

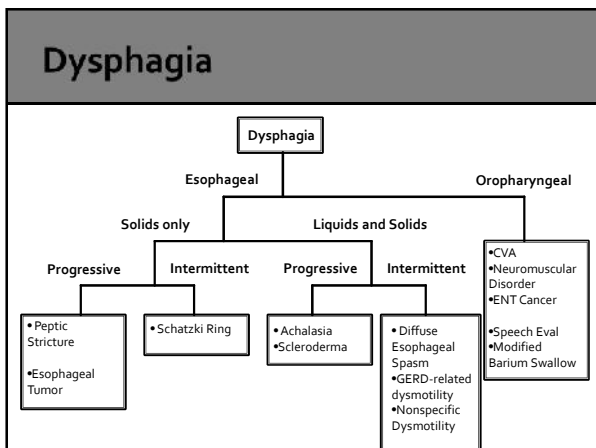
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Gastroenterology Review
Fall 2012 CME Conference
Oregon Society of Physicians Assistants

Outline


- Esophagus
 - Dysphagia
 - GERD / Barrett's esophagus
- Stomach/Small Bowel
 - Peptic Ulcer Disease
 - Gastric cancer
 - GI Bleeding
- Celiac Disease
- Colon
 - Colorectal Cancer Screening
 - Irritable Bowel Disease
 - Inflammatory Bowel Disease
 - Infectious Diarrhea
 - Diverticular Disease
 - Anorectal Disease

Esophagus




Achalasia

- Aperistaltic esophagus with impaired relaxation fo the lower esophageal sphincter (LES)
- Diagnosis
 - UGI Barium – “bird’s beak”
 - EGD can suggest
 - Esophageal manometry
- Treatment
 - Nitrates, Calcium channel blockers
 - Botox injection of LES
 - Pneumatic dilation
 - Heller myotomy (cut LES)



Other Esophageal Motility Disorders

- Differentiated using esophageal manometry
- **Diffuse Esophageal Spasm:** chest pain > dysphagia
 - High-amplitude simultaneous peristaltic waves
 - **Corkscrew** appearance on UGI → 
- **Nutcracker esophagus:**
 - Chest pain > dysphagia
 - *Normal* peristalsis but high-amplitude and prolonged duration of peristaltic waves

Gastroesophageal Reflux Disease

- Epidemiology
 - M=F
 - All ages equally
- Risk Factors
 - Obesity
 - Smoking
 - Alcohol use
 - Pregnancy
 - Foods: spicy, tomatoes, peppermint, caffeine, fat, chocolate
 - Recumbency
 - Delayed gastric emptying (narcotics, DM)

GERD – H&P

- Symptoms – classically post-prandial or when supine
 - Heartburn (pyrosis)
 - Acid regurgitation
 - Dyspepsia
 - Dysphagia
 - Globus sensation
 - 'Water brash'
 - Controversial: cough, hoarseness, asthma/RAD, nausea
- Signs
 - Typically normal physical exam
 - No abdominal pain with palpation

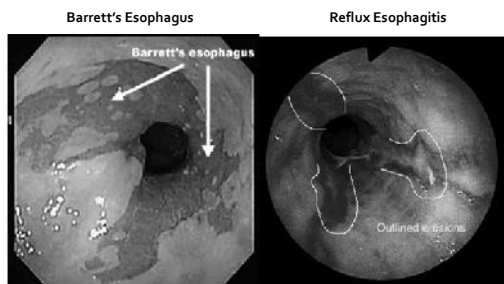
GERD

- Diagnosis
 - 'Therapeutic trial' - empiric acid suppression for classic symptoms without warning signs/'red flags'/alarm symptoms'
 - Warning Signs = dysphagia, odynophagia, unintentional weight loss, GI bleeding, iron-deficiency anemia, age > 40
 - EGD
 - Often normal, hiatal hernia commonly found
 - Reflux esophagitis
 - Barrett's esophagus (intestinal metaplasia)
 - Peptic stricture
 - 24-48h esophageal pH monitor
 - Gold standard
 - Physiologic reflux = 4% acid exposure time

GERD - Complications

- Peptic Stricture
 - Rarely seen in PPI era
 - Treated with endoscopic dilation, acid suppression
- Barrett's Esophagus – "salmon-colored mucosa"
 - ~0.5%/year risk of esophageal cancer
 - Caucasian > African-American, M>F
 - Screening controversial, Age >50 with long-standing GERD
 - Surveillance – EGD with biopsies every 1-3 years
 - Treatment
 - PPI – No evidence reduces cancer risk
 - Ablation for high grade dysplasia (RFA, EMR)

