Seed
GLOBAL HEALTH

# Registrar Education Series

## Gastrointestinal

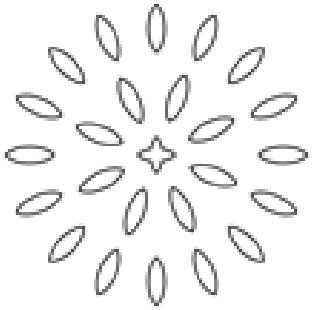
*Continuing education for personal growth and quality improvement*

DynaMed

# How to…

- What is the differential based on the chief complaint?
- What additional information do you want?
- How does the history narrow down the differential?
- What labs/imaging would be most helpful?
- What is the diagnosis?
- What is the assessment?
- What is the treatment/plan?



# GASTROINTESTINAL CASES

challenging the status quo

# Seed Global Health

## Gastrointestinal Case 1

Chief Concern | Histories | PE | Assessment | Plan

# Seed Global Health

## Chief Complaint

Chimewemwe is a 43yoF with a PMH of DM and obesity who presents with RUQ pain.

# Seed Global Health

## Histories

*HPI*: The pain is a constant, intense, dull pain in RUQ/epigastrium. Radiates to the back and has been nauseous.  Has occurred a few times in the past at night and lasts a few hours.  This episode ended around 3am.
Denies fever, blood in stool, constipation, emesis, jaundice

*PMH:* DM, HLD, obesity

*PSH:* c-section

*FH:* DM, HTN, HLD

*Social:* Originally Lusaka. Lives with her husband and 4 children. Eats a nshima and walks 3x a week.  Enjoys dancing and kitchen parties.

# Seed Global Health

## Physical Exam

GEN: Obese Hispanic female appearing stated age in no acute distress

GI: No erythema, asymmetry or signs of trauma on the abdomen. Soft, non-distended. Normal bowel sounds. No rebound tenderness, guarding or masses. No heptosplenomegaly. Murphy's sign is equivocal. No CVA or suprapubic tenderness. No McBurney's point tenderness.

Labs

Imaging

Procedures

# Seed Global Health

## Labs:

| *FBC | |
|---|---|
| WBC | 7.5 |
| Hgb | 13 |
| Hct | 36 |
| Plt | 220 |

| *RFTs/LFTs | |
|---|---|
| Na | 138 |
| K | 4.6 |
| Bicarb | 25 |
| Cl | 101 |
| BUN | 11 |
| Cr | 96 |
| Glucose | 8.2 |
| Ca | 9.5 |
| T bili | 7 |
| AST | 35 |
| ALT | 32 |
| Alk Phos | 125 |

| Urine | |
|---|---|
| LE | Negative |
| Blood | Negative |
| Nit | Negative |
| Bili | Negative |
| | |
| *Alb/Cr | <5 |
| UPT | Negative |

| Other | |
|---|---|
| *A1c | 7.6 |
| *Chol | 4.8 |
| *LDL | 3.4 |
| *HDL | 1.1 |
| *Trigs | 2.1 |
| Lipase | 35 |
| *H pylori | Negative |
| *FOBT | Negative |

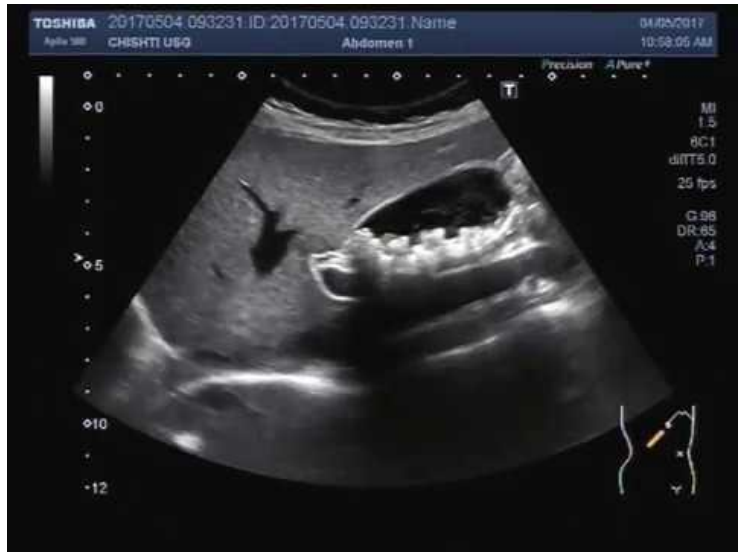
*indicates the test was likely not indicated with this clinical presentation

