Author: Leigh A. Patterson MD Reviewer: Greg Polites, MD

Case Title: Diverticulitis

# Target Audience: med students, residents

Primary Learning Objectives:

1. Demonstrate understanding of the complex etiology of abdominal pain in the elderly

2. Demonstrate clinical assessment skills needed to differentiate conditions that are

primary causes of abdominal pain from potential confounding conditions

3. Recognize and manage diverticular disease.

4. Demonstrate professional interpersonal and communication skills.

Secondary Learning Objectives:

1. Appropriate management of pain and symptoms of diverticulitis

2. Appropriate antibiotic selection for diverticulitis

3. Appropriate selection of imaging modalities for diverticulitis

4. Appropriate transition of care

Critical actions checklist

1. Recognize pain unrelieved with relief of urinary obstruction

2. Elicit history of constipation

3. Obtain appropriate imaging for new diagnosis of diverticulitis (CT abdomen preferred over barium enema)

4. Initiate antibiotic therapy

5. Consult surgeon and admit patient for inpatient therapy.

## Environment (if using as a simulation case)

1. Room Set Up – ED, conference room for oral board case, in sim lab

Manikin Set Up – Low Fidelity manikin or standardize patient

* 1. Props – lab results, X-rays, CT scans

1. Distracters – none

## Actors (if using as group teaching case in sim lab)

1. Roles – patient, nurse, consultant surgeon
2. Who may play them – other residents, other students,
3. Action Role – supporting realistic setting in sim lab.

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**CASE SUMMARY**

**CORE CONTENT AREA**

Abdomen/Gastrointestinal

**SYNOPSIS OF CASE**

The patient is a 76 yo man who complains of abdominal pain, nausea without emesis. Onset 6 hours prior to arrival in the ED. He has the urge to void but has been unable to urinate since the previous night. Patient underwent oral surgery 2 days earlier and has been treated with oral Penicillin V and Percocet since surgery. He has had difficulty in the past with initiating a urine stream and is restless with the pain and urge to void. His wife is able to recall that he needed to be catheterized after his CABG for urinary obstruction.

Although a catheter (foley but In&Out straight cath would also be acceptable) is placed and 800 cc of clear urine is returned, the patient’s pain is not completely relived. A repeat exam demonstrates persistent bilateral lower quadrant pain and tenderness that is more pronounced in the LLQ. ROS elicits a history of constipation in the last few years made worse recently by oral opiate use.

The candidate may focus on the urinary retention initially whether by simply catheterizing patient or ultrasounding prior to cath. However, the candidate should recognize that elderly with abdominal pain have increased likelihood of surgical etiology for pain and that the intervention, while appropriate, did not relieve pain. Additional sources of LLQ pain and tenderness should be investigated by laboratory evaluation and imaging, specifically CT abdomen with contrast. Pain should be treated. Antibiotics initiated. Repeat VS demonstrate low-grade fever 101 with normal HR and BP. After CT results available, a consultation with surgeon for ongoing management of perforation should result in admission for new diagnosis of diverticulitis with evidence of perforation.

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**CRITICAL ACTIONS**

**Scenario branch points/ PLAY OF CASE GUIDELINES**

1. **Critical Action**

Recognize pain unrelieved with relief of urinary obstruction.

Cueing Guideline: Candidate should reassess pain after urinary obstruction relieve by asking patient and re-examining abdomen. If not, nursing staff should prompt physician “Doctor, he is still complaining of pain.”

1. **Critical Action**

Elicit history of constipation.

Cueing Guideline: Candidate should take a thorough history to include additional information of constipation and recent narcotic use, prior history of urinary obstruction causing different or less severe pain. If the candidate limits history, wife may prompt patient to “tell the doctor about all your pain” or patient may ask, “Do you think this is all my bladder?”

1. **Critical Action**

Obtain appropriate imaging for new diagnosis of diverticulitis.

(CT abdomen preferred over barium enema)

Cueing Guideline: Give 1-2 lines on how to prompt the candidate if he/she is having problem.

1. **Critical Action**

Initiate antibiotic therapy.

This patient has moderate diverticulitis without frank peritonitis. Appropriate therapy includes either monotherapy: ampicillin/sulbactam; ticarcillin/clavulanate; ertapenem; OR combination therapy with fluoroquinolone (ciprofloxacin) and metronidazole.

Cueing Guideline: If antibiotics not ordered prior to CT, nursing should ask if the doctor wants to “start any medications.” If no response, the consulting surgeon should ask if the candidate has started any antibiotics.

1. **Critical Action**

Consult surgeon and admit patient for inpatient therapy.

Patient should be admitted to either surgeon or hospitalist with urgent surgical consult.

Cueing Guideline: If candidate attempts discharge, the patient and family should express concerns about treatment and ask for a second opinion.

**SCORING GUIDELINES**

1. If candidate ignores or simply orders more pain meds without re-assessment, score down on IP and PC items.

2. Score high IP/PC for candidate who takes full history and initiates foley with plans to reassess. Score down for patient who requires cues to obtain history elements.

