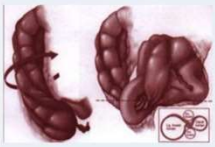
11

Cecal Volvulus

12

Epidemiology

- Two Forms
  - Classic: Axial clockwise torsion around mesentery
  - Bascule: Anterosuperior folding without torsion
- Two Causes
  - Congenital: Failed fusion of the ascending colon mesentery to the posterior parietal peritoneum -> results in floppy cecum
  - Acquired: Adhesions from surgery, chronic constipation
- Two Age-groups
  - 10-30
  - 60-80

Type I cecal bascule	Type II Axial cecal volvulus
Folding of the cecum anterior to the ascending colon	Rotation of the distended cecum around the longitudinal axis of the ascending colon.
	

13

Clinical Presentation

- **History:** Highly variable, from insidious, intermittent episodes of pain to acute episodes. Nausea, vomiting and obstipation.
- **Exam:** Variable. Usually distended and tympanitic. Rebound tenderness if peritonitic/ischemic

14

Radiology

- XRays: “Bent inner tube”, “Coffee bean”, “Bird’s beak” – All pathognomonic.
- CT scan: Mesentery “whirl”, bowel wall thickening, portal venous air, pneumatosis.

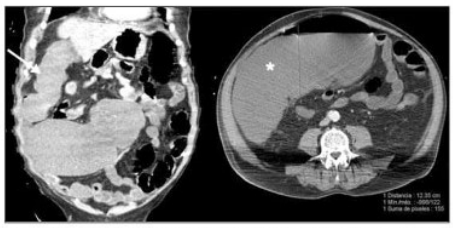
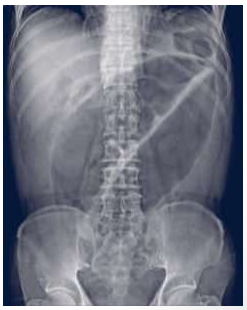


Fig. 1. Coronal and axial TC images shows a 12.3 cm distension of the cecum (*), with normal morphology at the level of the ascending colon (arrow).



15

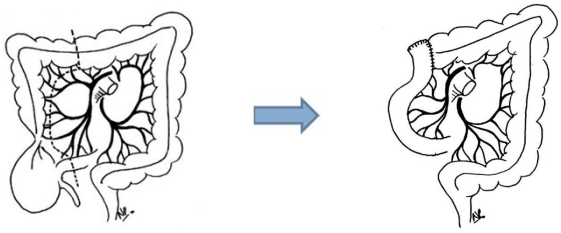
Nonsurgical Treatment

- Do NOT attempt to detorse endoscopically
- Works only 1-5% of time and there is high risk of perforation
- Resuscitate aggressively

16

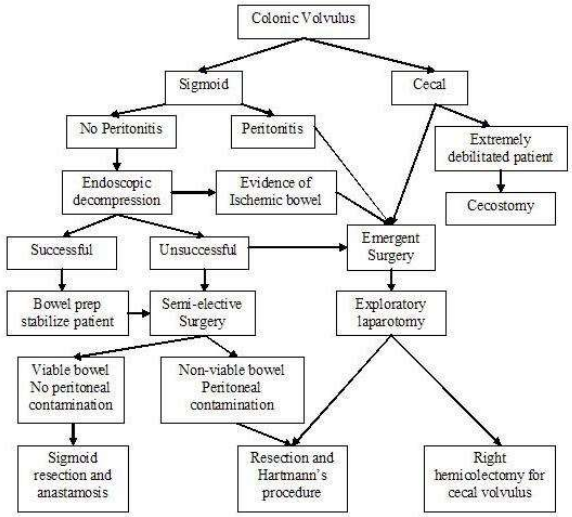
Surgical Treatment

- Stable patients: Right hemicolectomy
  - If bowel is compromised, do not detorse prior to resection to reduce reperfusion
- Unstable patients: Cecostomy
  - If bowel is compromised, ileostomy
- Never option: Cecopexy – NO!
- Open vs. Laparoscopic vs. Hand-assisted



17

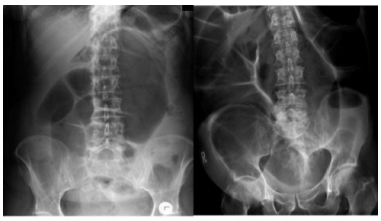
Summary: Approach



18

Cecal vs. Sigmoid

Cecal	Sigmoid
- Axial torsion	- Counterclockwise torsion
- Always surgery	- May attempt endoscopic decompression
Radiographically: - Colonic haustra maintained - One air fluid level	Radiographically: - No haustra - Multiple air fluid levels
- Less common, often younger population	- More common, often older population