Imaging

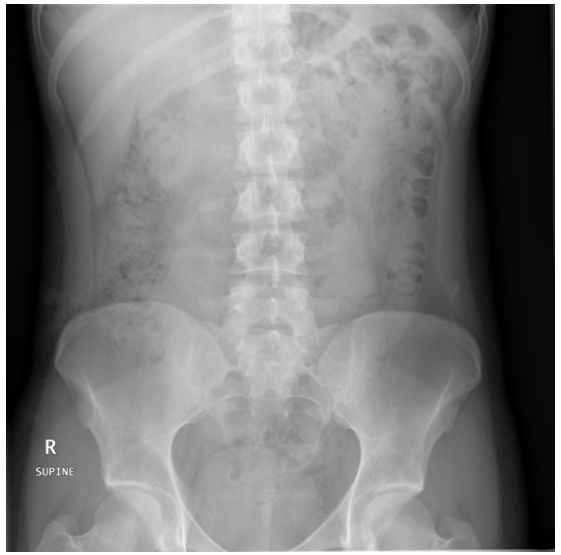
Procedures

# Seed Global Health

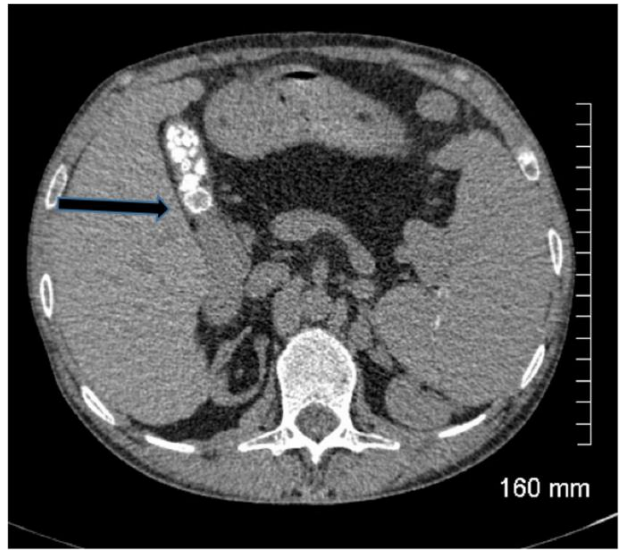
## Imaging




RUQ U/S demonstrates stones in the gallbladder




*Abdominal x-ray is normal



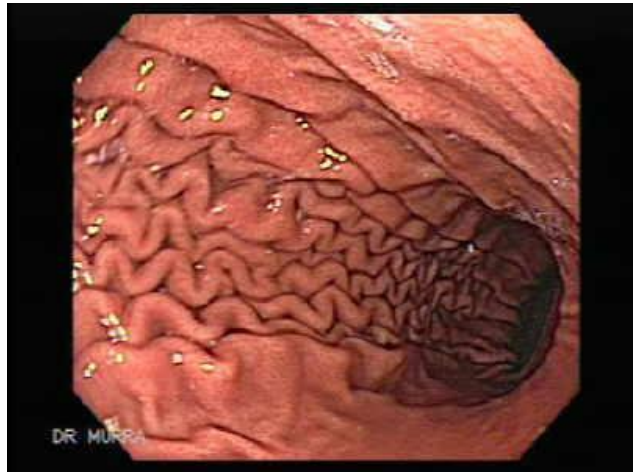

*CT /pelvis demonstrates gallstones

Labs Procedures

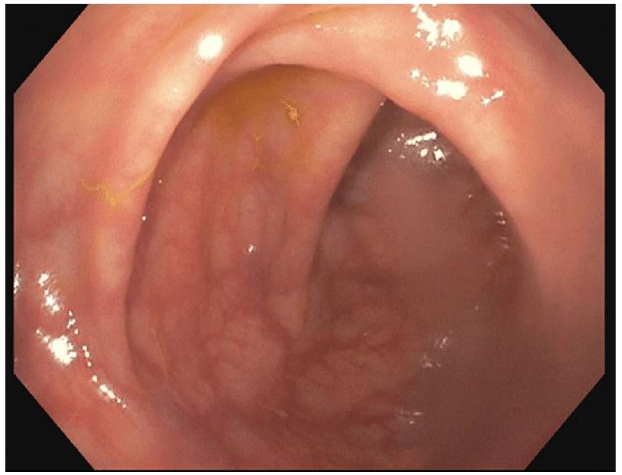
*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Procedures