3. High scores for PC/MK for CT ordering, lower for barium enema, and fail if no imaging.

4. High scores for PC/MK for correct and early (pre-CT) antibiotics, lower for post-CT, and fail if no antibiotics.

5. High scores for PC/IP if consult is well organized, clear and direct. Patient and wife should be updated. Lower if prompting needed to consult, admit.

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**HISTORY**

**Onset of Symptoms:** at 0300 (6 hours prior to arrival in the ED). Woke patient from sleeping

**Background Info:** 76 yo male presents with acute onset of abd pain that began around 3am this morning. Pain is worst in suprapubic region. +chills, denies fever. 1 episode of nausea that resolved spontaneously. Recent constipation. Had dental surgery 2 days ago and has been on PCN and Percocet. Also notes could no urinate this am. Last urinated last evening, >16 hours.

**Chief Complaint:** My stomach hurts at the bottom. I am nauseated and I cannot urinate.

**Past Medical Hx:** Coronary Artery Disease

Glaucoma

Colon Polyps (negative for malignancy)

Melanoma in Situ

Hypercholesterolemia

**Past Surgical Hx:** CABG – 2 vessel

Melanoma excision

Colonoscopy (last 5 years ago)

**Habits:** Smoking: Never

ETOH: No

Drugs: No

**Family Medical Hx:** Pt adopted – unaware of any family history.

**Social Hx:** Marital Status: Married

Education:

Employment: Retired

**ROS:** Constitutional: Positive for chills. Negative for fever.

Skin: Negative for rash.

HENT: Negative for headaches.

Eyes: Negative for blurred/double vision and photophobia.

Cardiovascular: Negative for chest pain.

Respiratory: Is not experiencing shortness of breath.

GI: Positive for abdominal pain and constipation. Negative for

vomiting.

Genitourinary: Negative for hematuria.

Musculoskeletal: Negative for falls.

Endo/Heme/Allergies: Negative for polydipsia.

Neurological: Negative for dizziness and loss of consciousness.

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**PHYSICAL EXAM**

**Patient Name: Charlie Brown Age & Sex: 76 year old male**

**General Appearance:** He is oriented. He appears well developed and well nourished. He

does not appear diaphoretic. He appears uncomfortable.

**Vital Signs:** T36.3 (97.3); HR 99; RR 18; BP 150/75; RA O2 sat 99

**Head:** Normocephalic and atraumatic

**Eyes:** No discharge or scleral icterus. PERRL. EOMI Bilaterally

**Ears:** Canals normal bilateral. TMs normal bilaterally

**Mouth:** oropharynx clear. Mucous membranes moist. No pallor

**Neck:** Normal range of motion. Neck supple

**Skin:** Skin is warm and dry. He is not diaphoretic

**Chest:** Median sternotomy well healed. No crepitus

**Lungs:** Effort normal and breath sounds normal. No wheezes. No rales

**Heart:** Regular rhythm and normal heart sounds. No gallop/friction rub. No murmur

**Back:** No CVA tenderness

**Abdomen:** Soft without distention. Bowel sounds are normal. Most tender in suprapubic region but also in epigastric region and entire lower abdomen. He has no rebound and no guarding

**Extremities:** - c/c/e

**Rectal:** Normal rectal tone. No masses or gross blood. Brown, hemeoccult negative stool

**Neurological:** He is alert and oriented. No cranial nerve deficit. Normal gait

**Mental Status:** He has a normal mood and affect. His behavior is normal. Judgment and thought content normal

**For Examiner Only**

**STIMULUS INVENTORY**

#1 Emergency Admitting Form

#2 CBC

#3 BMP

#4 U/A

#5 CXR

#6 Acute abdominal series

#7 CT abdomen/pelvis

#8 Debriefing materials

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**LAB DATA & IMAGING RESULTS**

**Stimulus #2 Diagnostic Imaging**

**Complete Blood Count (CBC) Stimulus #5**

WBC 8.8/mm3 **CXR:** Negative

Hgb 13g/dL

Hct 37% **Stimulus #6**

Platelets 168/mm3 **AAS:**  Negative

Differential

Segs 86%

Bands <10%

Lymphs 7% **Stimulus #7**

Monos 6% **Abd/Pelvis CT**:

Eos 0%

The appendix is normal. Moderate colonic

diverticulosis with wall thickening and adjacent inflammation in the sigmoid region compatible with diverticulitis. There is at least one focus of extraluminal gas anterior to the sigmoid consistent with contained perforation. No evidence of a drainable fluid collection/abscess. Moderate arterial calcification.