Reflux Complications



GERD - Treatment

- Lifestyle Modifications
 - EtOH and tobacco cessation
 - Elevate head of bed, no meals within 3 hours of bedtime
 - Dietary modification
 - Weight loss
- Acid Suppression
 - Antacids – rapid relief, PRN dosing, short-acting
 - H2 receptor blockers – PRN dosing, long-acting
 - PPIs – most potent, best when taken prior to meal, qday-BID
 - Recommended treatment if any complications of GERD
 - Continuous therapy – Recommended when >3 days per week of symptoms

PPI - Risks

- PPI use associated with:
 - Pneumonia
 - C. diff colitis
 - Hip fractures
 - Calcium and Vitamin D supplementation recommended with long term use.

GERD - Treatment

- Second-line medical therapy
 - Prokinetics – metaclopramide
 - Baclofen
- Surgical therapy
 - Nissen fundoplication
 - Generally reserved for medical treatment failures



Esophageal Cancer

- 50-70 years, M > F
- Adenocarcinoma > Squamous cell carcinoma
- Different risk factors/epidemiology
- Adenocarcinoma: GERD/Barrett's, Caucasians
- SCC: smoking, African-Americans
- Presentation: gradual dysphagia to solids first, then liquids; weight loss, bleeding, pain
- Poor prognosis (advanced at diagnosis)
- Diagnosed using endoscopy with biopsy

Schatzki ring

- Congenital mucosal ring in lower esophagus causing intermittent dysphagia
 - Classically, with meats
- Diagnosed with barium UGI
- Treated with endoscopic dilation



Esophagitis

- Reflux
- Infectious (CMV, HSV, Candida)
- Radiation
- Pill (bisphosphonates, KCl)

Stomach / Small Bowel

Peptic Ulcer Disease

- Epidemiology
 - ~10% lifetime incidence
 - Decreasing incidence over the course of 20th century
 - Increasing incidence of complicated PUD in the elderly
 - Risk factor: Cigarette smoking
 - NOT risk factors: ETOH, diet, stress?

PUD - Etiologies

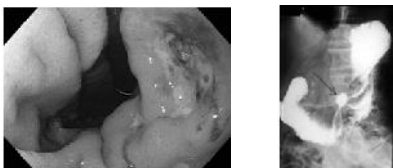
- *H. pylori* infection
 - 20% of population less than < age 40, 50% of population >age 60
 - 80% of duodenal ulcers, 60% gastric ulcers with HP infection
- NSAID use
 - Risk increased with combined daily aspirin, age
 - ~0.5%/year risk of bleeding, perforation in chronic NSAID users
- *H. pylori* and NSAIDs are synergistic!
- Rarely, Zollinger-Ellison syndrome (<1%)

PUD – H&P

- Symptoms
 - Dyspepsia – burning or gnawing
 - Improved 30 minutes after meals – duodenal ulcer
 - Worsened with meals – gastric ulcer
 - Early satiety
 - Melena
 - Hematemesis
 - Hematochezia – hemorrhagic shock
- Signs
 - Epigastric pain on palpation
 - Rectal exam: Melena or blood
 - Fecal occult blood testing typically not helpful

PUD - Diagnosis

- EGD
 - Allows for therapy of ulcers with high bleed risk
 - Can obtain biopsies for *H. pylori*
- Barium UGI
 - Only used for high-risk endoscopy patients



PUD - Management

- Uncomplicated PUD
 - Once daily PPI x 8 weeks
 - Test for *H. pylori* – treat if positive ('test and treat')
 - No need for confirmation of eradication in uncomplicated PUD
 - Abstinence from NSAIDs
 - If essential, indefinite PPI use
 - Smoking cessation
- Complicated PUD – bleeding, perforation
 - Same as above
 - Confirm eradication of *H. pylori* after treatment
- Gastric Ulcers
 - Repeat EGD in 6-8 weeks to rule out gastric cancer

H. pylori testing

- Serology
 - Stays positive lifelong, don't use for confirmation of eradication or if prior h/o PUD
- Endoscopic biopsies/rapid urease testing
 - Invasive, expensive; detects *active* infection
- Urea breath test
 - Sensitivity reduced by PPI use; detects *active* infection
- Stool antigen test
 - Sensitivity reduced by PPI use; detects *active* infection
- Testing should be performed for symptoms c/w PUD not GERD
- If indicated, tests of eradication should be performed 4 weeks after completion of therapy

