Chapter 1: Evaluation and Management of a Tough Case of IBS-D

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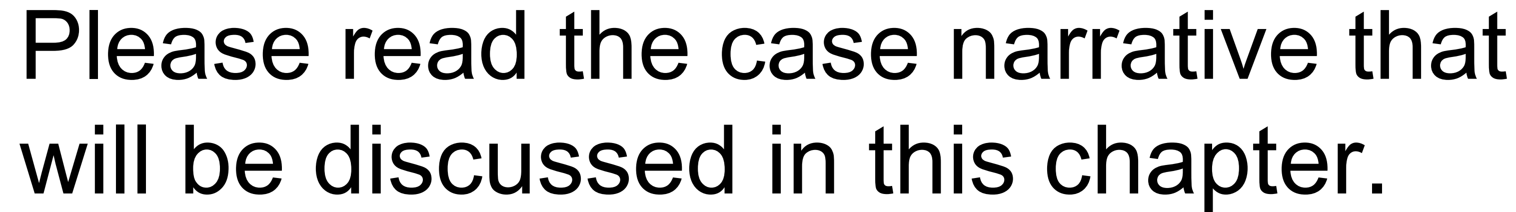
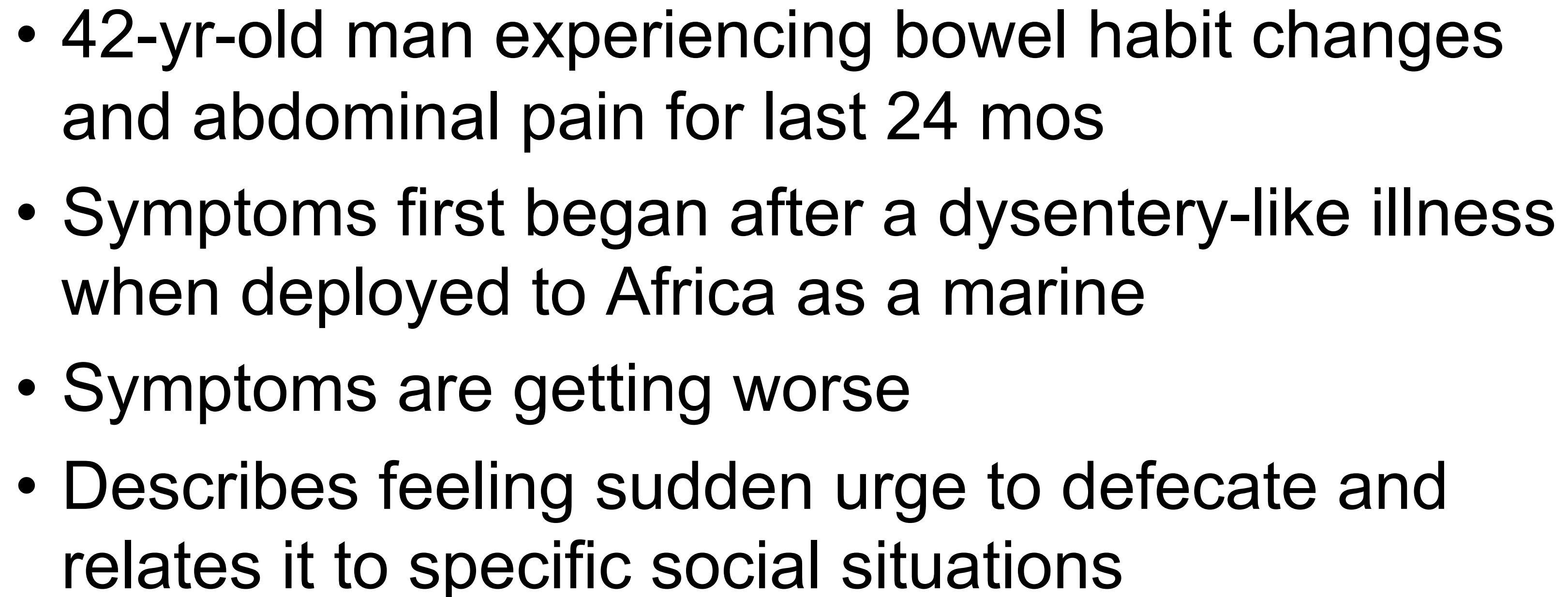
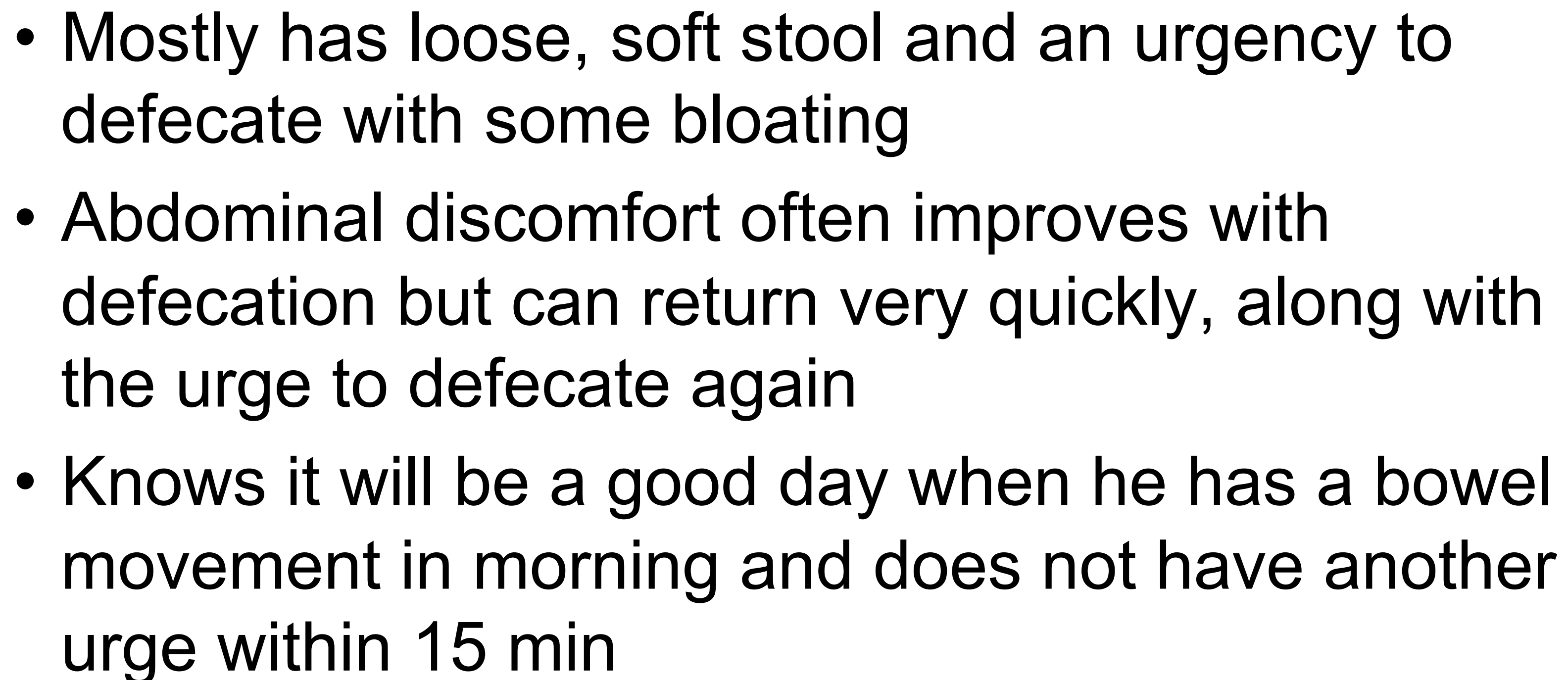
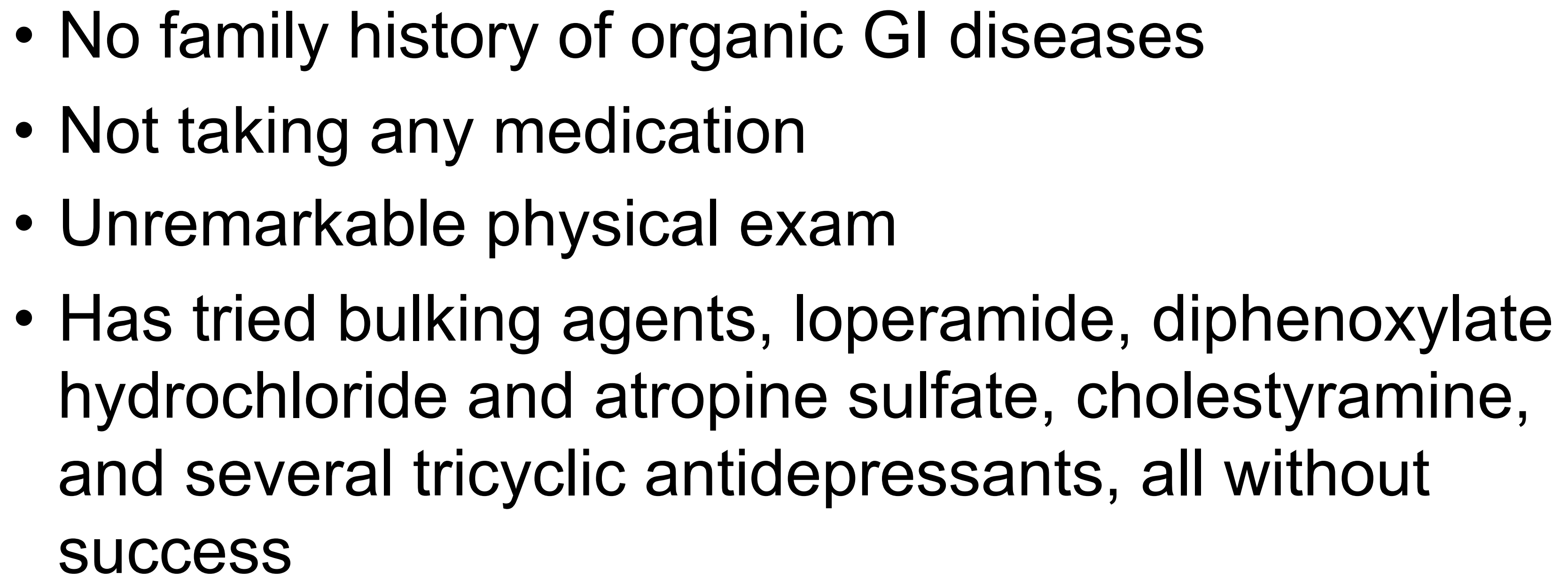

