Medications

Ceftriaxone- 2g in 20 mL sterile water for injection... 2g:40mL/hr IVPG every 24 hours for infection
Pharmacological class: third-generation cephalosporin
Therapeutic class: Antibiotic
Nursing assessment: Ask patient if any allergy to other antibiotics, monitor BUN and serum creatinine. If a culture and sensitivity is ordered be sure to collect specimen prior to administration (Jones & Bartlett Learning, 2022).
Prochlorperazine- 5 mg IV push every 6 hours PRN for nausea and vomiting
Pharmacological class: Piperaze phenothiazine
Therapeutic class: Antiemetic
Nursing assessment: Monitor for hypotension (Jones & Bartlett Learning, 2022).
Ketorolac- 15 mg IV push every 6 hours for pain and inflammation
Pharmacological class: NSAID
Therapeutic class: Analgesic
Nursing assessment: Monitor blood pressure and dizziness. Assess for GI bleeding risks and monitor (Jones & Bartlett Learning, 2022).

Demographic Data

Admitting diagnosis: Acute appendicitis with generalized peritonitis, abscess, and gangrene

Age of client: 6 yrs. old

Sex: Female

Weight in kgs: 30.8 kgs

Allergies: No known allergies

Date of admission:06/04/2023

Psychosocial Developmental Stage: Industry vs Inferiority
Cognitive Development Stage: Preoperational

Admission History

Pathophysiology

Disease process: Appendicitis is assumed to result from a blockage by stool or calcified feces. This blockage usually occurs when the mesenteric lymph nodes become inflamed in response to an infection. Another cause of appendicitis could be if the appendix is twisted or occluded. Appendicitis usually occurs in childhood or young adulthood but can happen at any age. According to Capriotti (2020), two significant events lead to appendicitis. These events include the narrowing of the appendix lumen due to obstruction. This obstruction can cause ischemia due to cutting the blood supply off. The next event is the mucosa layer of the appendix grows bacteria which causes inflammation, pressure, and distension. When the inflammation results in ischemia, it leads to necrosis and perforation of the appendix. Perforation of the appendix is when the appendix ruptures, which causes peritonitis from the infected secretions of the appendix moving to the peritoneal cavity.

S/S of disease: Appendicitis usually starts with abdominal pain around the epigastric or umbilical region. Over time, usually one to three days, this pain becomes more localized to the right lower quadrant of the abdomen. Accompanying abdominal pain, nausea, vomiting, fevers, anorexia, chills, and bloating are present. This disease always causes either constipation or diarrhea. There are signs like rebound tenderness, psoas, Rovsings, and obturator to help identify appendicitis by the location of pain and palpation. The patient's symptoms were constipation, abdominal pain, right hip pain, nausea, and vomiting. The patient also reported ear pain and weakness. Upon presentation, the patient's constipation changed to loose stools accompanied by abdominal pain, weakness, and fatigue. The examiner did not use palpitation of the abdomen to help identify appendicitis by rebound tenderness, psoas, Rovsings, or obturator sign.

Method of Diagnosis: When diagnosing appendicitis, a combination of signs leads to an indication of appendicitis. Several imaging tests of the abdomen can be performed, including an X-ray, computerized tomography (CT), or an ultrasound (Capriotti, 2020). The X-ray is only informative if a calcium stone is present within the appendix. An ultrasound will help visualize and show inflammation of the appendix. An elevated white blood cell count (WBC) and C-reactive protein (CRP) help diagnose appendicitis by measuring inflammation. The patient had a CT test completed, which showed concerns of acute perforating appendicitis, leading to the patient being transferred to Carle. The patient also had a WBC, creatinine, blood urea nitrogen, hemoglobin, hematocrit, blood glucose, and platelet blood tests performed. Ultimately CT was the indication of appendicitis in this patient, leading to the perforating appendix. The white blood cell count helped show infection and inflammation.