*EGD: normal



*Colonoscopy: normal

Labs Imaging

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Assessment

- Chimewemwe is a 43yoF with a PMH of DM, HLD and obesity who presents for episodic RUQ pain who is currently asymptomatic, likely has uncomplicated recurrent biliary colic.

- Other diseases on the differential but not supported by history, physical and/or labs include pancreatitis, PUD, GERD, functional dyspepsia, IBS, PNA, pyelonephritis, hepatitis, ectopic pregnancy, costochondritis, diabetic gastroparesis

# Seed Global Health

## Plan

- This is not an emergency and no further tests are needed at this point. Since this has been recurring it is more likely to occur again in the future.
- During an event a FBC, RFTs/LFTs and lipase are a reasonable work up to test for complications along with a RUQ U/S if not already performed.
- Provide NSAIDs and avoid triggers until gallbladder is removed.
- Do not use bile acid litholysis unless the are small radiolucent stones in a functioning gallbladder in someone unwilling to undergo surgery.
- Refer to general surgery for laparoscopic cholecystectomy and counsel on diet and exercise to decrease weight for overall health.

# Seed Global Health

# Gallstones Summary

The gallbladder stores bile from the liver which helps digest fats

- When the gallbladder is removed bile is still produced and available

Gallstones are made from cholesterol

- Gallstones alone are not a disease, but an incidental finding

~20% of people have gallstones and the majority are asymptomatic

Risk factors:

- overweight, rapid weight change, middle aged, female, pregnancy

Most people with biliary colic can be managed outside of the ED

The majority of labs will be normal, most are not indicated

U/S of the RUQ is the preferred imaging modality

Complications of gallstones include:

- Acute cholecystitis: fever, elevated WBC
- Choledocholithiasis: gallstone in CBD. Fever with jaundice.
- Gallstone pancreatitis: gallstone obstructing the duct/ampulla

# Seed Global Health

## Gastrointestinal Case 2

Chief Concern | Histories | PE | Assessment | Plan

# Seed Global Health

## Chief Concern

Mabvuto is a 52yo male with a PMH of obesity, DM, HTN and HLD who presents for a 6 month history of chest pain.

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## Histories

*HPI*: The chest pain started insidiously. Is a retrosternal burning pain, radiating to his neck and now occurs 5/7 days of the week, mostly at night when in bed although can occur during the day if he has really good meals. Never occurs with exertion and denies SOB. Also denies dysphagia, odynophagia, hematemesis, weight loss and vomiting.

*PMH:* Obesity, DM, HTN, HLD

*PSH:* none

*FH:* Obesity, DM, HTN, HLD

*Social:* Lives with his wife 4 children and 3 grandchildren. Works as a gardener. Eats out during the day. Denies smoking, has 4 beers nightly, denies drugs. Enjoys watching football, drumming and playing with his grandchildren.

# Seed Global Health

## Physical Exam

GEN: 52yoM appearing stated age. Well groomed, Pleasant, conversive. No acute distress.

GI: No erythema, asymmetry or signs of trauma on the abdomen. Soft, non-distended, non-tender. Normal bowel sounds. No rebound tenderness, guarding or masses. No heptosplenomegaly. No CVA or suprapubic tenderness.