Please read the case narrative that will be discussed in this chapter.


Case Narrative
• 42-yr-old man experiencing bowel habit changes and abdominal pain for last 24 mos
• Symptoms first began after a dysentery-like illness when deployed to Africa as a marine
• Symptoms are getting worse
• Describes feeling sudden urge to defecate and relates it to specific social situations

Case Narrative (cont’d)


• Mostly has loose, soft stool and an urgency to defecate with some bloating
• Abdominal discomfort often improves with defecation but can return very quickly, along with the urge to defecate again
• Knows it will be a good day when he has a bowel movement in morning and does not have another urge within 15 min

Case Narrative (cont’d)


Medical History
• No family history of organic GI diseases
• Not taking any medication
• Unremarkable physical exam
• Has tried bulking agents, loperamide, diphenoxylate hydrochloride and atropine sulfate, cholestyramine, and several tricyclic antidepressants, all without success

Case Narrative (cont’d)

Colonoscopy and Laboratory Test Results

- Random biopsies from colonoscopy were read as normal mucosa
- Tests for celiac disease, thyroid dysfunction, anemia, *Clostridium difficile*, and giardiasis as well as other infectious diseases
  - All results were normal or negative

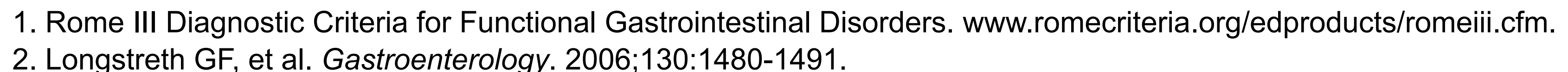
Rome III Diagnostic Criteria for IBS[1]

- Recurrent abdominal pain or discomfort* occurring at least 3 days per month in the last 3 months associated with 2 or more of the following criteria**:
  - Improvement with defecation
  - Onset associated with a change in frequency of stool
  - Onset associated with a change in form (appearance) of stool

IBS with diarrhea (IBS-D)[2]

- Loose or watery bowel movements ≥ 25% of the time with hard or lumpy bowel movements < 25% of the time

*"Discomfort" means an uncomfortable sensation not described as pain
**Criterion fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis



1. Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders. www.romecriteria.org/edproducts/romeiii.cfm.
2. Longstreth GF, et al. *Gastroenterology*. 2006;130:1480-1491.

Distinguishing IBS-D From Other Gastrointestinal Conditions Causing Diarrhea

- Compared to individuals with non-IBS conditions, individuals with IBS are more likely to experience:
  – Greater variation in the frequency of their bowel movements
  – Greater variation in stool form or consistency
  – An unpredictable or irregular pattern of bowel function

For the questions used in this clinical tool, see: Pimentel M, et al. *Dig Dis Sci*. 2010;55:145-149.

- Symptoms of IBS begin after an episode of acute infective gastroenteritis
- Prevalence ranges from 4% to 31%

Halvorson HA, et al. *Am J Gastroenterol*. 2006;101:1894-1899.

IBS Management

For the American College of Gastroenterology's report on IBS treatment options, see:

- American College of Gastroenterology Task Force on Irritable Bowel Syndrome. An evidence-based systematic review on the management of irritable bowel syndrome. *Am J Gastroenterol.* 2009;104 (suppl 1):S1-S35.

Small Intestinal Bacterial Overgrowth (SIBO)

- Abnormally high numbers of bacteria grow in the small intestine
- May play a role in IBS[1]
- Patients with IBS without constipation experienced significant relief of IBS symptoms, bloating, abdominal pain, and loose or watery stools when treated with the antibiotic rifaximin[2]

1. Lin HC. *JAMA*. 2004;292:852-858.

2. Pimentel M, et al. *N Engl J Med*. 2011;364:22-32.

Chapter 2: Evaluation and Management of IBS-C versus CC

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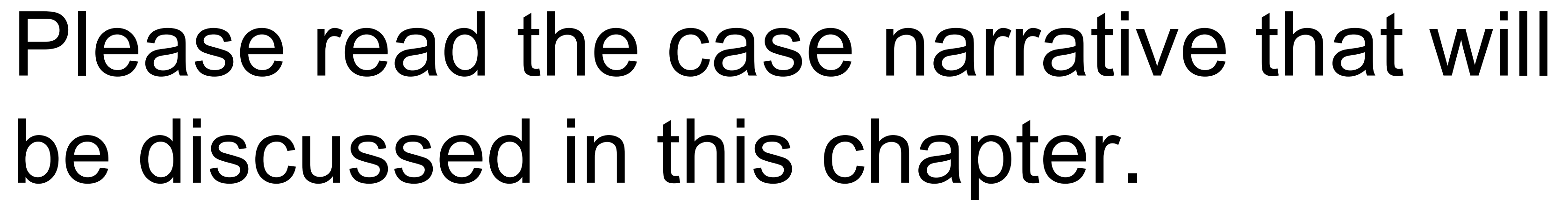
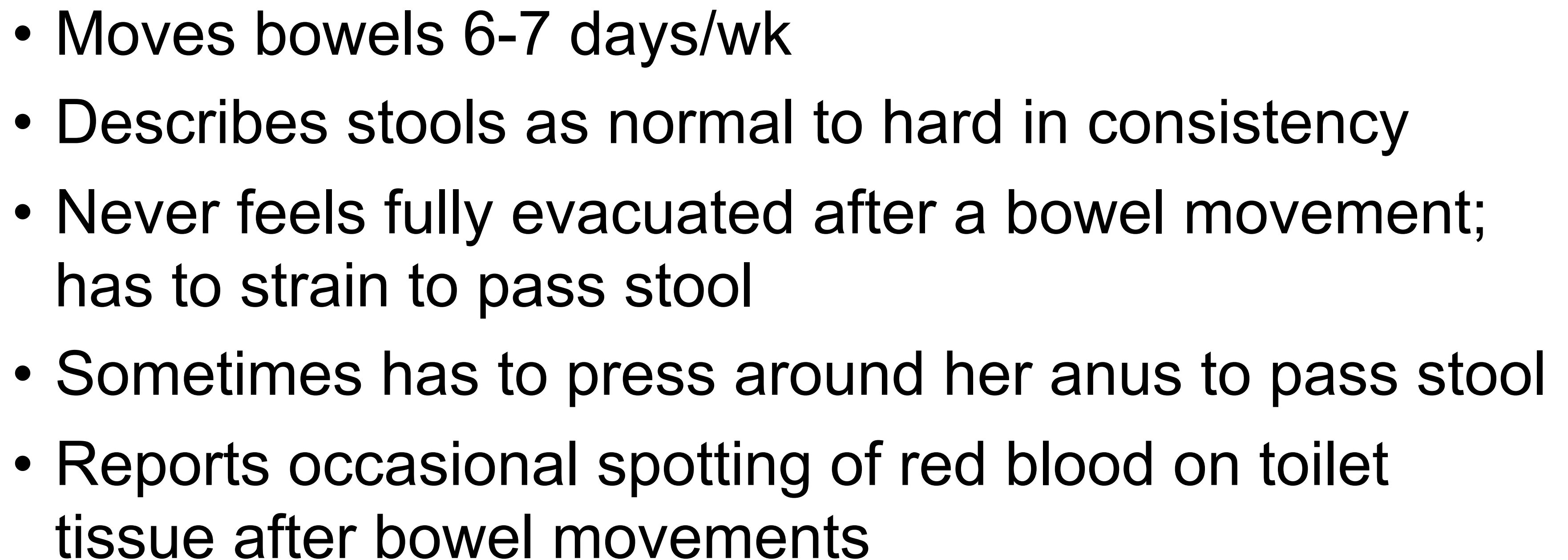


