Diverticular Disease of the Colon

EPIDEMIOLOGY

- Overall prevalence - 12% to 49%
- Increases with age

  < 10% in those younger than 40 years

  > 50% to 66% of patients 80 years
- As common in men and women
- Men - higher incidence of diverticular bleeding
- Women - more episodes of obstruction or stricture

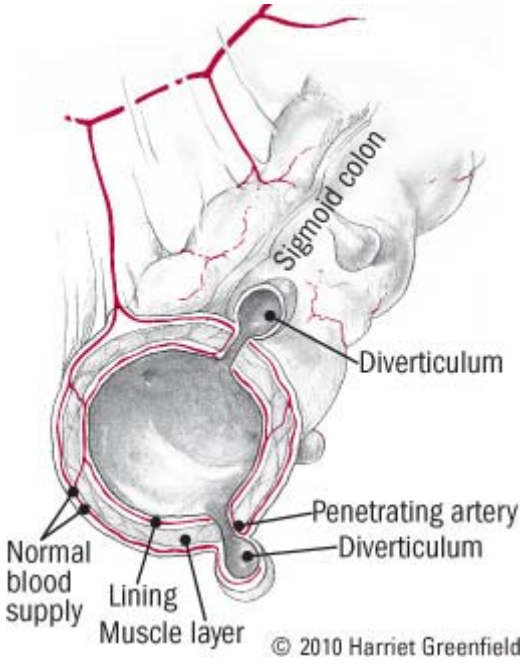
Disease of Western civilization

- Extraordinarily rare in rural Africa and Asia
- Highest prevalence rates - united States, Europe, and Australia
- Increase with urbanization

Factors That Influence the Risk for Diverticulosis

Increased Risk
Increasing age
Dietary meat intake
Living in Western countries (e.g., United States, Western Europe, Australia)
Connective tissue diseases
Decreased Risk
High dietary fiber intake
Living in predominantly rural Asian or African countries (e.g. Kenya, Jordan, Thailand)

*Pseudo*diverticula



Conspicuously absent from the portion of colon between the two antimesenteric taenia

Location

- In Western countries- left colon
  - 90% -- sigmoid
  - 15% have right-sided

- In Asian countries- right-sided

Spectrum

- **UNCOMPLICATED DIVERTICULOSIS**

  (A) ASYMPTOMATIC DIVERTICULOSIS
  (B) SYMPTOMATIC UNCOMPLICATED
  DIVERTICULAR DISEASE (SUDD)

- **COMPLICATED DIVERTICULOSIS**

  (A)DIVERTICULITIS
  - UNCOMPLICATED DIVERTICULITIS - localized phlegmon
  - COMPLICATED DIVERTICULITIS - abscess, free perforation with peritonitis, fistula, or obstruction

  (B)BLEEDING

Hinchey Classification of Colonic Diverticular Perforation

I	Confined pericolic abscess
II	Distant abscess (retroperitoneal or pelvic)
III	Generalized peritonitis caused by rupture of a pericolic or pelvic abscess (**not communicating** with the colonic lumen because of obliteration of the diverticular neck by inflammation)
IV	Fecal peritonitis caused by free perforation of a diverticulum (**communicating** with the colonic lumen)

Diagnosis

- **Plain Films** -abnormal in 30% to 50%
- **Contrast Enema Examinations** - only water-soluble contrast enemas, such as Gastrografin, should be used
- A gentle, **single-contrast study** should be performed and terminated once findings of diverticulitis are discovered,
- Findings -- extravasated contrast material with or without the outlining of an abscess cavity, an intramural sinus tract, or a fistula

Computed Tomography-

- Diagnostic procedure of choice for acute diverticulitis
- Because diverticulitis is mainly an extraluminal disease
- CT criteria for diverticulitis-

- presence of diverticula
- with pericolic infiltration of fatty tissue (often appearing as fat stranding),
- thickening of the colon wall
- and formation of abscesses

Endoscopy

- Suspected acute diverticulitis - endoscopy generally is avoided (risk of perforation, either from the instrument itself or from air insufflation)
- Once the acute phase has passed (one to three months later), a colonoscopy should be electively performed to exclude competing diagnoses, particularly neoplasia

Treatment -Uncomplicated diverticulitis

Outpatient management – When?