Labs

Imaging

Procedures

# Seed Global Health

## Labs

| *FBC | |
|---|---|
| WBC | 7.5 |
| Hgb | 13 |
| Hct | 36 |
| Plt | 220 |

| *RFTs/LFTs | |
|---|---|
| Na | 138 |
| K | 4.6 |
| Bicarb | 25 |
| Cl | 101 |
| BUN | 11 |
| Cr | 96 |
| Glucose | 8.2 |
| Ca | 9.5 |
| T bili | 7 |
| AST | 35 |
| ALT | 32 |
| Alk Phos | 125 |

| *Urine | |
|---|---|
| LE | Negative |
| Blood | Negative |
| Nit | Negative |
| Bili | Negative |
| | |
| Alb/Cr | <5 |
| UPT | Negative |

| *Other | |
|---|---|
| A1c | 7.6 |
| Chol | 4.8 |
| LDL | 3.4 |
| HDL | 1.1 |
| Trigs | 2.1 |
| Lipase | 35 |
| H pylori | Negative |
| FOBT | Negative |

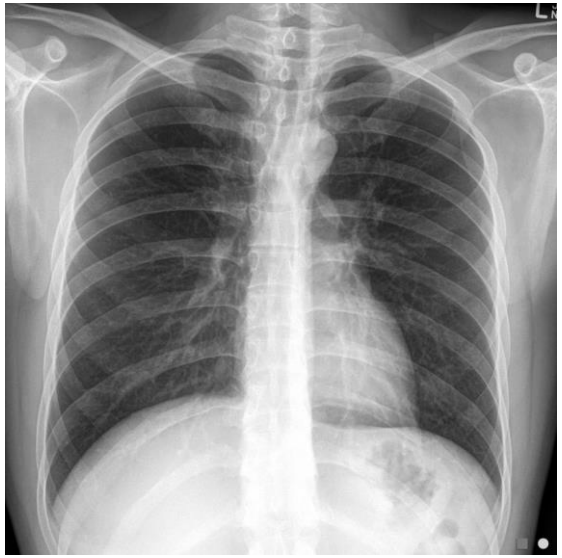
*indicates the test was likely not indicated with this clinical presentation

Imaging

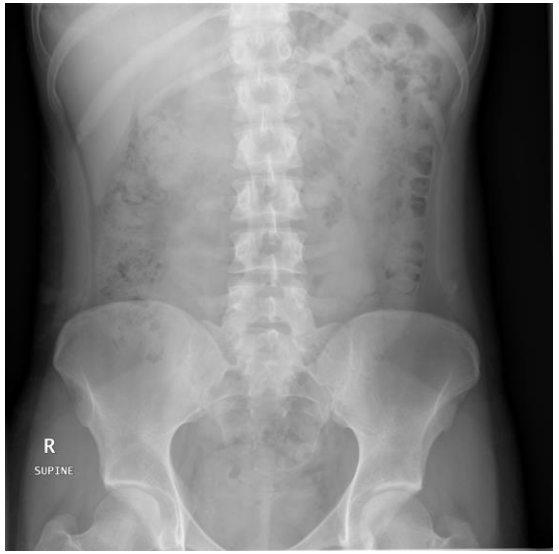
Procedures

# Seed Global Health

## Imaging



*Chest x-ray is normal



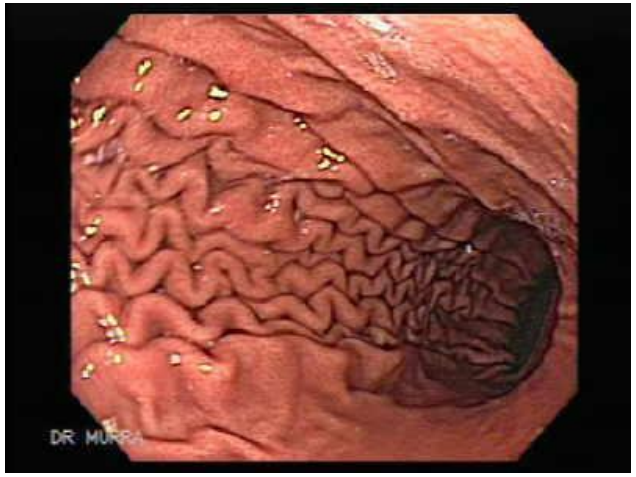

*Abdominal x-ray is normal

Labs Procedures

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Procedures



*EGD: normal

Labs Imaging

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Assessment

- Mabvuto is a 52yoM with a PMH of DM, HTN, HLD and obesity who presents with chronic retrosternal burning that is characteristic of GERD and does not have any alarm symptoms/red flags.

