

Vesalius SCALpel™ : Inflammatory bowel disease (see also: colorectal folios)

Crohn's

M=F, familial association: siblings up to 30%, 1st degree relative 10% chance
smoking increases risk of symptoms (vs protective effect in UC)

etiology

autoimmune: hyperaccelerated response to mucosal injury

lymphocyte mediated (eliminating lymphocytes stops disease)

CD4 lymphocytes, macrophage activation, cytokine release

bacteria may play a secondary role

antisacromyces antibodies (ASCA) seen in 50% of Crohn's, 20% of UC

granulomas seen in > 50% of advanced cases

small bowel alone 20-30%, ileocolic 55%, colon alone 25%, gastroduodenal 3% (exclude

giardia, h. pylori, mouth/esophagus 2%

pancolitis uncommon (v UC), can do segmental resection

non-bloody diarrhea (v UC)

acute presentation rare

most common cause of psoas abscess

active rectal disease influences rectovaginal and perianal fistula outcome

Rx

antibiotics: metronidazole, fluoroquinolones

anti-inflammatory/immunosuppressive:

sulfasalazine: cleaved by colonic bacteria to sulfa and 5ASA, topical effect
prednisone (for acute, no role in maintaining remission or preventing
recurrence)(more effective for small bowel than colon)

azothioprine (6MP) PO immunosuppressive, kills lymphocytes
treatment of active disease and reduce/delay recurrence

methotrexate, 6MP

cyclosporine, poor response

infliximab/remicade IV:

chimeric mouse IgG antibody against tumor necrosis factor
interrupts inflammatory cascade (other than killing lymphocytes)

not for use in sepsis or undrained abscess

highly effective in achieving remission, speeds healing of
enterocutaneous, perianal fistula (50%), best Rx

20% develop anti-infliximab antibodies, especially at lower doses,
decreasing effectiveness

pretreatment with 6-MP decreases antibody formation

serum sickness, expensive

not effective for stricture

can reactivate Tb

antibiotics (flagyl) and immunosuppression (azothioprin, immuran) may
maintain remission when other agents fail

75% will come to surgery > 20y, 90% > 30y

50-70% eventually have perianal disease

operative indications:

obstruction, intractability (50% of indications), abscess, fistula (35%), perianal, toxic megacolon, hemorrhage, cancer
loose, draining seton for draining fistula; medical Rx before attempt definitive surgery; may require endorectal advancement flap
enterovesical fistula absolute indication for surgery; not for enteroenteric fistula

surgery

goal, preserve as much bowel length as possible
resect to grossly, not necessarily histologically normal bowel
stricturoplasty whenever possible with multiple areas
fibrotic, not active inflammation

recurrence

smoking increases risk
ileocecal highest recurrence of all patterns
90% Endoscopic recurrence < 3y
clinical disease 70% 3-5y
50% surgical disease @5y
reoperation: iliocolic > ileal > isolated colonic (most favorable)
2 groups: indolent, fulminant

short bowel syndrome

< 120cm = short bowel, < 70cm TPN dependent (45cm with ileocecal valve preserved)
diarrhea, fluid and lyte disturbance, malnutrition, gallstones (interruption of enterhepatic circulation), nephrolithiasis (hyperoxaluria from increased oxalate absorption)
proximal resection better tolerated than distal (better ileal adaptation)
diarrhea from hypergastrinemia/gastric hypersecretion or bile acid malabsorption
Rx: fiber, opioids, H2 block, bile acid binders (cholestyramine)
infants adaptation possible with 15-25cm & intact ileocecal valve, 40 cm without
enteral feeding essential for adaptation, complex macronutrients to maximize mucosal work

terminal ileitis

Crohn's v Yersinia, campylobacter infection
Dx stool culture, scope, Bx
mesenteric fat wrapping not seen in infectious ileitis