Treatment of disease: Antibiotics are the primary treatment for appendicitis. If the appendicitis is nonperforated, it may be able to be treated with antibiotics and avoid the need for surgery Capriotti, 2020). Perforated appendicitis requires an appendectomy or removal of the appendix. Intravenous therapy is also used to maintain fluid and electrolyte balance, especially with surgery. Pain management is also essential in treating appendicitis. Antiemetics and other medications can help treat other symptoms associated with this disease process. The patient was treated with the antibiotic Ceftriaxone and had an appendectomy. The patient's pain was managed with Ketorolac and Tylenol as needed. Prochlorperazine was used to help the patient with nausea and vomiting. A Jackson-Pratt drain was used to remove fluid from the wound to promote healing and help decrease infection risk.

The patient was presented to the Richland hospital ED on 06/02/23 for abdominal pain that began 5/24. The patient stated that they just finished antibiotics for strep throat and a UTI but is still feeling weak, fatigued, abdominal pain, ear pain, and right hip pain. The patient's mother stated the patient had vomited on 06/03 multiple times with a non-bilious emesis. After treatment in the ED at Richland hospital, they were transferred to Carle due to a CT imaging concerning perforated acute appendicitis. Upon arrival the patient had complaints of abdominal pain, loose stools, weakness, and fatigue.

Assessment

Relevant Lab Values/Diagnostics

Glucose- normal: 74-100 mg/dL…result: 119 mg/dL
Blood glucose levels could be elevated due to a stress response from the appendicitis and appendectomy (Pagana et al., 2020).
BUN- normal:7-17 mg/dL…result: 5 mg/dL
Decreased levels can be due to the lack of nutrition from the loss of appetite before diagnosis and being on clear liquid diets after surgery (Pagana et al., 2020).
Creatinine- 0.55-1.02 mg/dL…result: 0.50 mg/dL
Low creatinine levels can be due to the low physical mobility (Pagana et al., 2020).
WBC- normal: 4.27-11.40mcL…result: 14.98 mcL
Elevated levels are due to infection, stress, inflammation, and trauma (Pagana et al., 2020). The patient had appendicitis and a new diagnosis of Lyme disease.
RBC-normal: 3.90-4.96 mcL…result:3.53mcL
This slight decrease can be due to blood loss in surgery (Pagana et al., 2020). Malnutrition can also cause this to be decreased, red blood cells correlate with the hemoglobin and hematocrit.
HGB-normal:10.6-13.2 g/dL…. result:9.4g/dL
A nutritional deficiency due to loss of appetite and liquid diet can cause decreased levels, as well as blood loss in surgery (Pagana et al., 2020). This causes lower than normal of delivery of oxygen to the tissues.
HCT-normal: 32.4-39.5%...result:28.9%
The patient having slight blood loss in appendectomy which causes a decrease in red blood cell count, as well as dietary deficiency (Pagana et al., 2020).
Platelet-normal:150-440 mcL…result: 466mcL
Surgery and infections can cause and increase in platelets (Pagana et al., 2020).
Absolute neutrophils-normal:1.64-7.87 10^3/uL…result:12.5010^3/uL
Elevated levels are due to infection, stress, inflammation, and trauma (Pagana et al., 2020). Infection and inflammation stimulate an increased production of neutrophils to help fight the infection.
Absolute monocytes-normal: 0.19-0.81 10^3/uL …result:0.8810^3/uL
Monocytes are increased with infection and inflammation also, but these cells spend a longer time in circulation fighting off the infection (Pagana et al., 2020).
Absolute immature granulocyte-normal:0.00-0.04 10^3/uL..result:0.2210^3/uL
An elevated level is the bodies response to inflammation, infection and the body responder to the stress and trauma (Pagana et al., 2020). These are also white blood cells.
IGM- normal negative…result: positive
The patient's level was positive due to being positive for Lyme disease (Pagana et al., 2020).

X-Ray KUB performed but was normal

Medical History

Previous Medical History: Seasonal allergic rhinitis

Prior Hospitalizations: None

Past Surgical History: None (before admission)

Social needs: Patient lives with mom and dad, plus their 2 dogs. She requires no social needs besides going to school.