- Differential includes: PUD, CAD, chest wall pain, motility disorders, eosinophilic esophagitis, CAD, anxiety, food allergy

# Seed Global Health

## Plan

- No need for any labs, imaging or procedures at this point
- Start with an empiric PPI i.e. omeprazole 20mg 30-60 minutes before breakfast for 4-8 weeks
  - Plan on stopping, decrease dose or use intermittently after the initial period
  - Risk of PPI include AKI, CKD, dementia, osteoporosis, MI, infections, micronutrient deficiencies
  - Can use OTC meds like tums which give rapid relief but do not affect gastric pH, prevent reflux episodes or complications
- Counseled on weight loss
- Can elevate the bed and avoid eating 3-4 hours prior to bed but this does not have the best evidence for improvement
- Reassured that he did not have to give up his favorite foods, but should avoid his specific triggers
- If he develops alarm symptoms/complications or does not respond to twice daily PPI then order an upper endoscopy
- Return to clinic is 4-8 weeks to reevaluate symptoms

# Seed Global Health

# GERD Summary

Gastoesophageal reflux is normal

- GERD is present when there are symptoms/complications

~15% of people have GERD

Risk factors:

- Obesity, pregnancy, alcohol, hiatal hernia, ASA/NSAIDs

H. Pylori is considered protective for GERD

Extraesophageal symptoms:

- Chronic cough, asthma, wheeze, sore throat, sinus/pulm problems, hoarseness

Alarm symptoms:

- Dysphagia, odynophagia, hematemesis, anemia, weight loss, epigastric mass, recurrent vomiting

Complications:

- Reflux symptoms, chest pain, esophagitis, stricture, Barret esophagus, and (rare) adenocarcinoma

No need for labs, imaging, procedures with typical GERD

Order EGD when alarm symptoms are present or with failure of PPI

Order pH monitoring in unresponsive patients with normal EGD

# Seed Global Health

## Gastrointestinal Case 3

Chief Concern | Histories | PE | Assessment | Plan

# Seed Global Health

## Chief concern

Bwalya is a 41yo female who presents for painless blood in stool.

# Seed Global Health

## Histories

*HPI*: Bwalya is a G5P5 41yoF who presents with a 3-month history of intermittent blood with bowel movements. The blood is bright red in the water, on the bowl and on the paper but is not mixed into the stool. She has a sense she still has to go to the bathroom even after she is done. Symptoms last about a week and happen about once a month or so. She denies abdominal/rectal pain but has an uncomfortable sense of fullness at the anus as well as itching. She is constipated every once and a while. Denies a change in her stool shape, size or color. No nausea/vomiting, change in skin/eye color, bloating, heart burn, weight changes, SOB, fatigue or dizziness. Is not on any blood thinners.

*PMH:* none

*PSH:* none

*FH:* No early heart disease or cancers

*Social:* From Northern Province. Lives with her husband and 5 children ages 1 – 8yo. Works as a nurse on her feet all day. Enjoys dancing and eating out. Denies smoking, alcohol and drugs.

# Seed Global Health

## Physical Exam

GEN: Healthy appearing 41yoF appearing younger than stated age. No acute distress. Pleasant and conversive.

GI: No erythema, asymmetry or signs of trauma on the abdomen. Soft, non-distended. Normal bowel sounds. No rebound tenderness, guarding or masses. No heptosplenomegaly. Murphy's sign is absent. No CVA or suprapubic tenderness. No McBurney's point tenderness.

RECTAL: In left lateral position and while actively straining there is a non-tender mass in the R anterior portion of the anus. Skin tags present. No fissures or abscesses. No masses palpated on DRE.

Labs

Imaging

Procedures

# Seed Global Health

## Labs

| *FBC | |
|---|---|
| WBC | 7.5 |
| Hgb | 13 |
| Hct | 36 |
| Plt | 220 |

| *RFTs/LFTs | |
|---|---|
| Na | 138 |
| K | 4.6 |
| Bicarb | 25 |
| Cl | 101 |
| BUN | 11 |
| Cr | 96 |
| Glucose | 4.7 |
| Ca | 9.5 |
| T bili | 10 |
| AST | 35 |
| ALT | 32 |
| Alk Phos | 97 |

| *Urine | |
|---|---|
| LE | Negative |
| Blood | Negative |
| Nit | Negative |
| Bili | Negative |
| | |
| Alb/Cr | <5 |
| UPT | Negative |

| *Other | |
|---|---|
| A1c | 5.4 |
| Chol | 4.8 |
| LDL | 3.4 |
| HDL | 1.1 |
| Trigs | 2.1 |
| Lipase | 35 |
| H pylori | Negative |
| FOBT | Negative |

