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Amanda Fantino

amanda.fantino@otterbein.edu

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Diverticulitis

Amanda Fantino, BSN, RN, CEN
Otterbein University, Westerville, Ohio

Introduction

Diverticulitis is the inflammation of the diverticulum and can cause perforations, micro perforations, or abscesses to form (Wilkins, Embry, & George, 2013). Diverticular disease affects approximately 2.5 million people in the United States and it accounts for more than 280,000 hospitalizations per year (Mulligan, 2015). In 2004, the treatment cost for diverticular diseases, diverticulitis usually, was approximately 3.6 billion dollars, this is a huge expense for health care in this country (Schneider et al., 2015). "Diverticulosis is the presence of diverticula in the absence of inflammation" (Wilkins, Embry, & George, 2013). In the United States one study found that those with diverticulosis have a twenty-five percent chance of developing diverticulitis in their lifetime (Wilkins, Embry, & George, 2013). The number of patient in the United States admitted to the hospital for diverticulitis has steadily increased since 2002, with an increase in the occurrence of admissions of women with diverticulitis and the populations with diverticulitis continues to get younger (Teetor et al., 2017). The increase in diverticulitis patient under 40 years of age is predominantly obese Hispanic males, after 40 years of age the demographics are more widespread (Kijisrichareanchai, Mankongpaisarnrung, Sutamtewagul, Nugent, & Rakvit, 2015). With such a large number of people in our population living with diverticular disease, diverticulitis is a diagnosis that a Family Nurse Practitioner will need to be familiar with diagnosing and treating.

Signs & Symptoms

The signs and symptoms for Diverticulitis are typically gradual onset with left lower quadrant pain, can also be right lower quadrant if the right side of the colon is affected, worsening over hours or days, the pain is usually alleviated by remaining still and is exacerbated by movement, the pain quality is crampy or aching, severity of the pain will be mild in the beginning and increase in intensity (Scheppke & Bryer, 2016). Other symptoms include changed in bowel habits could be constipation or diarrhea, nausea and bloating, fever, chills, elevated white blood cell count, tachycardia and widening pulse pressure (Scheppke & Bryer, 2016). Common comorbidities of diverticulitis are smoking, coronary artery disease, diabetes, and obesity (Philip, Kaushik, & Mittal, 2017). Obesity has been found to be a major risk factor for developing diverticulitis and also, puts the patient at risk for complications and even failure of treatment of diverticulitis (Philip, Kaushik, & Mittal, 2017).

Risk Factors for Diverticulitis

- Low fiber diet
- Obesity
- High intake of red or processed meats
- Low serum 25-hydroxyvitamin D
- Smoking
- Alcohol use
- Sedentary lifestyle
- Greater than 7 bowel movements per week
- First degree relative with diverticulosis

(Mulligan, 2015).

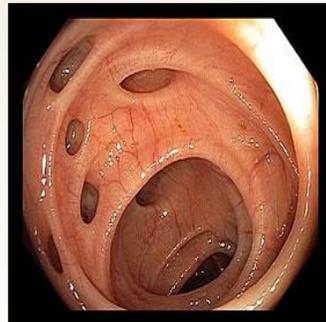
Underlying Pathophysiology

Diverticulosis is a structural alteration in the colonic wall with a herniation of the mucosa and the submucosa this is due to defects in the muscle layer of the colon wall (Scaiola, Colecchia, Marasco, Schiumerini, & Festi, 2016). These herniations are usually in the descending and sigmoid colon (Moorman, 2012). Diverticula in the ascending colon, however, are common in Asian populations (Wilkins, Embry, & George, 2013). Diverticulosis is a chronic condition where multiple diverticula form, they are asymptomatic and do not require treatment, they are typically found during a routine colonoscopy (Moorman, 2012). It is currently thought that these diverticula form due to low fiber content in the western diet, the diverticula usually form at the weakest point in the colon wall where penetration of the blood vessels occur (Mulligan, 2015). The low fiber diet with decreased intestinal contents results in a decrease in the size of the lumen, this causes the pressure exerted by the muscle contractions to be placed on the colon wall instead of the feces (Scaiola, Colecchia, Marasco, Schiumerini, & Festi, 2016). This misplaced pressure causes the wall of the colon to form the diverticula at the weakest points as mentioned above.

Normal Colon



Colon with Diverticula



Images retrieved from:

<http://ddc.musc.edu/public/diseases/colon-rectum/diverticulosis-diverticulitis.html>

Significance of Pathophysiology

The pathophysiology of how the diverticula are formed also plays a role in how they become inflamed. The formation of the diverticula leads to low grade chronic inflammation that is localized within the mucosa of bowel (Scaiola, Colecchia, Marasco, Schiumerini, & Festi, 2016). Acute diverticulitis is an extension of this inflammation of the mucosa that leads to micro-perforations, and at times macro-perforations, in the wall of the diverticula (Scaiola, Colecchia, Marasco, Schiumerini, & Festi, 2016). The inflammation of the colon wall activates the mast cells that are present there and this is believed to lead to the abdominal pain (Scaiola, Colecchia, Marasco, Schiumerini, & Festi, 2016). At times abscesses can form when a diverticulum becomes blocked and infected with fecal matter (Morris, Regenbogen, Hardiman, & Hendren, 2014). The diverticula can become blocked off at the lumen of the colon with fecal contents, due to the slow mobility with a low fiber diet (Sartelli et al., 2016).