**Stimulus #3**

**Basic Metabolic Profile (BMP)**

Na+ 137 mEq/L

CO2 25 mEq/L

Cl- 109 mEq/L

Glucose 102 mg/dL

K+ 3.7 mEq/L

BUN 16 mg/dL

Creatinine 1.04 mg/dL

**Stimulus #4**

**Urinalysis (U/A)**

Color yellow

Sp gravity 1.015

Glucose neg

Protein neg

Ketone neg

Leuk. Est. neg

Nitrite neg

WBC none

RBC 5-19

**Learner Stimulus #1**

**ABEM General Hospital**

**Emergency Admitting Form**

Name: Charlie Brown

Age: 76 years

Sex: Male

Method of Transportation: Private car

Person giving information: Wife, Lucy Brown

Presenting complaint: abdominal pain, cannot urinate

**Background:** Patient woke this morning with pain in the lower abdomen. Tried to urinate but was unable.

**Triage or Initial Vital Signs**

BP: 150/75

P: 99

R: 18

T: 36.3 oral

**Learner Stimulus #2**

**Complete Blood Count (CBC)**

WBC 8.8/mm3

Hgb 13g/dL

Hct 37%

Platelets 168/mm3

Differential

Segs 86%

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**Learner Stimulus #3**

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**Learner Stimulus #4**

**Urinalysis (U/A)**

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Sp gravity 1.015

Glucose neg

Protein neg

Ketone neg

Leuk. Est. neg

Nitrite neg

WBC none

RBC 5-19**Learner Stimulus #5**



**Learner Stimulus #6**

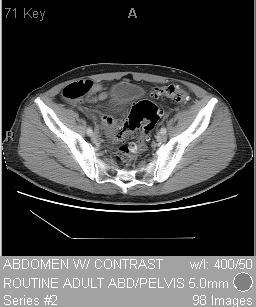


**Learner Stimulus #6 Continued**





**Learner Stimulus #7**



**Diverticulitis**

**Candidate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Examiner \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Critical Actions:**

* Recognize pain unrelieved with relief of urinary obstruction.
* Elicit history of constipation.
* Obtain appropriate imaging for new diagnosis of diverticulitis.
* Initiate antibiotic therapy.
* Consult surgeon and admit patient for inpatient therapy.

**Dangerous Actions:** (Performance of one dangerous action results in failure of the case)

* Discharge patient after foley catheter placed without further investigation of pain.

**Data acquisition**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Problem solving**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Patient management**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Resource utilization**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Health care provided**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Patient Interpersonal relations**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Comprehension of path physiology**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

**Clinical competence (overall)**

Worst 1 2 3 4 5 6 7 8 Best

NOTES

Date: Examiner: Examinee(s):

Scoring: In accordance with the Standardized Direct Observational Tool (SDOT)

The learner should be scored (based on level of training) for each item above with one of the following:

NI = Needs Improvement

ME = Meets Expectations

AE = Above Expectations

NA= Not Assessed

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Critical Actions** | **NI** | **ME** | **AE** | **NA** | **Category** |
| Recognize pain unrelieved with relief of urinary obstruction. |  |  |  |  | PC, MK, PBL |
| Elicit history of constipation. |  |  |  |  | PC, MK |
| Obtain appropriate imaging for new diagnosis of diverticulitis. |  |  |  |  | PC, MK, PBL |
| Initiate antibiotic therapy |  |  |  |  | PC, MK, PBL |
| Consult surgeon and admit patient for inpatient therapy. |  |  |  |  | PC, MK, ICS, P |

The score sheet may be used for a variety of learners. For example, in using the case for 4th year medical students, the key teaching points of the case may be the recognition of shock and treatment with appropriate fluid resuscitation. Other items may be marked N/A= not assessed.

Category: One or more of the ACGME Core Competencies as defined in the SDOT

PC= Patient Care

Compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

MK= Medical Knowledge

Residents are expected to formulate an appropriate differential diagnosis with special attention to life-threatening conditions, demonstrate the ability to utilize available medical resources effectively, and apply this knowledge to clinical decision making

PBL= Practice Based Learning & Improvement

Involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care

ICS= Interpersonal Communication Skills

Results in effective information exchange and teaming with patients, their families, and other health professionals

P= Professionalism

Manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population

SBP= Systems Based Practice

Manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

**Keywords for future searching functions**

Abdominal, pain, geriatrics, diverticulitis

**References**

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Comparato, G. J Recurrent Diverticulitis. Clin Gastroeneterol 2008 42(10): 1130-34.

Touzious, JG. Diverticulitis and Acute Diverticulosis. Gastroenterol Clin NA, 38(2009) 512-525.

**Has this work been previously published?** No

**ENVIRONMENT**

This scenario requires (checked boxes):

|  |  |  |  |
| --- | --- | --- | --- |
|  | Simulator  Type: | | |
| X | Standardized Patient | | |
| X | | Non-Invasive BP Cuff |  | | ETT |  |
|  | | 2 lead EKG |  | | LMA |  |
|  | | Pulse Oximeter |  | | Laryngoscope |  |
|  | | Arterial Line |  | | Fiberoptic scope |  |
|  | | CVP |  | | Gum Bougie |  |
|  | | PA Catheter |  | |  |  |
|  | | Temperature Probe |  | | Crash Cart |  |
|  | | Capnograph |  | | Central line set up |  |
|  | | Resp Rate Monitor |  | | Chest tube set up |  |
|  | |  |  | | Ultrasound Machine |  |

|  |  |  |
| --- | --- | --- |
|  | SP for family member |  |
|  | Additional nurse SP |  |
|  | Other SP |  |