Please read the case narrative that will be discussed in this chapter.

Case Narrative

- 46-yr-old Hispanic woman, complaints of abdominal pain, bloating, and constipation
- Symptoms occurred intermittently for 10 yrs; have worsened over past 2 yrs
- Has crampy lower abdominal pain about 3-5 days/wk; describes pain as severe enough to “double her over”
- Occasionally awakens with abdominal discomfort, but feels more severe pain prior to moving her bowels
- Bloated feeling improves transiently if she passes flatus or a bowel movement

Case Narrative (cont'd)



- Moves bowels 6-7 days/wk
- Describes stools as normal to hard in consistency
- Never feels fully evacuated after a bowel movement; has to strain to pass stool
- Sometimes has to press around her anus to pass stool
- Reports occasional spotting of red blood on toilet tissue after bowel movements

Case Narrative (cont’d)

- Recently gained 5 lb
- No family history of colorectal cancer
- Height 5´4´´; BMI 31 kg/m^2

Case Narrative (cont’d)

- Tried OTC fiber supplement and increased water intake
  - No improvement in constipation symptoms
- Then tried milk of magnesia for several days
  - Developed soft to loose stools
  - Continued to experience abdominal pain and bloating

Clinical Features of IBS

- Abdominal pain or discomfort that improves with defecation[1]
- Change in stool frequency and form/consistency[1]
- Experienced symptoms at least 3 days per month for the past 3 months with symptom onset at least 6 months prior to diagnosis[1]
- Subtyped according to predominant stool pattern[2]
  - **IBS with constipation (IBS-C)**
    - Hard or lumpy bowel movements ≥25% of the time with loose or watery bowel movements <25% of the time

1. Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders. www.romecriteria.org/edproducts/romeiii.cfm.
2. Longstreth GF, et al. *Gastroenterology*. 2006;130:1480-1491.

Warning Signs Necessitating Further Diagnostic Evaluation

For additional information on alarm features, see:

- American College of Gastroenterology Task Force on Irritable Bowel Syndrome. An evidence-based systematic review on the management of irritable bowel syndrome. *Am J Gastroenterol.* 2009;104 (suppl 1):S1-S35.

For additional information on interpreting rectal exams, see:

- Talley NJ. How to do and interpret a rectal examination in gastroenterology. *Am J Gastroenterol*. 2008;103:820-822.

Management Strategies for IBS-C

For a review of IBS-C management options, see:

- American College of Gastroenterology Task Force on Irritable Bowel Syndrome. An evidence-based systematic review on the management of irritable bowel syndrome. *Am J Gastroenterol.* 2009;104 (suppl 1):S1-S35.

Patient Education

Patients with IBS want their healthcare providers to:

- Provide comprehensive information
- Refer them to a source for additional information
- Listen and answer questions
- Provide information about IBS studies and medications
- Provide support and hope

Halpert A, et al. *Dig Dis Sci*. 2010;55:375-383.

Chapter 3: Evaluation and Management of IBS in a Patient With Comorbidities

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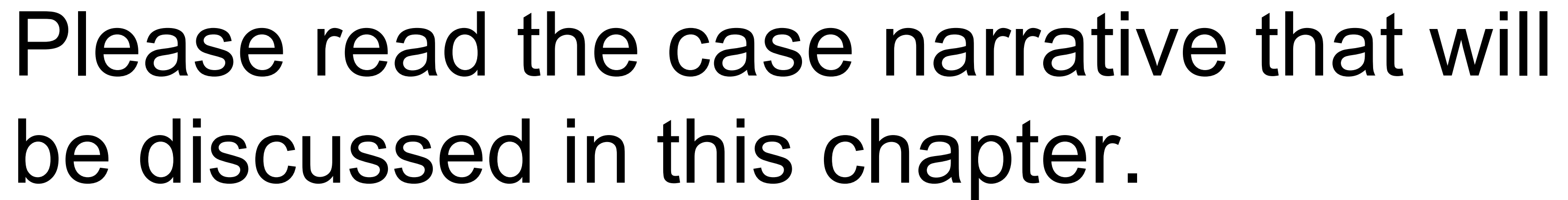


Please read the case narrative that will be discussed in this chapter.

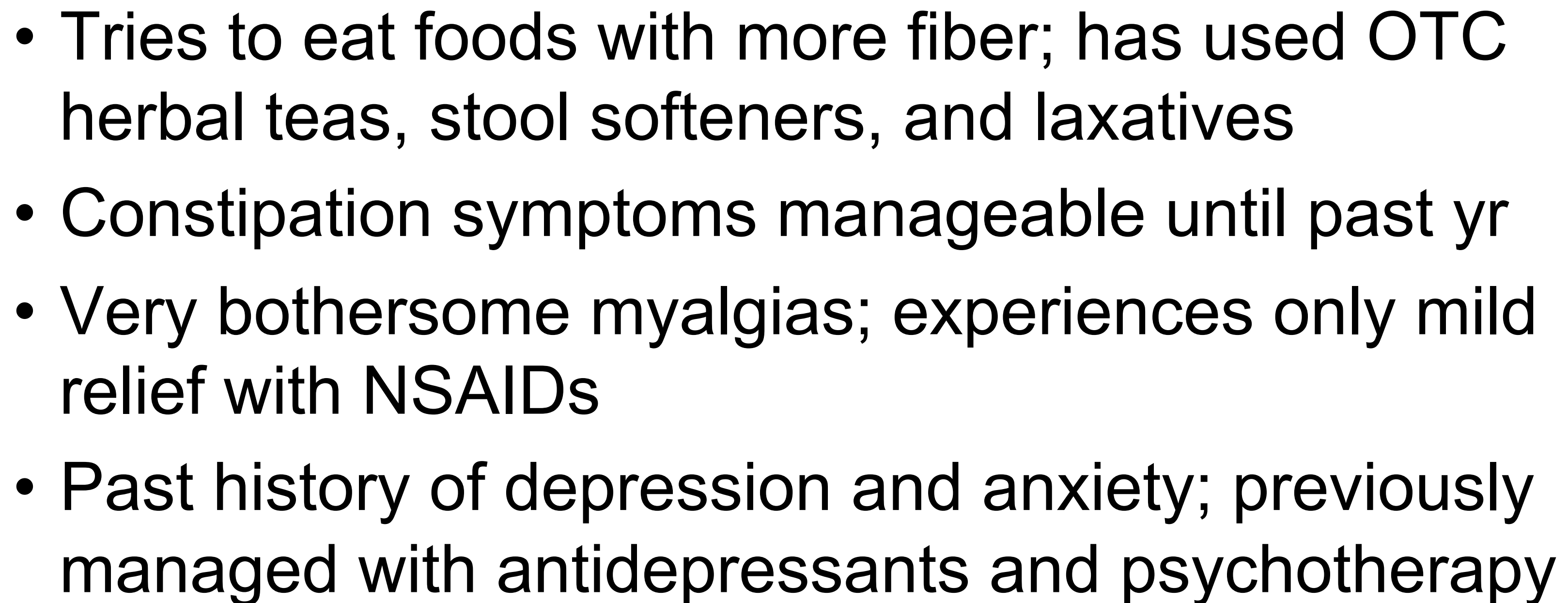
Case Narrative

- 42-yr-old Caucasian woman, long history of constipation
- Involved in motor vehicle accident 1 yr ago
- After the accident:
  - Constipation worsened
  - Developed neck, shoulder, and lower back pain
  - More trouble sleeping with repeated awakenings