Implications for Nursing Care

Initial nursing care to be provided by the Advanced Practice Nurse (APN) should include an abdominal computed tomography or CT scan to evaluate the degree of inflammation of the diverticulitis and rule out any perforation or abscess formation (Sartelli et al., 2016). Blood specimens should be collected and evaluated for leukocytosis and anemia as a perforation could be resulting in hemorrhage within the peritoneal space (Sartelli et al., 2016). Treatment of diverticulitis also include resting the bowel with a clear liquid diet, iv fluids and antibiotics in more severe cases even surgery (Moorman, 2012). Nursing care should include patient educations about increase fiber intake, frequent abdominal assessments, especially bowel movements for blood and changes (Moorman, 2012). Recent studies are showing evidence that in cases of uncomplicated diverticulitis antibiotic therapy can be avoided, however a majority of practitioners continue to prescribe antibiotics (Centor, 2015). Surgical interventions for diverticulitis are becoming less common as it has been found that up to 25 % or post-operative patients continue to have recurrent or unresolved abdominal symptoms, therefore surgery is being avoided whenever possible for these patients (Morris, Regenbogen, Hardiman, & Hendren, 2014).

Conclusion

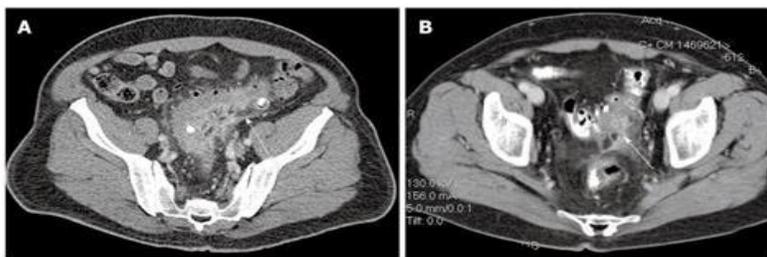
Diverticulitis can have some very serious complications. A perforation of the bowel can lead to peritonitis and even death. With such a large population of this country living with diverticulosis it is highly likely that Advanced Practice Nurse (APN) will be responsible for diagnosing and treating diverticulitis. It is important that the APN be well informed of the pathophysiology behind diverticulitis and the up to date recommended treatment for this disease. The APN will need to provide proper education to clients, such as maintaining a high fiber diet and avoiding smoking and alcohol. Proper diagnosis and management of diverticulitis can decrease healthcare costs and improve client outcomes.



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References

- Centor, R. M. (2016). Acute Uncomplicated Diverticulitis: What to Do Until We Have Better Data. *Annals of Internal Medicine*, 164(2), 120-121. doi:10.7326/M15-2499
- Kijisrichareanchai, K., Mankongpaisarnrung, C., Sutamtewagul, G., Nugent, K., & Rakvit, A. (2015). Diverticulitis in the Young. *Journal of Primary Care & Community Health*, 6(1), 29-34. doi:10.1177/2150131914548512
- Moorman, S. (2012). Help Patients Defy Diverticular Disease. *Journal of Christian Nursing*, 29(2), 82-87. doi:10.1097/CNJ.0b013e318245cfd2
- Morris, A. M., Regenbogen, S. E., Hardiman, K. M., & Hendren, S. (2014). Sigmoid diverticulitis: a systematic review. *JAMA: Journal of The American Medical Association*, 311(3), 287-297. doi:10.1001/jama.2013.282025
- Mulligan, C. (2015). Update on Diverticular Disease and Implications for Primary Care. *Journal for Nurse Practitioners*, 11(9), 883-888. doi:10.1016/j.nurpra.2015.07.010
- Philip, S., Kaushik, M., & Mittal, V. K. (2017). Factors Associated with Treatment Failure after an Index Episode of Acute Diverticulitis. *American Surgeon*, 83(1), 21-22.
- Sartelli, M., Catena, F., Ansaloni, L., Coccolini, F., Griffiths, E. A., Abu-Zidan, F. M., & ... Sakakushev, B. (2016). WSES Guidelines for the management of acute left sided colonic diverticulitis in the emergency setting. *World Journal of Emergency Surgery*, 11(37), 1-15. doi:10.1186/s13017-016-0095-0
- Scaiola, E., Colecchia, A., Marasco, G., Schiumerini, R., & Festi, D. (2016). Pathophysiology and Therapeutic Strategies for Symptomatic Uncomplicated Diverticular Disease of the Colon. *Digestive Diseases & Sciences*, 61(3), 673-683. doi:10.1007/s10620-015-3925-0
- Scheppke, K. A., & Bryer, K. (2016). Getting the Most From Your History and Physical. *EMS World*, 45(12), 81-87.
- Schneider, E. B., Singh, A., Sung, J., Hassid, B., Selvarajah, S., Fang, S. H., & ... Lidor, A. O. (2015). Emergency department presentation, admission, and surgical intervention for colonic diverticulitis in the United States. *American Journal of Surgery*, 210(2), 404-407. doi:10.1016/j.amjsurg.2014.12.050
- Teetor, T., Palachick, B., Grim, R., Bell, T., Martin, J., Blumberg, D., & ... Ahuja, V. (2017). The Changing Epidemiology of Diverticulitis in the United States. *American Surgeon*, 83(4), E134-E136.
- Wilkins, T., Embry, K., & George, R. (2013). Diagnosis and management of acute diverticulitis. *American Family Physician*, 87(9), 612-620.



A: Uncomplicated sigmoid diverticulitis with colonic thickening and straining at CT (arrow), also referred to as "mild" CT diverticulitis. Two diverticula contain contrast medium without evidence of extravasation outside the sigmoid

B: "Severe" CT diverticulitis with extravasation of contrast and small amount of extraluminal air (arrow). This patient was initially managed non-operatively and eventually required surgery for recurrent disease.

Image retrieved from: <https://www.wjnet.com/1007-9327/full/v16/i7/804.htm>