H. pylori treatment

- Triple therapy:
 - Usually, 10-14 days of amoxicillin + clarithromycin + BID PPI
 - Combined treatment packs are available though more expensive
 - ~80% eradication rate due to antibiotic resistance
- Multiple second-line regimens are available if treatment failure occurs

Gastric adenocarcinoma

- Associated with *H. pylori* infection
- Thus in the U.S., more frequent in immigrants
- Rare in young persons
- Symptoms: early satiety, pain, weight loss
- Exam often unrevealing; ? palpable LAD
- Labs may show iron-deficiency anemia
- Treatment: surgery +/- chemoXRT

Upper GI Bleed Differential

- **Peptic ulcer disease** — 55 %
- Esophagogastric varices — 14 %
- Arteriovenous malformations — 6 %
- Mallory-Weiss tears — 5 %
 - Tear at the GEJ related to forceful retching
- Tumors and erosions — 4 % each
- Dieulafoy's lesion — 1 %
 - Large submucosal artery, usually in stomach
- Other — 11 %

Lower GI Bleed Differential

- Diverticulosis — 5 to 42 %
- Ischemia — 6 to 18 %
- Anorectal (hemorrhoids, anal fissures, rectal ulcers) — 6 to 16 %
- Neoplasia (polyps and cancers) — 3 to 11 %
- AVMs — 0 to 3 %
- Post-polypectomy — 0 to 13 %
- Inflammatory bowel disease — 2 to 4 %
- Radiation colitis — 1 to 3 %
- Other colitis (infectious, antibiotic associated, colitis of unclear etiology) — 3 to 29 %
- Small bowel/upper GI bleed — 3 to 13 %
- Other causes — 1 to 9 %
- Unknown cause — 6 to 23 %

Treatment of GI bleeding

- Volume Resuscitation
- Reverse coagulopathy
 - FFP/vitamin K for warfarin/liver disease
 - Platelet transfusion if antiplatelet agents (ASA, Plavix)
- PPI bolus/drip for upper GI bleed
- Octreotide bolus/drip for suspected variceal bleeding
- Antibiotics for cirrhotic patients with upper GI bleed
- No medical therapies for lower GI bleeding (may need surgery or angiography)

Celiac Disease

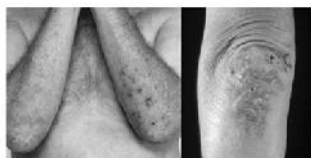
- Autoimmune disease characterized by small intestine sensitivity to gluten exposure
- Leads to blunting of villous surface and nutrient malabsorption

Celiac Disease - *Epidemiology*

- Finnish children: Prevalence 1:99
- Highest incidence in Western Europe, but more common in Scandinavian and Celtic populations.
- US studies suggest positive serology in 1:133
- Rarely affects pure African-Caribbean, Chinese, or Japanese populations.

Celiac Disease - *Presentation*

- Classic GI presentation
 - Diarrhea
 - Steatorrhea
 - Abdominal bloating
 - Weight loss
 - Aphthous ulcers
 - Vitamin deficiencies
- Extraintestinal complaints
 - Dermatitis herpetiformis
 - Anemia
 - Neuropathy
 - Ataxia
 - Amenorrhea
 - Infertility



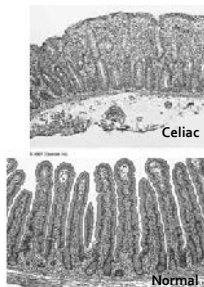
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Celiac Diagnosis - *Serology*

- Accurate diagnosis requires the patient to be on a gluten-containing diet for at least 4 weeks prior to testing.
- Anti-gliadin Ab:
 - IgG: Sens 69-85%, Spec 73-90%
 - IgA: Sens 75-90%, Spec 82-95%
- Anti-Endomysial Ab:
 - Indirect IFA: Sens 85-98%, Spec 97-100%
- Tissue Transglutaminase IgA
 - TTG ELISA: Sens 95-100%, Spec 97-100%
 - Concurrent total IgA needed to interpret post test probability (false negatives with IgA deficiency)
If low, send gliadin IgG