Ulcerative colitis (UC)

twice as common as Crohn's, M=F, 10-30% familial, smoking protective
90% chronic relapsing, 10% fulminant
crypt inflammation, abscess (always present), ulcer
rectum involved 95% of time (10% of isolated colonic disease indeterminate between Crohn's and UC)
ulcerative proctitis alone in 30-40% of cases, L colon 40-50%, pancolitis 30-40%

reactive atypia associated with flare up, resolves, no malignant potential v dysplasia
extraintestinal manifestations: sclerosing cholangitis, cholangiocarcinoma, iritis,
enteropathic arthritis, ankylosing spondylitis, pyoderma gangrenosa, erythema nodosa
pyoderma gangrenosa (usually extremities, clinical Dx)

Rx hi dose steroids
if peristomal resite stoma

medical Rx

sulfasalazine, other 5-ASA preparations, oral and topical
mesalamine enema (5ASA preparation)
azathioprine, cyclosporine (rarely used)
(infliximab not indicated)
prednisone for acute episode, but not maintenance
does not prevent recurrence

cancer risk

0.5-1.0% per year after 10y
risk proportional to extent, severity and duration
cancers detected later, but same virulence stage for stage
more multicentric, evenly distributed, more proximal than sporadic
no clear adenoma to cancer sequence; goes from flat mucosa to cancer without polyp
88% of UC colon cancers have associated dysplasia, some cancers develop without
evidence of dysplasia, no colonoscopic clues
indeterminate mass, stricture that can't get by, bx, do colectomy

surgery

ileoanal anastomosis no longer done (anal incontinence), proctocolectomy with Brooke
ileostomy rare, ileoanal pouch most common now
if candidate for sphincter sparing, can do ileoanal pouch (+/- protective temporary
diverting ileostomy)

Diverticulitis

Hinchey classification:

- I confined pericolic
- II distant abscess
- III peritonitis, abscess rupture, no bowel communication
- IV fecal peritonitis, communication with bowel

uncomplicated treat with antibiotics, mild outpatient, significant in hospital IV antibiotics
to improvement, switch to oral antibiotics and discharge (no need for additional 24h
observation on oral antibiotics)

increasing in younger, especially obese women

younger (<50) no longer considered higher risk for complications and recurrence

2% recurrence rate/y

complications: abscess, perforation, fistula (secondary to abscess, drainage into adjacent
structure; most common cause of colovesical fistula > cancer > Crohn's)

complicated diverticulitis requiring surgery: resect if possible v divert

resect down to rectum where taenia splay and diverticulae end
5% recurrence after elective resection
scope 6w after acute episode r/o cancer
no surgery until 3rd or 4th attack unless immunosuppressed

C. difficile colitis

10-20% of antibiotic associated diarrhea due to c. diff
within 3w of antibiotics
spore-forming toxic bacteria
c. diff spores not killed by alcohol, only bleach; hand washing more effective > alcohol
risks: > 65, broad spectrum antibiotics (especially aminoglycosides), immunosuppression,
chemotherapy, severe disease
narcotics and antiperistaltics increase risk of progression
Dx: enzyme immunoassay most common and rapid, but 10-20% false negative
c.diff toxin A/or B, repeat if negative
stop antibiotics
oral flagyl, vanc 500mg QID X 10d (increasing flagyl resistance, vanc first line drug)
toxic megacolon, total abdominal colectomy, 48% mortality

Acute colonic pseudoobstruction (Ogilvies)

post-op (especially ortho), trauma, burn, sepsis, MI, congestive heart failure, stroke,
respiratory failure, renal failure, metastatic cancer, electrolyte abnormalities
(hyponatremia, -kalemia), diuretics
r/o obstruction with gastrografin enema, C-scope Dx and decompression
avoid barium: peritonitis with perforation
Rx neostigmine (cholinesterase inhibitor, 2mg in 100cc X 1h), monitor EKG, prompt
response
works via parasympathetic nervous system
80% success restoring coordinated colonic propulsion, 25% recurrence
pain in the absence of ischemia not a contraindication to neostigmine
risk of perforation with very dilated colon
neo-induced bradycardia: caution in patients with bradyarrhythmias, on beta
blockers, Rx atropine
increased airway reactivity/bronchospasm, airway secretions, cramps, salivation
OR for ischemia, peritonitis