Case Narrative (cont’d)

- Previously, constipation symptoms consisted of bowel movement 3-4 times/wk with hard stools and straining
- Also experienced some abdominal discomfort
- More recently, experienced bilateral lower abdominal pain
- Abdominal pain transiently improves after bowel movement, but later returns
- Feels as if stool is not completely evacuated after defecation

Case Narrative (cont’d)



- Tries to eat foods with more fiber; has used OTC herbal teas, stool softeners, and laxatives
- Constipation symptoms manageable until past yr
- Very bothersome myalgias; experiences only mild relief with NSAIDs
- Past history of depression and anxiety; previously managed with antidepressants and psychotherapy

Case Narrative (cont’d)

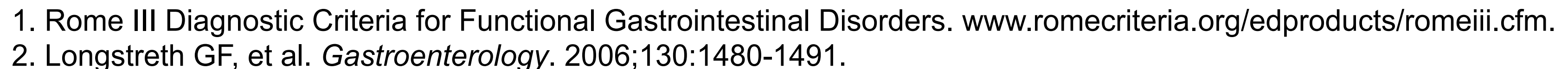
- Physical examination:
  - Normal except for mild lower abdominal tenderness
- Digital rectal examination:
  - Small hemorrhoids; no blood in the stool; no evidence of a rectal mass
  - Paradoxical contraction of the pelvic floor when bearing down
- Normal results for routine lab tests and TSH test
- Diagnosed with fibromyalgia by rheumatologist 1 mo ago
- Started on amitriptyline (20 mg at bedtime); helped her sleep but worsened constipation symptoms

Rome Criteria for Constipation[1]

- Have *2 or more* of the following symptoms:
  - For at least 25% of defecations:
    - Straining
    - Lumpy or hard stools
    - Sensation of incomplete evacuation
    - Sensation of anorectal obstruction/blockage
    - Manual maneuvers to facilitate defecation
  - Fewer than 3 defecations per week

IBS with constipation (IBS-C)[2]

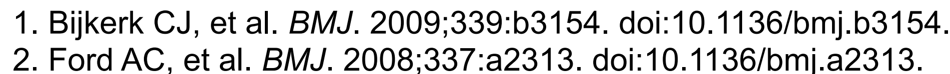
- Hard or lumpy bowel movements ≥25% of the time with loose or watery bowel movements <25% of the time



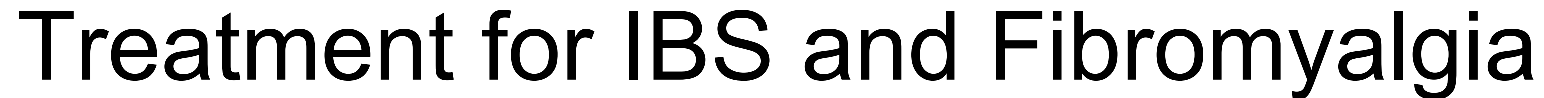
1. Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders. www.romecriteria.org/edproducts/romeiii.cfm.
2. Longstreth GF, et al. *Gastroenterology*. 2006;130:1480-1491.

Fiber Supplementation

- A recent study found that psyllium (soluble fiber) provided more symptom relief at 3 months compared to bran (insoluble fiber) and placebo[1]
- A systematic review and meta-analysis also found fiber to be more effective than placebo for IBS[2]



1. Bijkerk CJ, et al. *BMJ*. 2009;339:b3154. doi:10.1136/bmj.b3154.
2. Ford AC, et al. *BMJ*. 2008;337:a2313. doi:10.1136/bmj.a2313.



Treatment for IBS and Fibromyalgia

- A systematic review and meta-analysis found that antidepressants were more effective than placebo for the treatment of IBS[1]
- For additional information on the use of TCAs and SSRIs for IBS, see the evidence-based review from the American College of Gastroenterology[2]

1. Ford AC, et al. *Gut*. 2009;58:367-378.
2. American College of Gastroenterology Task Force on IBS. *Am J Gastroenterol.* 2009;104(suppl 1):S1-S35.

Chapter 4: Evaluation and Management of IBS-M in a Menstruating Woman

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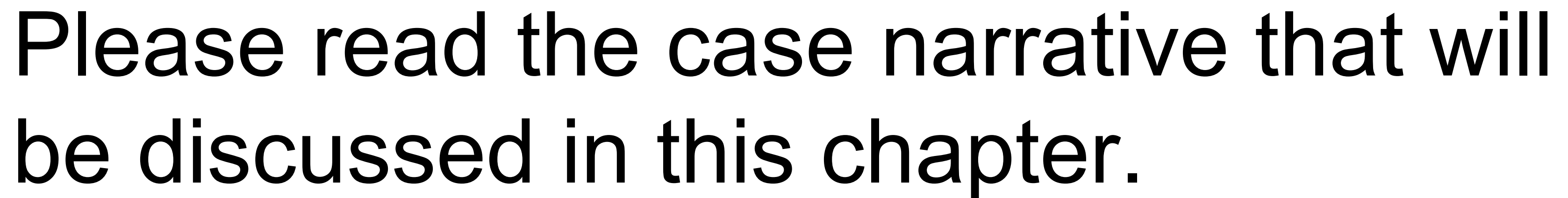
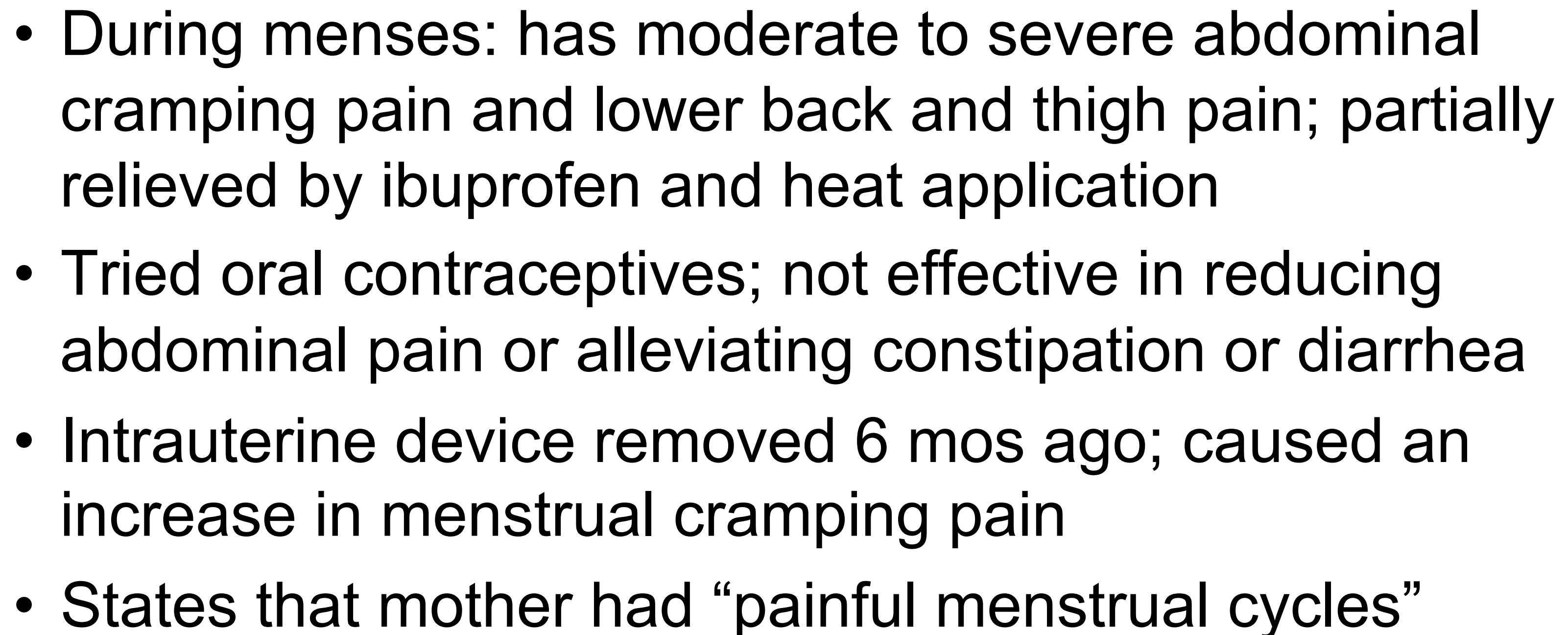


Please read the case narrative that will be discussed in this chapter.