Celiac Disease - Treatment

- Confirm diagnosis with EGD with small bowel biopsies
 - Villous blunting/flattening
 - Intraepithelial lymphocytes
 - Crypt hyperplasia
- Treatment
 - Gluten-free Diet
 - Assess/correct vitamin deficiency



Colon

Colon Cancer

- Adenocarcinoma
- Risk factors: increasing age, heredity, IBD, familial cancer syndromes (HNPCC, FAP)
 - 75% have no risk factors
- Presentation: bowel obstruction, bleeding, iron-deficiency anemia, weight loss, change in bowel habits, perforation
- Treatment: Surgery, chemotherapy
- Carcinoembryonic antigen (CEA) useful in monitoring for recurrence, not in diagnosis

Colon Cancer Screening

- Acceptable Tests per USPSTF (2008)
 - Fecal occult blood testing annually
 - Sigmoidoscopy every 5 years
 - Colonoscopy every 10 years
- U.S. Multi-Society Task Force on Colorectal Cancer
 - CT colonography every 5 years
 - Barium enema every 5 years

Colon Cancer Screening

- Average Risk
 - Start age 50
 - Individualize age 76-85 (USPSTF)
 - Not recommend above age 85 (USPSTF)
- Family history of colon cancer – 1st degree relative (or two 2nd degree relatives)
 - Start age 40 or 10 years prior to age of diagnosis
- Lynch syndrome (HNPCC)
 - Colonoscopy q1-2 years starting age 20-25 (or 10 years prior to youngest age at diagnosis)
- Familial Adenomatous Polyposis (FAP)
 - Flexible sigmoidoscopy starting age 10-12

Colon Cancer Screening

- Polyp surveillance
 - No polyps = 10 years
 - 1-2 polyps = 5-10 years
 - ≥ 3 polyps = 3 years
 - Large (>1-cm) polyp, villous features, high-grade dysplasia = 3 years

Irritable Bowel Syndrome

- Epidemiology:
 - Prevalence estimates vary 3-20%
 - More common in young, but present in the elderly
 - 2:1 female:male predominance
 - Affects all ethnicities, nationalities
 - Chronic disorder
 - Can have shifting symptoms over time
 - Can spontaneously resolve
- Pathogenesis:
 - Post-infectious
 - Visceral Hypersensitivity – brain/gut axis
 - Increased serotonin release in gut
 - Small intestine bacterial overgrowth

IBS – H&P

- Rome III criteria:
 - Recurrent abdominal pain or discomfort at least 3 days/month in the last 3 months associated with *two or more of the following*:
 - Improvement with defecation
 - Onset associated with a change in frequency of stool
 - Onset associated with a change in form (appearance) of stool
- Subtypes:
 - Diarrhea-predominant
 - Constipation-predominant
 - Mixed-type

IBS – H&P

- Symptoms:
 - Abdominal pain/discomfort relieved with defecation
 - Bloating
 - Cramping
 - Diarrhea, constipation, or alternating
 - Passage of mucus
 - Absence of warning signs:
 - Weight loss
 - Anemia
 - GI bleeding
 - Fever
 - Nocturnal stooling
- Signs:
 - Abdominal tenderness to palpation – no peritoneal signs
 - Abdominal distention

IBS - *Diagnosis*

- Rome III criteria with lack of warning signs
 - No further testing recommended
- Failure of initial management
 - Screening CBC, CMP
 - Celiac testing
 - TSH
- Consideration of further testing based on dominant syndrome, refractory symptoms
 - Diarrhea – colonoscopy to r/o IBD, microscopic colitis; stool studies
 - Constipation – Assess for pelvic floor dysfunction

IBS - *Treatment*

- Reassurance
- Physical activity
- High fiber diet/supplementation
- Avoidance of trigger foods (dairy, coffee, etc)
- Pain treatments:
 - Anti-spasmodics: hyoscyamine, dicyclomine
 - Tricyclic antidepressants: nortriptyline qHS
Caution in constipation-predominant
 - SSRIs
 - Probiotic (specifically Align®)

IBS-D: *Treatment*

- Anti-diarrheals
 - Loperamide chronically
 - Atropine/diphenoxylate (Lomotil®)
- Rifaximin
 - 550mg tid x 14 days
 - Retreatment? Costs ~\$500
- Alosetron
 - GI providers only

IBS-C: Treatment

- Laxatives/Stool softeners
 - Docusate
 - Polyethylene glycol-3350 (Miralax®)
- Lubiprostone (Amitiza®)

