Clinical Case Study: Diverticulitis

Rebecca Behr
Keene State College Dietetic Internship
Concord Hospital

- Level II trauma center
- Non-profit, charitable
- 295 Beds
- Originally founded in 1884
- Became Concord Hospital in 1946

www.concordhospital.org
Concord Hospital Dietitians

- Diet Education
- Preventing, Identifying and Treating malnutrition
- Tube feed and TPN recommendations
- Supplement recommendations
- Group classes
- Drug-Nutrient Interactions
- Nutrition Related Disease Management
- Specializations

www.kumc.edu
ED: History

Anthropometric:
- 50 year old Female
- 5’6”
- 78.5 kg (standing)
- BMI 27.9

Social:
- Married with two children
- Works for a non-profit organization
Medical History

- Strong family history of diabetes
- IBS
- C-section
- Anxiety
Nutrition Diagnosis:

Reduced food and beverage intake related to altered GI function as evidenced by poor appetite, diarrhea, poor intake and nausea and vomiting.

Intervention:

1. Low residue diet education
2. TPN; “What to expect”
3. Colostomy Diet Education
4. Calorie Count

Goals: Meet nutrition needs, maintain weight, transition to PO

Monitor: Weight, edema, GI function, appetite, nausea, vomiting, I&O
Medical Diagnosis

- Acute Sigmoid Diverticulitis
- Perforation of the sigmoid colon
Lab Values & Tests

CT Scan of the abdomen

White Blood Cell count

Normal Range = 5 - 10 units

Elevated WBCs indicate infection, allergic reaction, stress or inflammation.
Pathophysiology of Diverticulosis

Diverticulosis is the condition of having saclike herniations (Diverticula) on the colonic wall.

Risk Factors:

- Colonic structure issues
- Colonic motility problems
- Genetics
- Lifelong low-fiber intake
Pathophysiology of Diverticulosis

- Increased colonic pressure from attempts to propel small, dry, hard fecal material through the bowel lumen.
- Circular muscles of the bowel close around the small fecal material, attempting to push the contents distally.
- The increased pressure causes the a herniation of the mucosal wall.

Diverticulitis - a spectrum of inflammation, abscess formation, acute perforation, acute bleeding, obstruction, and sepsis.
Pathophysiology of GI Perforation

Gastrointestinal perforation is a hole that develops through the wall of the esophagus, stomach, small intestine, **large bowel**, rectum, or gallbladder.

**Causes:**
- Appendicitis
- Cancer
- Crohn's disease
- **Diverticulitis**
- Gallbladder disease
- Peptic ulcer disease
- Ulcerative colitis

**Symptoms:**
- **Severe abdominal pain**
- Chills
- Fever
- Nausea
- Vomiting
Secondary Peritonitis

Inflammation (irritation) of the peritoneum caused by a collection of blood, body fluids, or pus in the abdomen (intra-abdominal abscess).

**Symptoms**
- Abdominal distention
- Abdominal pain
- Decreased appetite
- Fever
- Low urine output
- Nausea
- Thirst
- Vomiting

**Causes**
- ruptured appendix
- stomach ulcer
- perforated colon
- gunshot or knife wound
Sepsis

An overwhelming immune response which the body has to a bacterial infection.

Symptoms:
- Fever
- Chills
- Rapid breathing
- Rapid heart rate
- Rash
- Confusion
- Disorientation

Risk Factors
- Weakened immune system
- Infants and children
- The elderly
- Chronic illnesses, such as diabetes, AIDS, cancer, and kidney or liver disease
- People suffering from a severe burn or physical trauma
Medications

Propofol
Kclor, Kphos, Mg Sulfate
Levothyroxine
Albumin
Furosemide
Insulin Reg CF 30
Ciprofloxacin
Low Residue Diet Education

- Follow the diet for 6-8 weeks after discharge.
- Long-term use of a low-fiber or low-residue diet may not provide needed amounts of vitamin C or folic Acid.
- White bread and refined cereals and rice products.
- Canned or cooked fruits and vegetables.
- Eat tender, ground or well-cooked meats.
- Avoid all dried beans and peas.
- Limit milk and milk products to 2 cups per day
- Exclude prune juice from diet
Colostomy Diet Education

- Avoid certain foods that cause odors or gas, which can over-inflate the colostomy bag and make it more difficult to manage.
- Thoroughly chew everything you eat.