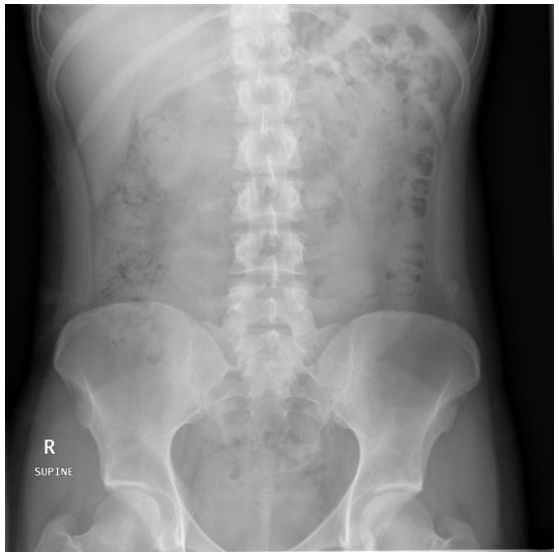
Imaging

Procedures

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Imaging



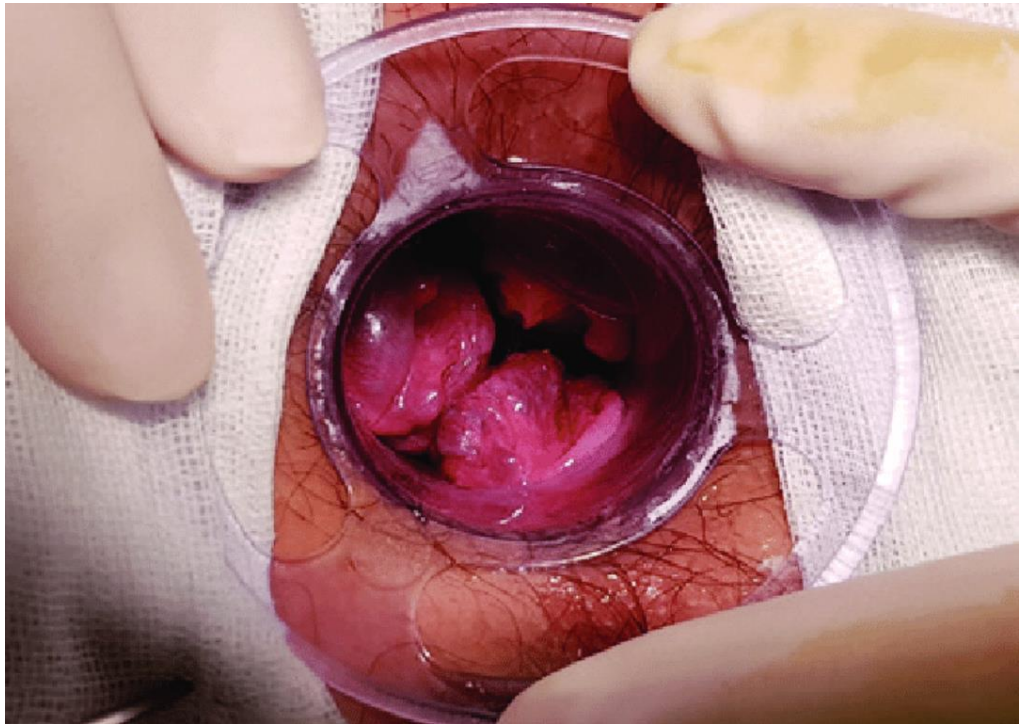

*Abdominal x-ray is normal

*indicates the test was likely not indicated with this clinical presentation

Labs Procedures

# Seed Global Health

## Procedures



*Anoscopy with grade II hemorrhoids

Labs Imaging

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Assessment

- Bwalya is a 41yoF with no significant PMH who presents for intermittent painless rectal bleeding. She has classic symptoms of hemorrhoids with anal fullness, incomplete feeling of evacuation and itching. PE reveals both internal and external hemorrhoids. Denies red flags signs and symptoms of weight loss, iron-deficiency anemia, changes in bowels and abdominal pain.
  Given the absence of any red flags the cause of her symptoms is from hemorrhoids.