Case Narrative

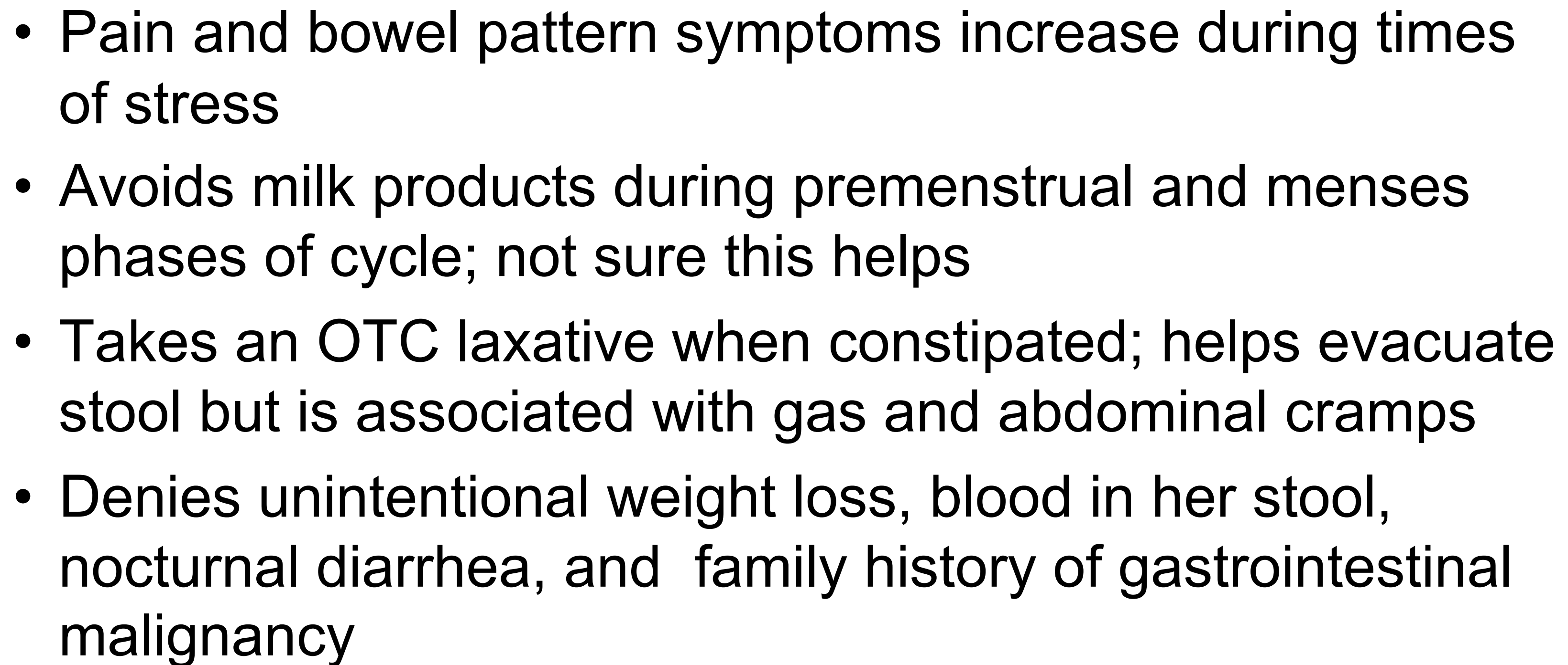
- 22-yr-old female college student, complaints of intermittent bowel habit changes and abdominal pain occurring for last 12 yrs
- Severity of the abdominal pain symptoms increased around menarche
- Abdominal pain and bloating symptoms increase near and during menses
- Experiences constipation, bloating, and excess gas for ~1 wk prior to menses, followed by abdominal pain and loose and watery stools during first 1-2 days of menses

Case Narrative (cont'd)



- During menses: has moderate to severe abdominal cramping pain and lower back and thigh pain; partially relieved by ibuprofen and heat application
- Tried oral contraceptives; not effective in reducing abdominal pain or alleviating constipation or diarrhea
- Intrauterine device removed 6 mos ago; caused an increase in menstrual cramping pain
- States that mother had "painful menstrual cycles"

Case Narrative (cont'd)


- Pain and bowel pattern symptoms increase during times of stress
- Avoids milk products during premenstrual and menses phases of cycle; not sure this helps
- Takes an OTC laxative when constipated; helps evacuate stool but is associated with gas and abdominal cramps
- Denies unintentional weight loss, blood in her stool, nocturnal diarrhea, and family history of gastrointestinal malignancy

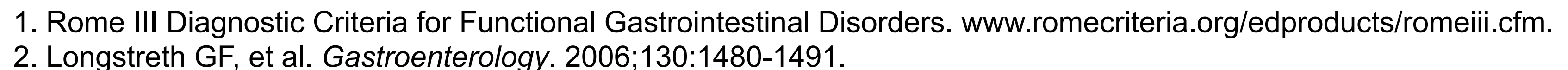
- Kept an abdominal pain and bowel symptom diary daily for 4 wks
  - Pain symptom levels are higher at menses than at other times of cycle
  - Experiences mild abdominal discomfort on most weekdays
  - Tried increasing dietary fiber intake when experiencing constipation symptoms, but worsened bloating

Diagnostic Criteria for IBS[1]

- Abdominal pain or discomfort that improves with defecation
- Change in stool frequency and form
- Experienced symptoms at least 3 days per month for the past 3 months with symptom onset at least 6 months prior to diagnosis

Mixed IBS (IBS-M)[2]

- Loose or watery stools ≥25% of the time AND hard or lumpy stools ≥25% of the time



1. Rome III Diagnostic Criteria for Functional Gastrointestinal Disorders. www.romecriteria.org/edproducts/romeiii.cfm.
2. Longstreth GF, et al. *Gastroenterology*. 2006;130:1480-1491.

- Due to menstrual cycle fluctuations, women with and without IBS may experience:
  - Bowel discomfort
  - Abdominal pain/discomfort
  - Bloating
  - Altered bowel patterns
- However, symptoms tend to be more severe in women with IBS

Heitkemper MM, et al. *Gend Med.* 2009;6(suppl 2):152-167.

- Anemia
- Weight loss
- Family history of colorectal cancer
- Family history of inflammatory bowel disease
- Family history of celiac sprue
- Nocturnal pain*
- Rectal bleeding*

*Nocturnal pain and rectal bleeding provide less diagnostic value in differentiating IBS from organic disease.
Note: Per expert opinion, this patient would also benefit from a gynecologic exam and abdominal ultrasound.

American College of Gastroenterology Task Force on IBS. *Am J Gastroenterol.* 2009;104(suppl 1):S1-S35.

Management Strategies for IBS-M

For additional information on IBS management options, see:

- American College of Gastroenterology Task Force on Irritable Bowel Syndrome. An evidence-based systematic review on the management of irritable bowel syndrome. *Am J Gastroenterol.* 2009;104 (suppl 1):S1-S35.