Foods to Avoid:
- Raw vegetables
- Skins and peels of fruit (fruit flesh is OK)
- Dairy products
- Very high fiber food such as wheat bran
- cereals and breads
- Beans, peas, and lentils
- Corn and popcorn
- Brown and wild rice
- Nuts and seeds
- Cakes, pies, cookies, and other sweets
- High fat and fried food such as fried chicken, sausage, and other fatty meats

Foods Recommended:
- Yogurt (with live and active cultures)
- Cranberry juice
- Bananas
- Applesauce
- Well-cooked, sticky white rice
- Buttermilk
- Tapioca
- White toast
Total Parenteral Nutrition (TPN)

Provides nutrition directly into the bloodstream, intravenously, through a peripherally inserted central catheter (PICC).

ClinimixE 5/15 goal rate 80 mL/hr with Lipids 3 times per week.
TPN Labs & Measures

Weight
Electrolytes
BUN
Capillary glucose
I&O
Plasma proteins
3/1: Admission

- Clear liquid diet
- Nauseas but feeling better
- Possible discharge after tolerating diet advancement
- WBC = 15.12
- IV antibiotics

3/2

- Tolerating full liquids
- Given Low Residue diet education
- Nausea improving
- WBC 10.82
- Loose yellow diarrhea, severe abdominal pain, hypotensive.
- CT scan revealed perforation of the sigmoid colon
- Sepsis protocol initiated
- Diet made NPO
- Magnesium, Potassium and Phosphorus bolus

<table>
<thead>
<tr>
<th>Lab Value</th>
<th>Normal Range</th>
<th>ED's level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium (K)</td>
<td>3.5-5 mmol/L</td>
<td>3.4</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>3.0-4.5 mg/dL</td>
<td>2.2</td>
</tr>
<tr>
<td>WBC</td>
<td>5-10 units</td>
<td>7.64</td>
</tr>
</tbody>
</table>
PICC line placed for TPN
- 1 L of fluid drained from abdomen
- Potassium

Severe abdominal pain, distention, tachycardic → CT scan
- CT scan revealed multiseptated loculations in lower abdomen
- Exploratory laparotomy and bilateral ureteral stent placement in anticipation of colostomy
- Diuretics given
Hartmann’s procedure & resection of the sigmoid colon.
<table>
<thead>
<tr>
<th>Date</th>
<th>Progress</th>
<th>Weight (kg)</th>
<th>WBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/9</td>
<td>Extubated</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>3/10</td>
<td>Ice chips &amp; sips</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3/11</td>
<td>Transferred from ICU to surgical unit</td>
<td>103.5</td>
<td></td>
</tr>
<tr>
<td>3/14</td>
<td>Advanced to clears</td>
<td>93.2</td>
<td></td>
</tr>
<tr>
<td>3/15</td>
<td>Advanced to fulls, Reiki</td>
<td></td>
<td>25.20</td>
</tr>
<tr>
<td>3/18</td>
<td>Advanced to regular and kcal count started</td>
<td>89</td>
<td>20.22</td>
</tr>
<tr>
<td>Date</td>
<td>Progress</td>
<td>Weight</td>
<td>Protein (grams)</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>3/19</td>
<td>Anxious about eating; discussed strategies.</td>
<td>80.5 kg</td>
<td>12%</td>
</tr>
<tr>
<td>3/20</td>
<td>Ensure three times daily.</td>
<td>80.5 kg</td>
<td>48%</td>
</tr>
<tr>
<td>3/21</td>
<td>Anxious around food but motivated.</td>
<td>79.5 kg</td>
<td>44%</td>
</tr>
<tr>
<td>3/22</td>
<td>D/C TPN, Bellows drain removed</td>
<td>78.5 kg</td>
<td>50%</td>
</tr>
<tr>
<td>3/23</td>
<td>No nutrition questions. Special K shake at home.</td>
<td>78.5</td>
<td>90%</td>
</tr>
</tbody>
</table>
Resources

Mahan, Escott-Stump, & Raymond. *Krause’s Food and the Nutrition Care Process*.


MedlinePlus