- Differential includes: fissure, pruritus ani, perirectal abscess, IBD, adenomatous polyps, rectal ulceration, condyloma acuminatum, cancer, skin tag, fistula-in-ano, anal canal varices, STI and rectal prolapse.

# Seed Global Health

## Plan

- Given there are no red flags will start with increasing fiber and water in order to modify stool form and firmness.
  - Can also choose to  start a stool softener or low dose laxative.
- Counseled on avoiding straining and sitting on the toilet too long.
  - Will need good perianal hygiene to avoid complications like dermatitis.  Can use Sitz baths once or twice a day.
- Comfort topical measures include witch hazel (tucks), local anesthetic ointment, steroid cream.
- If the external hemorrhoid becomes thrombosed and painful can use topical nitro or excise and evacuate if within 72 hours.
- If no improvement with conservative treatment will refer for rubber band ligation.

# Seed Global Health

# Hemorrhoid Summary

Hemorrhoids are abnormal engorgement of anal cushions (blood vessels)

- Thought to be secondary to straining and increased intraabdominal pressure

~20-40% of people have hemorrhoids

Risk factors:

- 45 – 65yo, male = females, obesity, pregnancy, prolonged sitting/standing, pelvic floor dysfunction, cirrhosis, constipation, diarrhea

External hemorrhoids can be painful, internal hemorrhoids are painless

Symptoms: bleeding, fullness/swelling at anus, itching, irritation, fecal soiling

Alarm symptoms:

- Abdominal pain, change in bowel habits, weight loss, iron-deficiency anemia

Consider FBC if iron deficiency anemia is suspected

Refer for to GI or colonoscopy if:

- alarm symptoms are present, fails conservative treatment or alternative dx is suspected

# Seed Global Health

## Gastrointestinal Case 4

Chief Concern | Histories | PE | Assessment | Plan

# Seed Global Health

## Chief Concern

Musonda is a 33yoF with a PMH of anxiety, depression and headaches who presents for abdominal pain.

# Seed Global Health

## Histories

*HPI*: 9 month history of recurrent abdominal pain, usually multiple times a week with a change in stool frequency and form with bloating and distention. She points to her entire abdomen. Says she has tried everything and nothing helps including probiotics and anti-spasmodics. Worse when she has to have a BM, while at work or in stressful family events. Will strain on the toilet and sometimes has mucous but it can alternate between constipation and diarrhea. Denies unintentional weight loss, blood in stool, symptoms that awaken her at night. No skin/eye color changes, urinary changes. Has low energy, decreased appetite, poor sleep.

*PMH:* anxiety, depression, headaches. Denies IBD, celiac, anemia

*PSH:* cholecystectomy, appendectomy, hysterectomy

*FH:* No early heart disease, cancer, IBD, celiac

*Social:* Eastern Province. Stays with a couple people and her 2 children aged 9 and 13yo. Works as a housekeeper. Does not have any hobbies/pleasures in life. No smoking alcohol or drugs.

# Seed Global Health

## Physical Exam

GEN: 33yoF appearing stated age and anxious although in no acute distress

GI: No erythema, asymmetry or signs of trauma on the abdomen. Soft, non-distended.  Normal bowel sounds. Tender to palpation diffusely on abdomen out of proportion to exam. No rebound tenderness, guarding or masses.  No heptosplenomegaly. No CVA or suprapubic tenderness.

RECTAL: Normal tone, no masses or fissures

Labs

Imaging

Procedures

# Seed Global Health

## Labs

| *FBC | |
|---|---|
| WBC | 7.5 |
| Hgb | 13 |
| Hct | 36 |
| Plt | 220 |

| *RFTs/LFTs | |
|---|---|
| Na | 138 |
| K | 4.6 |
| Bicarb | 25 |
| Cl | 101 |
| BUN | 11 |
| Cr | 96 |
| Glucose | 5.0 |
| Ca | 9.5 |
| T bili | 11 |
| AST | 35 |
| ALT | 32 |
| Alk Phos | 97 |

| *Urine | |
|---|---|
| LE | Negative |
| Blood | Negative |
| Nit | Negative |
| Bili | Negative |
| | |
| Alb/Cr | <5 |
| UPT | Negative |

| *Stool | |
|---|---|
| O&P | Negative |
| H pylori | Negative |
| FOBT | Negative |
| F lactoferrin | 2.1 |
| F calprotectin | 24 |

| *Other | |
|---|---|
| ESR | 5 |
| CRP | 3 |
| TTG | 2 |
| EMA | 0 |
| Trigs | 2.1 |
| Lipase | 35 |