- Mild symptoms
- No peritoneal signs
- The ability to take oral fluids
- Supportive home network
- **These patients should be treated with a clear liquid diet and antibiotics.**
- Mixed aerobic and anaerobic organisms

  (Escherichia coli, Streptococcus species, and *Bacteroides fragilis)*

Hospitalization- When?

- Elderly
- Immunosuppressed
- Severe comorbidities
- High fever / significant leukocytosis
- **Bowel rest /Intravenous fluid**
- **Broad-spectrum intravenous antibiotics should be started**

- If improvement continues, patients may be discharged, but they should complete a seven- to 10-day course of oral antibiotics.
- Failure to improve with conservative medical therapy warrants a diligent search for complications, consideration of alternative diagnoses, and surgical consultation

COMPLICATED DIVERTICULITIS

- **Abscess**

- **Small pericolic abscesses (Hinchey stage I)**
- Noninterventional management- with broad-spectrum antibiotics and bowel rest
- Continued of abscesses should be considered only in stable patients who demonstrate unequivocal improvements in pain, fever, tenderness, and leukocytosis over the first few days of therapy.
- Percutaneous catheter drainage

Hinchey stage II- surgery

- Single operation (resection with primary anastomosis) have become the preferred surgical approaches
- Two-stage management - *Hartmann procedure*

- CT-guided percutaneous drainage of abdominal abscesses has assumed a prominent complementary role to surgery
- It often eliminates the need for a multiple-stage surgical procedure with colostomy

Hinchey stages III or IV

- Surgical emergency and requires urgent operative intervention

Fistula

- Fewer than 5% of patients
- Single-stage operative resection with fistula closure and primary anastomosis could be performed in 75% of patients

- Obstruction
- Obstruction can accompany diverticular disease either acutely or chronically

DIVERTICULAR HEMORRHAGE

- Most common identifiable cause of significant lower gastrointestinal bleeding
- (30% to 40% of cases)

- Western patients/ Asian patients - right-sided
- Intimal thickening and medial thinning of the vasa recta as it coursed over the dome of the diverticulum.
- segmental weakening of the artery, thus predisposing to its rupture.

- Nonsteroidal anti-inflammatory drugs (NSAIDs) have been implicated in lower intestinal, and specifically diverticular, bleeding

CLINICAL FEATURES

- Abrupt, painless hematochezia
- Arterial, the volume of blood usually is moderate or large
- Patients often pass red or maroon clots; melena is unusual
- Neither a positive fecal occult blood test nor iron-deficiency anemia should be attributed to diverticular hemorrhage

- Bleeding ceases spontaneously in 70% to 80% of patients
- Rebleeding rates range from 22% to 38%.

DIAGNOSIS AND TREATMENT

- Resuscitation
- If bleeding is massive or if the patient remains unstable after attempted resuscitation, early angiography to attempt bleeding localization and surgical consultation should be obtained.

- A stable patient with suspected active or recent diverticular bleeding should undergo bowel preparation for a colonoscopy

- If diverticula are found but bleeding has stopped and no other colonic causes are found, a presumptive diagnosis of diverticular hemorrhage is made and the patient should be instructed to avoid NSAIDs and anticoagulants, if possible.
- As noted, most patients with diverticular hemorrhage do not rebleed

- The endoscopic identification of active bleeding
- Stigmata of recent hemorrhage stigmata—visible vessel or adherent clot within a diverticulum
- The use of epinephrine injection alone or in combination with other therapies such as heater probe coagulation, bipolar coagulation endoclips,fibrin sealant,and band ligation

- If endoscopic therapy is not effective or durable, localizing the site facilitates directed therapy with angiography or segmental surgical resection
- When active bleeding is present but colonoscopy fails to allow localization or treatment of a bleeding source, further evaluation with nuclear scintigraphy (tagged red blood cell scan) or angiography can be undertaken

- Surgery for lower intestinal bleeding usually is avoided unless endoscopic or angiographic therapies are unavailable or fail