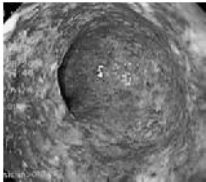

Inflammatory Bowel Disease

- Idiopathic autoimmune disease characterized by unregulated inflammation of the GI tract
 - Genetic predisposition
 - Environmental Influences
- Epidemiology
 - Bimodal incidence
 - Age 15-30
 - Sixth decade
 - Roughly equal gender distribution
 - Tobacco
 - Protective in ulcerative colitis
 - Worsens Crohn's disease
 - Higher socioeconomic status is a risk factor.
- Increased risk of colon cancer in UC and Crohn's colitis

Ulcerative Colitis vs Crohn's Disease

| | |
|--|--|
| <ul style="list-style-type: none"> ▪ Ulcerative Colitis <ul style="list-style-type: none"> ▪ Only affects colon ▪ Contiguous involvement from rectum proximally ▪ Mucosal inflammation only | <ul style="list-style-type: none"> ▪ Crohn's Disease <ul style="list-style-type: none"> ▪ Can affect entire GI tract <ul style="list-style-type: none"> Terminal ileum and cecum most common ▪ Patchy "skip lesions" of involvement <ul style="list-style-type: none"> Rectum typically spared ▪ Transmural inflammation <ul style="list-style-type: none"> Fistulae Strictures Abscesses |
|--|--|

Endoscopic Appearance

| | |
|---|--|
| <p>Ulcerative Colitis</p>  <p>• Confluent, contiguous, superficial ulceration</p> | <p>Crohn's Colitis</p>  <p>• Linear ulcerations with intervening normal tissue ('skip lesions')</p> <p>• Deep ulceration</p> <p>• "Cobblestoning" appearance</p> |
|---|--|

IBD – H&P

- Symptoms
 - Ulcerative Colitis
 - Diarrhea, typically bloody
 - Tenesmus – painful rectal urgency, sensation of incomplete evacuation
 - Abdominal pain – Crampy in nature
 - Crohn's disease
 - Diarrhea, +/- blood
 - Abdominal pain
 - Peri-anal pain or drainage
 - Obstructive symptoms: abdominal bloating, N/V
- PE: Possible palpable tender RLQ mass in Crohn's disease

Extraintestinal Manifestations

- Uveitis/Episcleritis
 - Painful bloodshot red eyes, decreased visual acuity
- Arthralgias
 - Knees, ankles > elbow, wrists, PIP, MCP
 - Sacroiliitis, spondylitis
- Primary Sclerosing Cholangitis
 - UC > CD, cholestatic LFTs, diagnosed with MRCP
- Erythema nodosum
 - Painful red nodules on shins
- Pyoderma gangrenosum
 - Necrotic ulcer with undermined, heaped border
 - Purple discoloration along border
- Aphthous ulcers
- Kidney stones

Extraintestinal Manifestations

| | | |
|---|---|---|
| Uveitis | Erythema Nodosum | Pyoderma Gangrenosum |
|  |  |  |

IBD - *Diagnosis*

- Labs – non-specific
 - Elevated WBC, platelets, microcytic anemia
 - Low albumin
 - Elevated inflammatory markers (ESR, CRP)
 - IBD serology rarely used, poor test performance
- Colonoscopy +/- EGD
- Small bowel evaluation: CT, UGI/SBFT, capsule
- Diagnosis made based on clinical, endoscopic, and pathology data

IBD - *Treatment*

- Acute Flare – Induction therapy
 - 5-ASA medications (sulfasalazine, mesalamine)
 - Corticosteroids
 - Anti-TNF antibodies (infliximab, adalimumab)
 - Cyclosporine (UC only)
 - Antibiotics (Crohn's only)
- Maintenance of remission
 - 5-ASA
 - Azathioprine/6-Mercaptopurine
 - Methotrexate (Crohn's only)
 - Anti-TNF antibodies
 - Natalizumab (Crohn's only)

IBD - *Treatment*

- Surgery – Indicated for refractory disease
 - Ulcerative colitis
 - Total colectomy
 - “Cures” disease
 - Commonly performed with ileo-anal pullthrough anastomosis (IPAA) or pouch formation.
 - Crohn’s disease
 - Resection of affected segment
 - Strictureplasty
 - Recurrence is near universal

Questions?