Imaging

Procedures

*indicates the test was likely not indicated with this clinical presentation

# Seed Global Health

## Imaging

Review of her books reveals multiple abdominal and pelvic x-rays, ultrasounds, CTs and MRIs that were all within normal limits with benign incidental findings dating back 5 years.

Labs

Procedures

# Seed Global Health

## Procedures

Review in the health information exchange reveals repeated endoscopy, colonoscopy and other invasive procedures that were all within normal limits with benign incidental findings dating back 5 years.

Labs

Imaging

# Seed Global Health

## Assessment

- Musonda is a 33yoF with a PMH of anxiety, depression and headaches who presents for chronic recurring abdominal pain associated with bloating, altered frequency and form of stool that is associated with stress. She has no red flag signs of unintentional weight loss, masses, GI bleeding or change in bowel habits. Symptom based or positive diagnostic strategy makes IBS mixed subtype the most likely diagnosis based on the Rome IV criteria as this should not be a diagnosis of exclusion.
    - Rome IV: recurrent abdominal pain with an on onset ≥ 6 months prior to diagnosis with an average ≥ 1 day per week in past 3 months with ≥ 2 of following features:
        - related to defecation
        - associated with change in stool frequency
        - associated with change in stool form (appearance)
- Differential would include: functional constipation, functional diarrhea, IBD, CRC, lactose intolerance, celiac, GI infection, ovarian cancer, thyroid dysfunction, giardiasis, obstruction, diverticulitis, pelvic floor dyssynergia.

# Seed Global Health

## Plan

- Since IBS is a benign condition whose extra-GI symptoms are more bothersome than GI symptoms the primary goal is to avoid iatrogenic harms of unproven diagnostics and treatments.
- Establish that this is a gut-brain interaction and schedule close follow up
- Dietary: Eat regular meals and drink plenty of fluids. Avoid food that can worsen bloating like insoluble fiber found in whole grain breads and brown rice. Increase soluble fiber found in oats and psyllium. Limit fresh fruits. Get regular exercise.
- Stop probiotics and antispasmodics other than peppermint oil.
- Consider CBT/psychotherapy/hypnosis.
- Can try a TCA for global symptoms as well as simethicone and bismuth for bloating.
- Diarrhea dominant can benefit from loperamide
  - 2nd line: rifaximin and Lotronex
- Constipation dominant can benefit from laxatives (avoid lactulose).
  - 2nd line: Lizness, Amitiza, Tenapanor, Trulance
- Consider referral is she develops red flags, has severe refractory symptoms, or if there is diagnostic doubt

# Seed Global Health

# Irritable Bowel Syndrome Summary

**IBS is a gut-brain disorder**

**Risk factors:**

- Psychological disorders
- GI infection

**14% of females, 9% of males**

- Usually presents in 20s-30s yo, prior to 50yo

**Symptoms must be presents for ≥ 6 months:**

- Bloating, distention, tension, related to defecation, mucous, nausea
- Altered frequency and form with straining, urgency and incomplete evacuation

**Red flag symptoms:**

- Unintentional weight loss, GI bleeding, change in bowel habits, > 60yo, symptoms at night

**Workup usually is not needed but if other causes need to be excluded can get:**

- FBC, ESR, CRP, TTG or EMA, fecal lactoferrin, fecal calprotectin

**Treatment: dietary, exercise, psych meds**

- MEDS: TCA (global), peppermint oil (spasms), simethicone and bismuth (bloating)
- Diarrhea: loperamide, 2$^{nd}$ line: Rifaximin, Alosetron
- Constipation: laxatives (avoid lactulose), 2$^{nd}$ line: Linzess, Amitiza, Tenapanor, Trulance