Active Orders

Intake/Output q4 hr- routine to be sure the patient isn't retaining any fluid and monitor nutritional needs. To ensure kidneys are excreting an adequate amount of fluid.
IV fluid and clear liquid diet- due to gastric ileus and hypoactive bowel sounds.
Drain care- Patient has a Jackson Pratt drain due to appendectomy, helping prevent infection
Incentive spirometry Q1hr while awake- post op routine to promote lung expansion
Ambulate as tolerated- promote gastric mobility

	Alert and oriented to the person, place, situation, and time. No acute distress and well groomed. No current reports of pain but
Genitourinary	Urine not assessed. No complaints of pain with urination, no dialysis, no catheters, and g
Gastrointestinal	Current liquid diet with a general at home diet. Weight: 30.8 kg. Hypoactive bowel sounds in all four quadrants upon auscultation. Abdomen is tender to touch. Jackson-Pratt drain is present with serosanguinous fluid. Last bowel movement 06/07.
Musculoskeletal	All extremities have full and active range of motion. No edema inspected or palpated bilaterally. Gait is slower than usual due to appendectomy surgery but balanced and smooth.
Neurological	Alert and awake answering questions appropriately for age. Clear speech. Normal cognition. MAEW, equal strength. Appears fatigue but normal for condition and after daily activities.
Most recent VS (highlight if abnormal)	**Time:** 1648 **Temperature:** 99.1℉ **Route:** Axillary **RR:**

	16 **HR:** 108 **BP and MAP:** 111/67 (83) **Oxygen saturation:** 100% **Oxygen needs:** Room air
Pain and Pain Scale Used	FACES pain scale used- No complaints of pain-0.

Nursing Diagnosis 1 Acute pain related to operative procedure and infection as evidence by perforated appendix requiring appendectomy (Phelps, 2020).	**Nursing Diagnosis 2** Delayed surgical recovery related to persistent nausea and vomiting as evidence by frequent emesis and refusal to eat (Phelps, 2020).	**Nursing Diagnosis 3** Imbalanced nutrition: less than body requirements related to inability to ingest and digest food as evidence by hypoactive bowel sounds (Phelps, 2020).
Rationale Pain assessment and management is crucial in planning care. Pain is individualized for each patient and the nurse must ask with each vital due to some patients being reluctant to report pain.	**Rationale** Delayed healing after surgery and other invasive procedures can create a high risk for more complications to occur.	**Rationale** Abdominal injuries increase the risk for imbalanced nutrition. Imbalanced nutrition can lead to a longer hospital stay and longer healing time. Prevention of imbalanced nutrition and maintaining a well nutritional status can help eliminate further complications in the healing process.
Interventions **Intervention 1:** Pain assessed every time vital signs are evaluation **Intervention 2:** Provide measures to relieve pain before it becomes severe	**Interventions** **Intervention 1:** Rotate antiemetics **Intervention 2:** Increase ambulation as tolerated	**Interventions** **Intervention 1:** Monitor and record vital signs, weight, and electrolyte levels. **Intervention 2:** Maintain parenteral fluids as ordered to provide fluid and electrolytes
Evaluation of Interventions The patient was observed in no acute distress after providing pain medication. The patient verbally denied the presence of pain and understood the importance of staying ahead of pain for pain management.	**Evaluation of Interventions** After being administered antiemetics, the patient verbally stated the nauseousness was decreased, and no vomiting was observed. The patient had been refusing to ambulate due to pain but eventually walked around the unit one time.	**Evaluation of Interventions** Intake and outputs were recorded strictly to observe and be sure of fluid loss or retention. The patient showed interest in snow cones and had the ability to eat one. Lab values regarding electrolytes and nutrition remained normal besides a slight decrease in blood urea nitrogen and creatinine.

References (3):

Capriotti, T. (2020). *Davis Advantage for Pathophysiology: Introductory Concepts and Clinical Perspectives* (2nd ed.). F. A. Davis Company.

Jones & Bartlett Learning. (2022). *2022 Nurse's drug handbook* (19th ed.). Jones & Bartlett Learning.

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2020). *Mosby's diagnostic and laboratory test reference* (15th ed.). Mosby.

Phelps, L.L. (2020*). Sparks and Taylor's nursing diagnosis reference manual* (11th ed.). Wolters Kluwer.