Chapter 5: Management of an Obese Patient With Worsening Daytime and Nighttime GERD Symptoms

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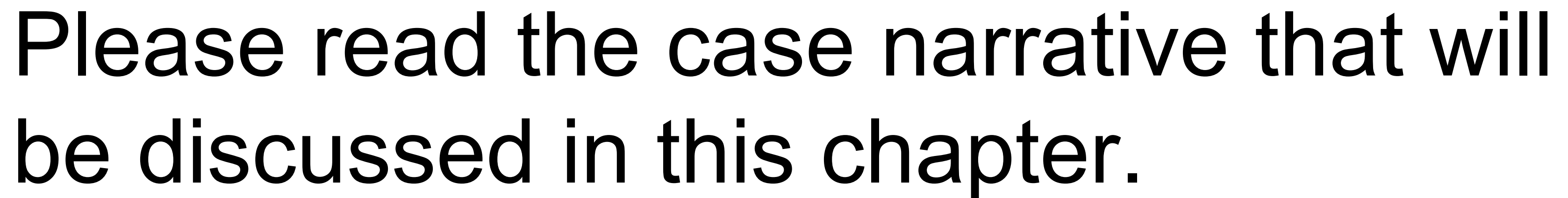
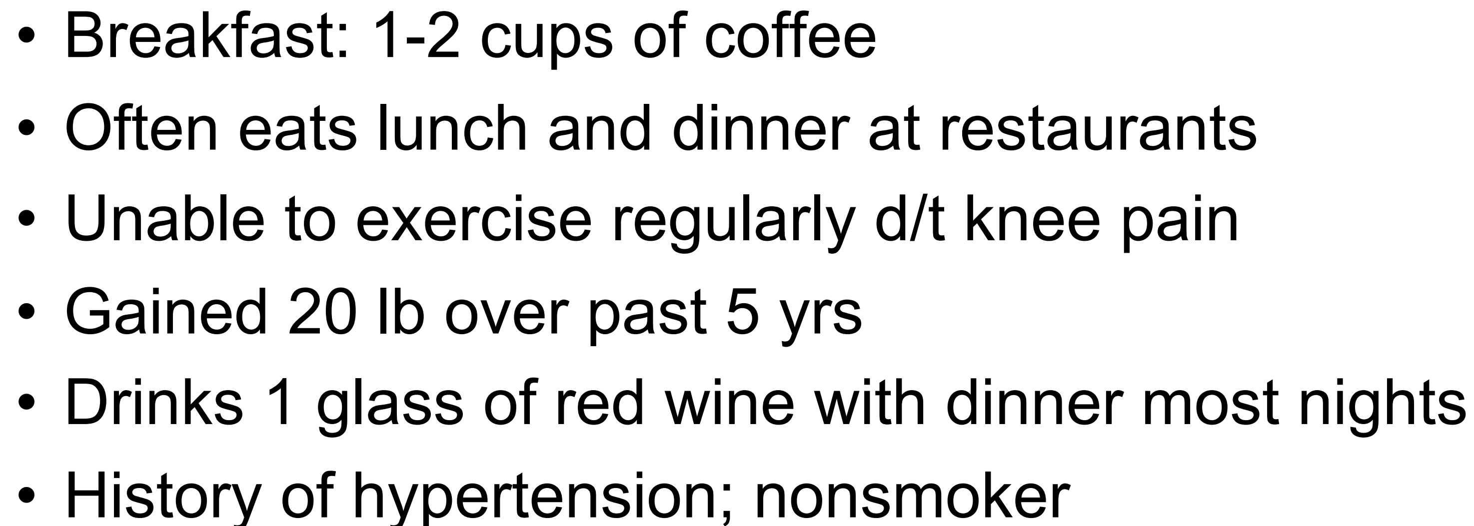


Please read the case narrative that will be discussed in this chapter.

Case Narrative Part 1

- 48-yr-old Caucasian man reports heartburn, 4 to 5 days/wk
- Symptoms mostly occur after meals
- Reports “food comes back up into his mouth” after eating
- Rarely feels as if foods get stuck at level of lower sternum when he eats too quickly and does not chew food well enough
- Symptoms progressively worsening over the past 3-4 yrs
- Rarely feels nauseated after eating. Denies vomiting and anorexia

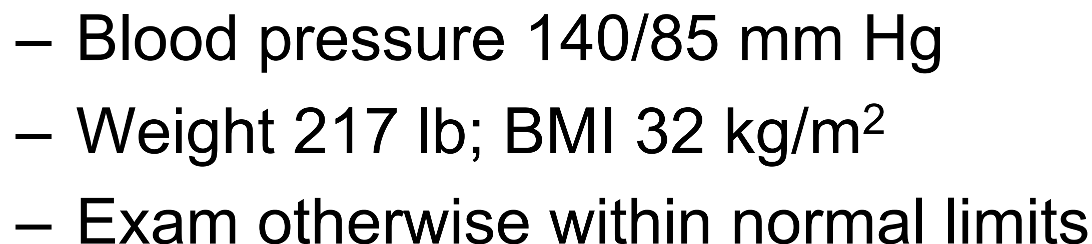
Case Narrative Part 1 (cont’d)



- Breakfast: 1-2 cups of coffee
- Often eats lunch and dinner at restaurants
- Unable to exercise regularly d/t knee pain
- Gained 20 lb over past 5 yrs
- Drinks 1 glass of red wine with dinner most nights
- History of hypertension; nonsmoker

Case Narrative Part 1(cont’d)

- Medications
  - Verapamil, 1 baby aspirin per day, OTC ibuprofen 400 mg 3-4 times/wk, OTC antacids, and famotidine daily
- Physical exam



  - Blood pressure 140/85 mm Hg
  - Weight 217 lb; BMI 32 kg/m^2
  - Exam otherwise within normal limits

Alarm Symptoms: When to Consider an Upper Endoscopy?

- Dysphagia*
- Weight loss
- Epigastric mass upon examination
- Vomiting, regurgitation
- Evidence of gastrointestinal blood loss

*There is insufficient evidence to recommend for or against using alarm symptoms other than troublesome dysphagia as screening tools for esophageal adenocarcinoma.

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

Case Narrative Part 2

- Patient undergoes upper endoscopy:
  - Los Angeles grade C erosive esophagitis (moderately severe) involving distal 5 cm of esophagus
  - 3- to 4-cm hiatal hernia
  - Biopsies from the distal esophagus reveal changes consistent with erosive esophagitis; no evidence of Barrett's esophagus

- PPIs are more effective than H2 blockers for:
  - Healing esophagitis
  - Providing symptomatic relief
  - Maintaining healing of esophagitis
- H2 blockers have a more rapid onset of action and may be appropriate for some patients
- No clear recommendations for either step-up or step-down management strategies for GERD

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

- Few studies exist in the literature on the use of twice-daily PPIs
- However, expert opinion unanimously recommends twice-daily dosing for patients with GERD with an unsatisfactory response to once-daily PPI therapy
- Optimal timing for twice-daily dosing is 30-60 minutes before breakfast and dinner