Ischemic colitis

80% of intestinal blood flow goes to mucosa and submucosa
colon blood flow 50% of small bowel flow rate, more sensitive to ischemia
increased colon motility does not increase blood flow v small intestine
90% of pts > 60
aneurysm, lo flow (cardiogenic, shock), drugs (dig, cocaine), vasculitides, coagulopathy,
most idiopathic

predilection splenic flexure (Griffith's point), descending, sigmoid, rectosigmoid (Sudek's point)

bloody stool, abdominal pain, thumbprinting on flat plate, mucosal edema CT

antibiotics, observe, most resolve

rare long term sequella: stricture

Sclerosing mesenteritis/mesenteric panniculitis/mesenteric lipodystrophy/retractile mesenteritis/sclerosing lipogranulomatosis

unknown etiology, three phases

1. degeneration of mesenteric fat (may resolve)

2. inflammatory reaction (panniculitis)

3. fibrosis (retractile mesenteritis)(small bowel obstruction)

pain, fever, malaise

differentiate from inflammatory pseudotumor, idiopathic retroperitoneal fibrosis,

lymphoma, sclerosing peritonitis, desmoid, sarcoma; bx to exclude malignancy

Rx: anti-inflammatory or immunosuppression: steroids, colchicines

Perianal abscess

most perianal abscesses intersphincteric

Rectovaginal fistula

50% of obstetrical rectovesical fistulas heal spontaneously

10% of repairs break down

radiotherapy fistula usually require colostomy

Volvulus

Sigmoid (see VIDs 994, 1369)

3rd most common cause of larger bowel obstruction in western countries
(after cancer and diverticulitis)

most common cause in the 3rd world

plain films diagnostic > 50%

90% Dx combined with BE/gastrografin

management

endoscopic detorsion successful > 75% of cases

recurrence rates 40-50% after endoscopic decompression alone

options:

resection/Hartmann's or reanastomosis

sigmoidopexy (less favored)

cecal (see VIDs 205, 1001)

less common

patients 10-20 years younger than sigmoid

10-20% of U.S. population have mobile cecum

cecal bascule (see VID 950): cecum folds anteriorly/superiorly over ascending colon
management:

- cecopexy
- resection/anastomosis v diversion
- tube cecostomy (may be done under local)

Occult GI bleed

small intestine angiodysplasia, laparotomy with push enteroscopy
Meckels most prevalent congenital GI anomaly, 2%, M>F
most common source child, young adult
capsule endoscopy: contraindication stricture
double balloon enteroscopy
angiodysplasia small bowel and R colon
heparin, TPA or tolazoline challenge mesenteric angio

Lower GI bleed

up to 11% BRB/PR = UGI, increases with age, male
non-bilious NG aspirate do upper endoscopy
colonic: diverticular, IBD most common (angiodysplasia only 1-3%)
90% diverticular stop spontaneously
arterial bleed
50% bleeds R side (80% of tics are L)
25% risk second hemorrhage, 50% risk 3rd
massive lower GI bleed 90% diverticular and angiodysplasia
pt usually over 50
angiodysplasia bleeds venous, not as severe as diverticular
angiogram shows most diverticular bleeds with massive bleeding
requires 1cc/m bleeding rate
shows only 10% of angiodysplasia bleeds
findings in angiodysplasia: density, slowly emptying mesenteric vein,
vascular tuft, early filling
Dx: technetium tagged RBC scan detects rate 0.1cc/m, diagnostic localization
can repeat study up to 48h
resection based on scan up to 40% error
angio detects 0.5-1cc/m, diagnostic and therapeutic vasopressin or embolization
vasopressin 50% rebleed, cardiac effects, ischemia 10%
angioembolization 80% successful, rare ischemia with superselective
Rx: surgery last resort; 4U/24h, bleeding beyond 72h, recurrence < 1w
pre or intraop Endoscopic localization
subtotal colectomy: segmental resection 75% rebleed, 50% mortality
capsule endoscopy: 2 images/sec X 8h, 57K frames
4% capsule retention