Caecal Volvulus Sigmoid Volvulus

19

Case Presentation #1

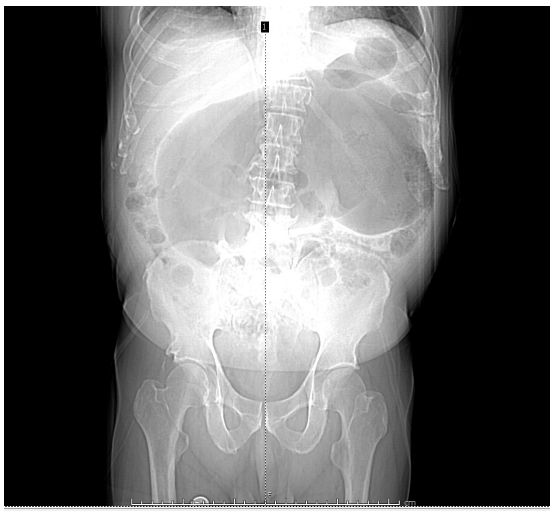
- S.C. 48 y.o. Female transferred from outside facility with CT scan concerning for “colon volvulus”
- E.R. resuscitation, CT review and taken to O.R. for emergent colonoscopy.
- Colonoscopy to transverse colon, red rubber catheter placed. Bowel prep and repeat OC 24 hours later.
- Laparoscopic sigmoid resection following day. Minor wound infection with discharge POD
- Pathology showed no malignancy.

20

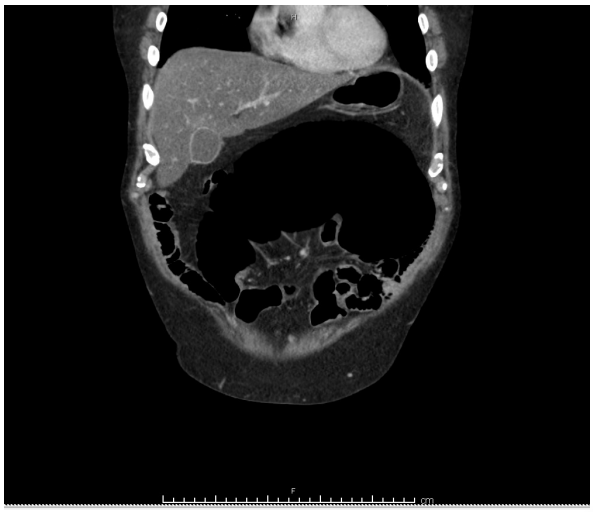
Case Presentation #2

- D.C. 50 yo male transferred from outside facility with diagnosis of “transverse colon volvulus”.
- E.R. rescucitation, C.T. reviewed with radiology (likely a cecal volvulus) and taken to O.R. for open exploration.
- Right hemicolectomy performed.
- ICU admission, EtOH withdrawl and ileus.
- Discharged POD 9.

Case Presentation #2

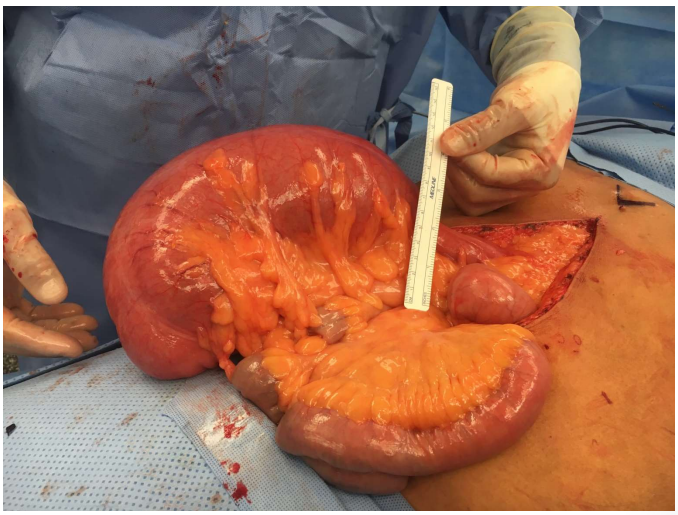


Case Presentation #2



23

Case Presentation #2



24

25

Sources

- Textbook of Surgery. Sabiston, 17th edition.
- Acute Care Surgery. Britt. 2012.
- Diseases of the Colon and Rectum Vol. 59.
  - Clinical Practice Guidelines for Colon Volvulus and Acute Colonic Pseudo-Obstruction. Jon D. Vogel, M.D. , et al

26