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

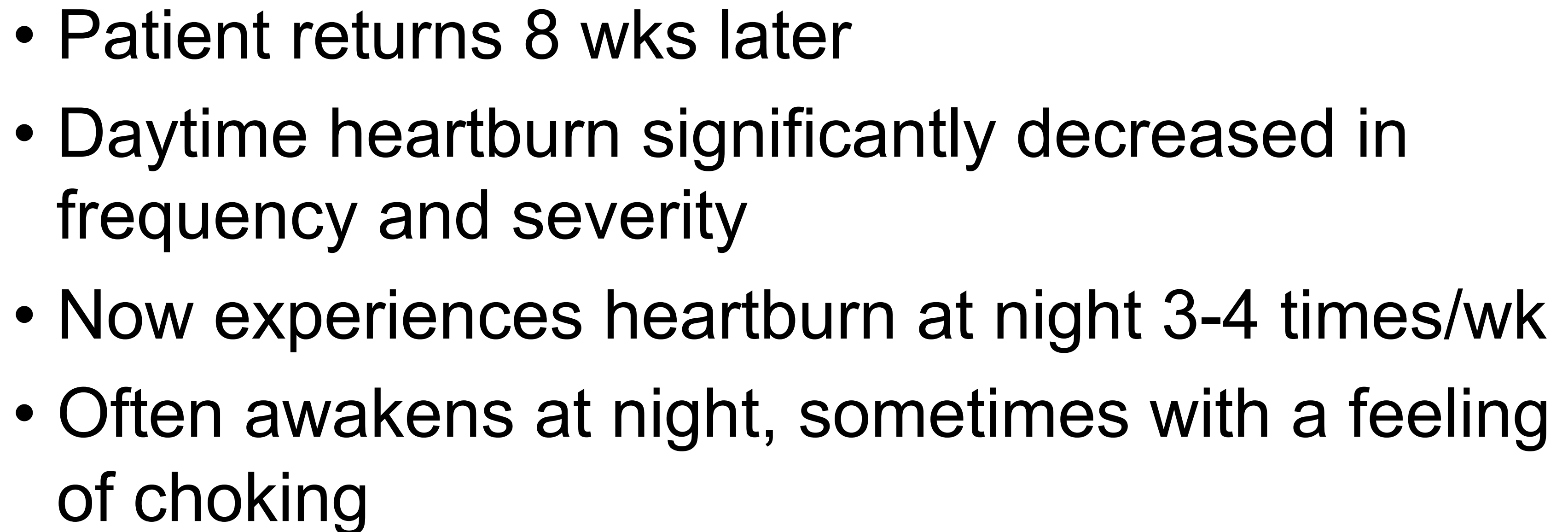
Follow-up Endoscopy: When Is It Recommended?

- No direct evidence to support the use of endoscopy to screen for Barrett's esophagus or esophageal adenocarcinoma in patients with chronic GERD[1]
- However, a follow-up endoscopy may be considered:[2]
  - If symptoms are still present
  - To demonstrate that mucosal healing has occurred
  - To ensure Barrett's esophagus was not missed in a previous endoscopy in patients with severe inflammation of the esophagus

1. Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

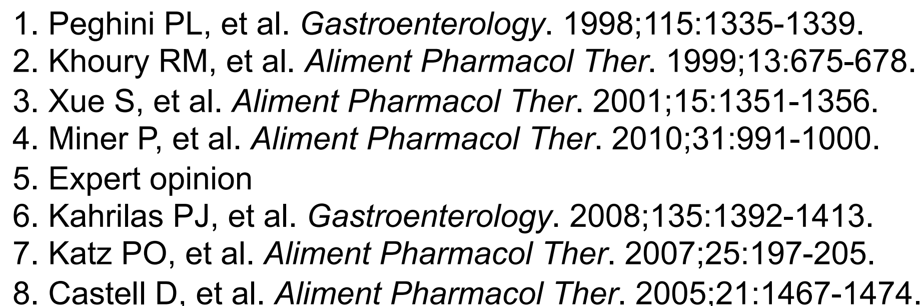
2. Expert opinion

Case Narrative Part 3



Nighttime GERD Management

- Consider adding an H2 blocker at bedtime[1-4]
  - Studies show gastric pH is increased with this regimen
- Consider lifestyle modifications[5,6]
  - Eat smaller meals in the evening
  - Avoid eating 2-3 hours before bedtime
  - Elevate the head of the bed 6-8 inches
- Consider a PPI with an immediate-release formulation[5,7,8]



1. Peghini PL, et al. *Gastroenterology*. 1998;115:1335-1339.
2. Khoury RM, et al. *Aliment Pharmacol Ther*. 1999;13:675-678.
3. Xue S, et al. *Aliment Pharmacol Ther*. 2001;15:1351-1356.
4. Miner P, et al. *Aliment Pharmacol Ther*. 2010;31:991-1000.
5. Expert opinion
6. Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.
7. Katz PO, et al. *Aliment Pharmacol Ther*. 2007;25:197-205.
8. Castell D, et al. *Aliment Pharmacol Ther*. 2005;21:1467-1474.

Chapter 6: Management of a Patient With Multiple Comorbidities and Worsening Extraesophageal GERD Symptoms

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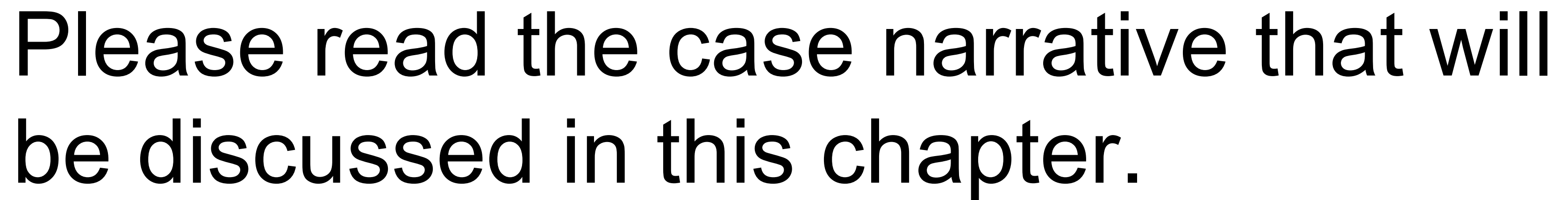
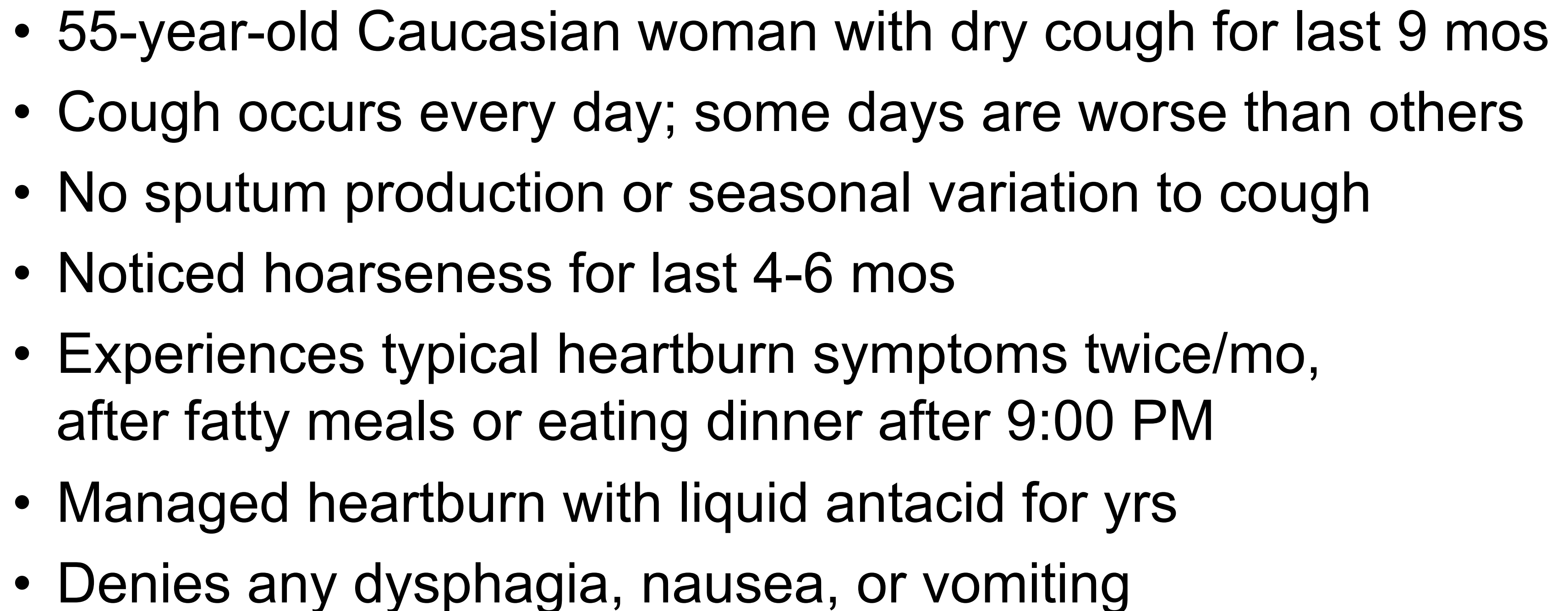


