

EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

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January 2017 | Vol 3 | Issue 44

Sigmoid Diverticulitis

A 40-year-old male with a history of ADHD and hypothyroidism presents to the ED with 1 hour of diffuse achy abdominal pain that is greatest in the left lower quadrant. He does complain of nausea, however, the remainder of review of systems is negative. His initial set of vitals signs are as follows: Temp-97.6 °F, HR-85, RR-18, BP-130/67, SpO2-100% RA. On physical exam, the abdomen is firm and mildly distended with guarding, rebound, and severe tenderness to palpation in all four quadrants. His labs reveal a WBC count of 22,000 with normal chemistries, UA and lactic acid. Chest and abdominal radiographs reveal a nonspecific small bowel gas pattern without free air. A CT of the abdomen and pelvis demonstrates diverticulitis of the sigmoid colon. Despite the lack of radiological findings suggesting a surgical abdomen, your suspicion for an acute abdomen remains high. Which of the following is the most appropriate next step in management of this patient.

1. **Start patient on PO ciprofloxacin and metronidazole with instructions to follow up with gastroenterology in 2-3 days.**
2. **Obtain blood cultures, start broad spectrum IV antibiotics and admit to hospital.**
3. **Consult general surgeon for evaluation, obtain blood cultures, start broad spectrum IV antibiotics and admit to hospital.**
4. **Discharge home with instructions regarding dietary modification. No antibiotics are necessary.**



Diverticulitis is defined as inflammation of a diverticulum which is a sac like protrusion in the wall of the colon. The picture above demonstrates the CT findings in diverticulitis.

The arrowheads point to several diverticulum. The dashed arrows show colonic wall thickening. Lastly, the solid arrow demonstrate perisigmoid fat stranding and induration.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

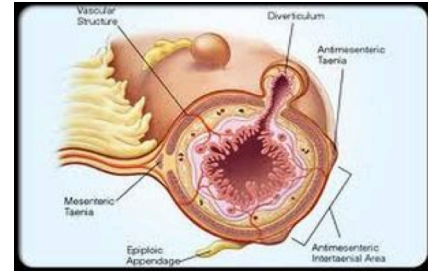
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The correct answer is C. Despite the lack of radiologic evidence supporting the diagnosis of a surgical abdomen, the clinical findings suggest peritonitis and therefore warrant urgent evaluation by a surgeon. Broad spectrum antibiotics and admission to the hospital are also necessary.

Shortly after admission to the hospital, the patient developed a fever and his pain continued to worsen. He was then taken to the OR and found to have a perforation in his sigmoid colon.

Discussion

Diverticulum form in areas of the colonic wall that are relatively weak. This usually occurs in locations where blood vessels penetrate the bowel wall providing blood supply to the intestinal mucosa. These weakened areas allow for development of sac-like protrusions in the colon wall which are susceptible to inflammation. Approximately 4% of patients with diverticulosis will develop diverticulitis. In the United States, diverticulitis is the third most common cause of admission for gastrointestinal illness and the leading indication for elective colon resection. Clinical features depend on severity of disease and associated complications, but includes the following: abdominal pain (most commonly left lower quadrant), fever, nausea, vomiting, rectal bleeding, peritoneal signs, and urinary symptoms. Laboratory findings may include leukocytosis. However, the WBC count may be normal in up to 45 percent of patients. Other laboratory findings suggestive of diverticulitis include sterile pyuria and mild elevations in amylase and lipase. The main stay in diagnosis of diverticulitis is a CT of the abdomen and pelvis with PO and IV contrast. The sensitivity and specificity of this imaging modality is 94% and 99%, respectively. Another advantage of CT scans is their ability to detect other causes of abdominal pain and identify complications associated with diverticulitis. Complications occur in approximately 25 percent of patients with acute diverticulitis and include abscess formation, colonic obstruction, fistulas, and bowel perforation.