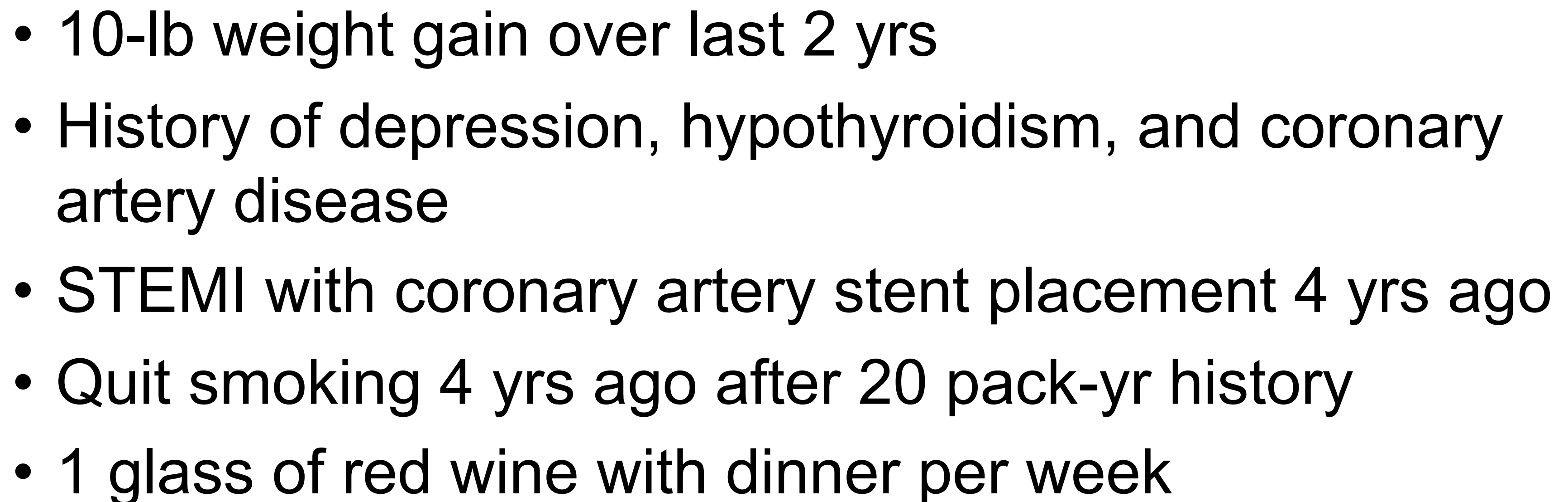
Please read the case narrative that will be discussed in this chapter.



Case Narrative Part 1

- 55-year-old Caucasian woman with dry cough for last 9 mos
- Cough occurs every day; some days are worse than others
- No sputum production or seasonal variation to cough
- Noticed hoarseness for last 4-6 mos
- Experiences typical heartburn symptoms twice/mo, after fatty meals or eating dinner after 9:00 PM
- Managed heartburn with liquid antacid for yrs
- Denies any dysphagia, nausea, or vomiting

Case Narrative Part 1 (cont’d)

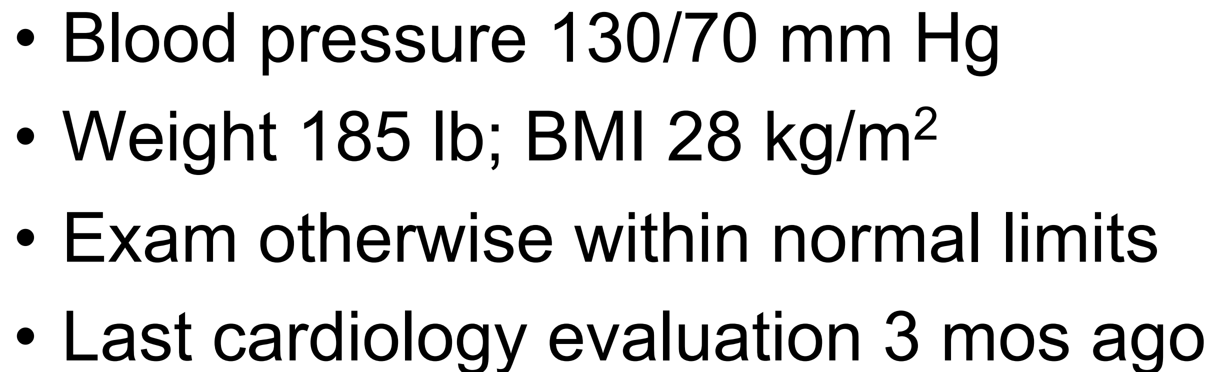

Patient History
• 10-lb weight gain over last 2 yrs
• History of depression, hypothyroidism, and coronary artery disease
• STEMI with coronary artery stent placement 4 yrs ago
• Quit smoking 4 yrs ago after 20 pack-yr history
• 1 glass of red wine with dinner per week

Case Narrative Part 1 (cont’d)

Medications

- Clopidogrel, atorvastatin, carvedilol, lisinopril, levothyroxine, paroxetine
- Liquid antacid prn, typically twice/mo

Physical Examination



- Blood pressure 130/70 mm Hg
- Weight 185 lb; BMI 28 kg/m^2
- Exam otherwise within normal limits
- Last cardiology evaluation 3 mos ago

- Explore contributing factors other than GERD
- Endoscopy
- Laryngoscopy
- PPI trial

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

Therapy Selection for Extraesophageal Symptoms

- If patients have concomitant esophageal GERD syndrome, twice-daily PPIs for 2 months is a practical clinical strategy[1]
- No major differences in efficacy among available PPIs[2]
- May consider adding an H2 blocker at bedtime to twice-daily PPIs[3]
- Need to consider PPI onset of action (optimal timing is 30-60 minutes before a meal)[1]

1. Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.
2. Khan M, et al. *Cochrane Database Syst Rev.* 2007 April 18;(2):CD003244.
3. Expert opinion

- Recommend weight loss
- Avoid foods that precipitate reflux or heartburn
- Elevate the head of the bed or use a wedge-shaped pillow

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

Please read the next part of this case.

Case Narrative Part 2

- Started on PPI every morning
- Undergoes upper endoscopy
  - 2-cm hiatal hernia but otherwise normal
- Returns 4 wks later
  - Reports that cough and hoarseness have not improved
  - Cardiologist told her that PPIs and clopidogrel may not be safe to use together

For additional information on this topic, see:

- Kwok CS, et al. Meta-analysis: the effects of proton pump inhibitors on cardiovascular events and mortality in patients receiving clopidogrel. *Aliment Pharmacol Ther.* 2010;31:810-823.
- Laine L, et al. Proton pump inhibitor and clopidogrel interaction: fact or fiction? *Am J Gastroenterol*. 2010;105:34-41.
- Bhatt DL, et al; COGENT Investigators. Clopidogrel with or without omeprazole in coronary artery disease. *N Engl J Med*. 2010;363:1909-1917.

Please read the next part of this case.

Case Narrative Part 3

- Started on PPI bid (morning and noon) and H2 blocker before bedtime
- Undergoes esophageal impedance test and ambulatory esophageal pH monitoring
  - Minimal esophageal reflux and adequate acid suppression
- Saw ENT who performed laryngoscopy
  - Red vocal cords most likely caused by GERD
- Asks about surgery to control her symptoms

Antireflux Surgery

- Observational studies suggest some benefit for carefully selected patients with reflux cough syndrome or reflux asthma syndrome[1]
- Surgery did not reliably improve laryngeal symptoms in patients unresponsive to PPI therapy in one study[2]
- Must consider benefits versus potential symptoms resulting from antireflux surgery[1]
- Further studies are needed in patients with extraesophageal manifestations[3]

1. Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.
2. Swoger J, et al. *Clin Gastroenterol Hepatol*. 2006;4:433-441.
3. Iqbal M, et al. *J Laparoendosc Adv Surg Tech A*. 2008;18:789-796.

Duration of Treatment for Extraesophageal Reflux Syndrome

- At least 40%-50% of patients have persistent symptoms after 8 weeks of empirical PPI therapy
- Expert opinion recommends continued maintenance therapy for symptom control
- Attempt step-down therapy to the lowest PPI dose

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.

Safety Concerns: PPIs and Fracture Risk

- Insufficient evidence to mandate bone density studies or calcium supplementation because of PPI use
- Elderly patients should be screened and treated for osteoporosis regardless of PPI use

Kahrilas PJ, et al. *Gastroenterology*. 2008;135:1392-1413.