Via: www.acuteabd.weebly.com/diverticulitis

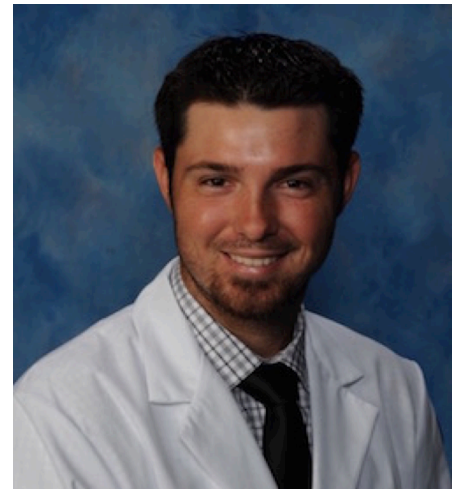
Treatment

The management of acute diverticulitis depends on the severity of disease and presence of associated complications. Acute uncomplicated diverticulitis can be managed as an outpatient with a 7-10 day course of PO antibiotics active against gastrointestinal flora. Currently, there is no evidence for dietary restrictions in these patients and some guidelines allow a regular diet in patients who can tolerate it. Another approach is recommending a clear liquid diet advancing as tolerated to a soft then regular diet. Admission to the hospital is recommended for all patients with complications demonstrated on CT scan as well as patients with any of the following: sepsis, immunosuppression, temp >102.5°F, significant leukocytosis, severe abdominal pain, advanced age, and significant comorbidities. Inpatient treatment should include initiation of broad spectrum IV antibiotics, IV fluids, pain medication, and making the patient NPO. The appropriate providers should be consulted to manage complications such as abscess formation, colonic obstruction, fistula formation, and bowel perforations.

Long term management of diverticular disease begins with dietary modification. Patients should consume a high fiber diet. It is not necessary to avoid seeds, corn, or nuts. All patients should undergo colonoscopy after resolution of symptoms in 6-8 weeks. Elective surgery may be necessary for those with complicated first attacks, immunosuppression, or those experiencing recurrent attacks.

For a list of educational lectures, grand rounds, workshops, and didactics please visit BrowardER.com and **click** on the **"Conference"** link.

All are welcome to attend!



ABOUT THE AUTHOR

This month's case was written by Ryan Gluth. Ryan is a 4th year medical student from NSU-COM. He did his emergency medicine rotation at BHMC in January 2017. Ryan plans on pursuing a career in Emergency Medicine after graduation.

REFERENCES

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Table 2. Outpatient Medication Therapy: Antibiotic Regimens

Augmentin 875 mg bid (amoxicillin and clavulanate potassium 875 mg/125 mg)
 OR
 Metronidazole 500 mg tid and Cipro (ciprofloxacin) 500 mg bid
 OR
 Metronidazole 500 mg tid and Bactrim DS (trimethoprim-sulfamethoxazole 160/800 mg) bid orally for 7-10 days, or until the patient is afebrile for 3-5 days

Source: Reference 9.

Table 3. Inpatient Medication Therapy: Antibiotic Regimens

Anaerobic Coverage	Gram-Negative Coverage	Other
Metronidazole	AND aminoglycoside (gentamicin or tobramycin)	OR
OR	OR	Second-generation cephalosporin (cefoxitin or cefotetan)
Clindamycin	Monobactam (aztreonam)	OR
	OR	Beta-lactamase inhibitor combination (ampicillin-sulbactam or ticarcillin-clavulanate)
	Third-generation cephalosporin (ceftriaxone or ceftazidime or cefotaxime)	

Outpatient and Inpatient Antibiotic Regimens [table]. (2010, December 17). Retrieved from <https://www.uspharmacist.com/article/management-of-diverticular-disease>

In patients with acute uncomplicated diverticulitis mortality rates are negligible and conservative treatment is successful in nearly 100% of patients. The majority of patients will not experience any complications. However, approximately 20-50% of patients will experience recurrent bouts of diverticulitis. Up to 15% of patients with acute diverticulitis will experience some form of complication such as abscess formation, fistulas or obstruction. This increases mortality up to 5%. Intestinal perforation with purulent or fecal peritonitis increases mortality rates up to 20%.

Take Home Points

Diverticulitis results from inflammation of outpouchings in the colon wall. Complications include abscess formation, colonic obstruction, fistulas, and bowel perforation

The most common physical exam finding is left lower quadrant tenderness. Sensitivity and specificity of CT abdomen and pelvis with and without contrast is 94% sensitive and 99% specific.

Patients experiencing complications or those with sepsis, immunosuppression, temp >102.5°F, significant leukocytosis, severe abdominal pain, advanced age, and significant comorbidities should be admitted to the hospital.

Broad spectrum antibiotics active against GI flora should be administered.